

This chapter describes the physical environment, recreation facilities, and associated recreation activities and opportunities that could be affected by implementing the BDCP alternatives in the study area (Plan Area) (Figure 1-4). Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2, provides a discussion of potential specific growth-related effects on recreation in the Delta and SWP and CVP Export Service Areas, including a discussion of participation in Delta recreation.

15.1 Environmental Setting/Affected Environment

15.1.1 Potential Environmental Effects Area

15.1.1.1 Description of Existing Conditions in the Study Area

The Delta, Yolo Bypass, and Suisun Marsh contain numerous parks, extensive public lands, and many interconnected rivers, sloughs, and other waterways that offer diverse recreation opportunities. Privately owned commercial marinas and resorts allow access to the waterways and a variety of other recreational opportunities and services. Private lands also provide several recreational opportunities, particularly hunting.

Recreational Activities and Opportunities in the Study Area

The Delta is a maze of channels and islands at the confluence of the Sacramento and San Joaquin Rivers. It encompasses the largest estuary system on the West Coast. The Delta region is a 1,150-square-mile area that provides more than 500 miles of navigable waterways, equaling more than 57,000 navigable surface acres (California Department of Boating and Waterways 2003). This vast network of rivers, channels, sloughs, and islands provides a unique recreation resource in California.

Based on a statewide survey in which California boaters were asked which waterways they used most out of nearly 300 different waterways, the Delta was identified as a popular boating destinations in the state, exceeded only by the Pacific Ocean, San Francisco Bay, and the Colorado River. In addition, among the 10 regions the state delineated for the survey, the 3 regions that include portions of the Delta (San Francisco Bay, Sacramento River Basin, and Central Valley) accounted for nearly half of the registered boats in the state (California Department of Boating and Waterways 2002).

Recreation users in the Delta often participate in multiple activities during a daily visit; although boating and fishing are the most popular, participants in these activities also take part in wildlife viewing, sightseeing, walking, picnicking, and camping (California Department of Parks and Recreation 1997), contributing to overlap in activity participation by visitors. There is also overlap because activities, such as hunting, fishing, wildlife viewing, and sightseeing, can be both water- and land-based. This overlap creates an interconnected web of users and activities and leads to an appreciation and enjoyment of the Delta for the variety of recreation opportunities available on each trip.

1 This section provides a description of the recreational activities and facilities in the statutory Delta,
2 as well as a discussion of Delta recreation users and estimates of participation in Delta recreation
3 activities.

4 **Water-Based Recreation Activities**

5 The Delta is a regional destination for water-based recreationists because of its climatic conditions,
6 variety and abundance of fish, large maze of navigable waterways, and favorable water levels during
7 summer, when most regional reservoirs experience substantial drawdown. Activities in the Delta
8 include cruising, waterskiing, wakeboarding, using personal watercraft, sailing, windsurfing, and
9 kiteboarding, as well as fishing and hunting (from land and by boat).

10 ***Boating***

11 Most recreational boating use is by small (under 26 feet long) powerboats (California Department of
12 Parks and Recreation 1997; California Department of Boating and Waterways 2003), although larger
13 cruising boats and houseboats are components of boating use in the Delta. Common powerboating
14 activities in the Delta are cruising (exploring the maze of Delta channels), waterskiing,
15 wakeboarding, and using personal watercraft. Opportunities for these activities can be found
16 throughout the Delta, with suitable locations depending on wind, water temperature, channel width,
17 orientation, depth, and proximity to facilities. The Delta provides facilities for boaters including
18 ramps, yacht clubs, and marinas, which often have amenities such as fuel, supplies, waste pump-out
19 facilities, and guest docks. Restaurants and other businesses in the Delta, as well as the towns of
20 Walnut Grove and Isleton, also offer guest docks for temporary boat tie-up.

21 The summer months (Memorial Day to Labor Day) are the peak times for powerboating activities in
22 the Delta, with the Fourth of July typically the single highest peak-use event of the year, followed by
23 other summer weekends and special event days (California Department of Boating and Waterways
24 2003).

25 Boating participation is predicted to increase for the period of 2010–2020 (Plater and Wade 2002).
26 However, boat registration data from the 13 Delta Primary Market Area counties (California
27 Department of Boating and Waterways 2003) for 2002–2009 indicate a pattern of slight but steady
28 declines in boat registrations over that period in most counties (California Department of Boating
29 and Waterways 2003–2010). Overall, the number of registered boats in the Primary Market Area
30 counties fell 5.3% between 2002 and 2009. Given that boats originating in the Primary Market Area
31 account for more than 75% of Delta boating trips (California Department of Boating and Waterways
32 2003), these data suggest that predicted boating activity increases for the period 2000–2010 have
33 not occurred.

34 Nonpowered boating activities in the Delta include sailing, windsurfing, kiteboarding, canoeing, and
35 kayaking. All three wind-related activities (sailing, windsurfing, and kiteboarding) are conducted on
36 the main Sacramento and San Joaquin Rivers, with windsurfing and kiteboarding most common on
37 the Sacramento River from Rio Vista to Sherman Island, and on the San Joaquin River from Twitchell
38 Island to Little Sherman Island (California Department of Boating and Waterways 2003). Sailing
39 activities are conducted more widely on the main rivers. Motorized sailboats can use those Delta
40 waterways that are sufficiently deep. In the eastern Delta, canoeists and kayakers can find tranquil,
41 isolated waterways that provide shelter from strong winds and abundant wildlife-viewing
42 opportunities.

1 Weather conditions make the summer months a preferred time for sailing, windsurfing, and
 2 kiteboarding, with peak use times on summer weekends and holidays. Paddle boaters prefer spring
 3 and fall off-seasons because of cooler air temperatures, less boat traffic, and more wildlife-viewing
 4 opportunities (California Department of Boating and Waterways 2003).

5 *Water- and Land-Based Activity Participation*

6 In 1996, DPR surveyed boat owners and licensed anglers who used the Delta that year (California
 7 Department of Parks and Recreation 1997). Among boaters, cruising and fishing from a boat were
 8 the most frequent activities, with about 75% of respondents participating in each. The most
 9 frequent nonboating activities among boaters were sightseeing, wildlife viewing, and shore-based
 10 fishing. (The first two of those activities can be pursued from a boat or land but were categorized as
 11 “nonboating” activities by the survey.) The survey of anglers indicated that nearly 90% fished from a
 12 boat, about 75% fished from shore, and about 14% fished in tournaments. The most frequent
 13 nonfishing activities among anglers were sightseeing, pleasure boating, and wildlife viewing.

14 Surveys of the small and large boat owners conducted in 2000–2001 for the *Delta Boating Needs*
 15 *Assessment* (California Department of Boating and Waterways 2003) indicated, like the earlier DPR
 16 surveys, that cruising, fishing, and sightseeing were among the most popular Delta recreation
 17 activities. Large-boat owners placed less emphasis on camping and picnicking and more emphasis
 18 on cruising and sightseeing than small-boat owners (although a majority of both groups participated
 19 in those activities) (California Department of Boating and Waterways 2003). Table 15-1 compares
 20 the Delta participation rates among small- and large-boat owners in these and other water- and
 21 land-based recreation activities.

22 **Table 15-1. Boat Owners’ Participation in Water- and Land-Based Recreation Activities in the Delta**

Activity	Small-Boat Owners ^a (%)	Large-Boat Owners ^b (%)
Cruising	51	82
Fishing	67	57
Sightseeing	55	65
Camping	31	13
Picnicking	39	25
Swimming	47	68
Skiing/Wakeboarding	40	17
Wildlife Viewing	34	45

Source: California Department of Boating and Waterways 2003.

^a Small boats were defined as boats less than 26 feet long; data represent the level of participation during small-boat owners’ Delta boating trips (all past trips).

^b Large boats were defined as boats 26 feet long or larger; data represent the level of participation during large-boat owners’ most recent Delta boating trip.

24 **Boat Fishing**

25 Boat fishing is a popular activity in the Delta. Game fish found in the Delta include catfish; sturgeon;
 26 steelhead; striped, largemouth (black), smallmouth, and spotted bass; American shad; Chinook
 27 salmon; crappie; and bluegill (California Department of Parks and Recreation 1997; California
 28 Department of Fish and Game 2011a). Boat fishing is a year-round activity in the Delta, with peak-

1 use seasons varying by species, species abundance, and angling regulations. Striped bass are
2 prevalent fall through spring, sturgeon winter through spring, Chinook salmon late summer through
3 fall, and black bass fall through spring (California Department of Boating and Waterways 2003;
4 SacDelta.com 1998). The Delta is one of the most productive trophy bass fisheries in the nation, and
5 numerous bass tournaments are held in the Delta throughout the year, including several corporate-
6 sponsored tournaments (California Department of Fish and Game 2007a). Fishing is an important
7 recreational activity in the Delta and supports commercial guiding and charter boat opportunities.

8 ***Boat Hunting***

9 Hunting has long been a recreational activity in the Delta, with waterfowl hunting being the primary
10 type. Hunting by boat (typically used as a floating blind) is popular at the larger flooded islands, such
11 as Franks Tract and Sherman Island, because hunters seek open, shallow waters and marsh areas
12 where waterfowl congregate (California Department of Boating and Waterways 2003). Licenses and
13 duck stamps to hunt waterfowl are required by the California Department of Fish and Wildlife
14 (CDFW) and U.S. Fish and Wildlife Service (USFWS). CDFW manages hunting in California, including
15 the public hunting programs at Sherman Island and other smaller wildlife areas. The California
16 Department of Parks and Recreation (DPR) allows hunting at Franks Tract, designated as Franks
17 Tract State Recreation Area. Boat hunting is also allowed at Big Break, which is managed by the East
18 Bay Regional Park District (EBRPD) (Delta Protection Commission 1997). Late fall through early
19 winter is the designated waterfowl hunting season, with starting and ending dates varying each year
20 by species and by hunting method.

21 ***Other Boating-Related Activities***

22 Boaters also participate in other related activities, such as boat camping (typically in houseboats or
23 other large boats with sleeping accommodations), swimming, wildlife viewing, and sightseeing as
24 secondary activities.

25 ***Commercial Boat Tours and Fishing Guides***

26 Commercial tours and guides operate throughout the Delta and provide fishing and sightseeing
27 opportunities. There are guided fishing and charter opportunities throughout the Delta. Boat tours
28 include cruises, private charters, and ecotours through different outfitters, some of which operate
29 year-round (California Delta Chambers and Visitor's Bureau 2009a).

30 ***Land-Based Recreation Activities***

31 Land-based activities are also provided in the Delta and include hunting, shoreline fishing, wildlife
32 viewing, camping, picnicking, hiking and walking on trails, sightseeing, winery tours and festivals,
33 and visiting historic sites.

34 ***Hunting***

35 Private duck clubs, primarily in Yolo County, along with several state wildlife areas and one federal
36 wildlife refuge, provide hunting opportunities in the Delta. Generally, hunting on land is for
37 waterfowl and pheasant; hunting for rabbit, dove, and quail is also allowed at several of the state
38 wildlife areas. A tule elk hunt is conducted at Grizzly Island Wildlife Area in Suisun Marsh. Hunting
39 blinds are provided at Yolo Bypass Wildlife Area and Stone Lakes National Wildlife Refuge (NWR).

1 The designated hunting season for waterfowl is generally late October through January; for upland
2 game birds such as pheasant, the season ranges from August through January, with opening and
3 closing days varying each year by species, geographic zone and hunting method (California
4 Department of Fish and Game 2011b; California Fish and Game Commission 2012). Licenses and
5 duck or upland game stamps are required. CDFW administers the Delta Island Hunting Program, a
6 late-season hunt for pheasants and waterfowl on state-owned lands on Twitchell and Sherman
7 Islands. Hunting days, which typically are Wednesdays and Saturdays, totaled 13 days in 2008,
8 including two junior hunt days and one women's hunt day (California Department of Fish and Game
9 2009a).

10 ***Shoreline Fishing***

11 Public fishing piers and public parks in the Delta provide shoreline, or bank, fishing access. Some
12 marinas also provide fishing piers. Shoreline anglers may gain access to Delta waterways at
13 numerous locations along Delta roads (California Department of Boating and Waterways 2003).
14 Striped bass is the most popular game species among shoreline anglers (California Department of
15 Parks and Recreation 1997). Bank fishing is a year-round activity, with peak seasons varying by fish
16 species. Other species, like crayfish and frogs, with limitations, can also be taken by hand, line, or
17 trap with a valid fishing license.

18 ***Wildlife Viewing/Botanical Viewing/Nature Photography***

19 Opportunities for birding and other wildlife viewing, as well as nature photography, are widespread
20 throughout the Delta; however, only a few locations provide facilities for wildlife viewing. Most
21 wildlife viewing is informal or is secondary to another activity (e.g., fishing, boating). The Delta is a
22 critical stopover for migratory birds, which can be viewed and photographed at the Yolo Bypass
23 Wildlife Area, Stone Lakes NWR, Cosumnes River Preserve, and Woodbridge Ecological Reserve,
24 among other locations. Wildlife viewing and nature photography opportunities are available year-
25 round in the Delta, although opportunities to see and photograph particular migratory bird species
26 vary and generally occur in fall and spring. The arrival of overwintering sandhill cranes in the Delta
27 each fall provides viewing opportunities on public and private lands, and special events and tours
28 are held each year while the birds are present. Botanical viewing opportunities are available in
29 spring at the Jepson Prairie Reserve, where hundreds of plant species have been identified. Delta
30 Meadows River Park (DPR property) is among the last remnants of natural Delta uplands (California
31 Watchable Wildlife 2009). According to the California Department of Parks and Recreation website
32 at the time of this draft EIR/S, some of the facilities at the Delta Meadows River Park are closed to
33 the public and the park currently provides no visitor services. The park continues to serve as a
34 preserve and remains a mooring site for boaters. (California Department of Parks and Recreation
35 2012a; California Department of Parks and Recreation 2012b).

36 ***Camping***

37 Camping opportunities, including both tent and recreational vehicle (RV) camping sites, are
38 available in the Delta, mostly at large public parks and private resorts and marinas. Some private
39 resorts and marinas provide access to tenants and guests only, not the general public. Camping
40 opportunities for the general public, including tent, RV and group sites, are available at a few public
41 parks. In the past, Brannan Island State Recreation Area, offered boat-in camping, where a boat
42 berth is accompanied by a land campsite. Due to park closures, however, this activity is no longer

1 available until further notice. Camping is associated with general public recreational use of the
2 Delta, particularly boating and fishing, and therefore peaks during summer.

3 ***Picnicking***

4 The generally fair weather, potential for viewing wildlife, and scenic vistas make the Delta a setting
5 for picnicking. Many public day-use areas and marinas throughout the Delta provide picnic sites.
6 Some areas also offer group picnicking opportunities. Picnicking use is often combined with boating,
7 fishing, swimming, and wildlife viewing because of the location of many picnic sites in the Delta
8 along the water's edge. Picnicking, along with boating and fishing, is tied to general public use of the
9 Delta and is higher in summer.

10 ***Hiking/Walking/Biking***

11 Hiking, walking, and biking trail opportunities are fairly limited in the Delta, with only a few widely
12 scattered trails available for hiking/walking, and only a few trails available along the shoreline in the
13 Pittsburg, Antioch, and Oakley areas for hiking/walking and biking. The 6.5-mile Marsh Creek Trail
14 is accessible from the Big Break Regional Shoreline in Oakley. Several Delta parks have short, paved
15 walkways or footpaths; however, these are not considered "trails" for the purpose of this discussion.
16 The Delta Protection Commission (DPC) is leading the planning process for the Great California
17 Delta Trail System. The system will link the San Francisco Bay Trail and trails planned along the
18 Sacramento River in Yolo and Sacramento Counties to present and future trails in and around the
19 Delta and along shorelines in several counties (Delta Protection Commission 2007). This includes
20 the Mokelumne Coast to Crest Trail, which is anticipated to pass through the Delta (Mokelumne
21 Coast to Crest Trail 2012). Trail use in the Delta occurs year-round.

22 ***Sightseeing***

23 There are few formal facilities in the Delta specifically for sightseeing (i.e., signage, markers), so this
24 activity typically is informal and self-led. Six recommended driving tours found on the California
25 Delta Chambers and Visitor's Bureau website (California Delta Chambers and Visitor's Bureau
26 2009b) lead visitors past historic sites, sloughs, rivers, marinas, resorts, ferries, and bridges in all
27 areas of the Delta. These driving tours combine travel and sightseeing on the main highways in the
28 Delta (State Routes [SRs] 160, 12, and 4) with viewing sites on smaller roads along sloughs or across
29 islands. The Sacramento County and Contra Costa County portions of SR 160 (River Road) are
30 designated as State Scenic Highways (California Department of Transportation 2011; California
31 Department of Transportation 2008; Cadd pers. comm.). The SR 4 Bypass from SR 160 near Antioch
32 to SR 84 near Brentwood (about 9.5 miles) is eligible for designation as a State Scenic Highway
33 (California Department of Transportation 2008). A 28-mile portion of SR 160 in Sacramento County
34 is also designated as a County Scenic Highway (Sacramento County 2011:25). Scenic highway
35 designations are discussed further in Chapter 17, *Aesthetics and Visual Resources*, Section 17.2.2.5.

36 ***Winery Tours and Festivals***

37 The Delta produces about 25% of the wine grapes grown in California. While much of the crop is
38 sold to winemakers in other regions, the Delta is becoming known for its own wines. Clarksburg and
39 Lodi have established their own appellations and the Delta Farmer's Market in Isleton sells more
40 than 300 varieties of Delta wines. The Delta's winery vineyards and tasting rooms have grown in
41 popularity, with winery tours and festivals hosted in places like Clarksburg, Isleton, Lodi, and Rio
42 Vista (California Delta Chambers and Visitors Bureau 2010a; Delta Farmer's Market 2011).

1 **Visiting Historic Sites**

2 The Delta has a long and varied history of human use and, therefore, has many historic sites, several
 3 of which are associated with legacy towns, such as Isleton, Locke, and Walnut Grove. (The term
 4 “legacy town” is applied to several small, historic towns along the Sacramento River in the Delta that
 5 were originally established as riverboat ports.) Self-guided walks, available in both Locke and
 6 Walnut Grove, take visitors past old sites and buildings, including residences, a market, gambling
 7 museum, blacksmith shop, butcher shop, and bank. Visitors can stop at historic sites in the Delta
 8 year-round. DPR and the Sacramento Housing and Redevelopment Agency have restored a former
 9 Chinese immigrant boarding house in Locke to preserve its history (Reyman Construction 2011).
 10 The project also includes a visitor’s center and interpretative exhibits within the boarding house
 11 (Locke Foundation 2012).

12 **Recreational Facilities in the Delta**

13 Numerous recreational facilities throughout the Delta support participation in the wide variety of
 14 activities available. The following sections describe public recreation areas/facilities and privately
 15 owned recreational facilities for each Delta county. A summary of the public and private recreational
 16 facilities in each county is presented in Table 15-2. Additional details on the privately owned
 17 facilities, including name, type of facility, and amenities provided, are presented in Appendix 15A,
 18 *Privately Owned Recreation Facilities, by County*. Further county-specific information about
 19 recreation in the Delta is located in Appendix 15B, *Recreation Setting and California State Park*
 20 *Recommendations by County*, and additional maps of existing recreational facilities in the Delta are
 21 included in Appendix 15C, *Additional Recreation Figures*.

22 **Table 15-2. Summary of Public and Private Delta Recreational Facilities by County**

Recreation Facility	Alameda	Contra Costa	Sacramento	San Joaquin	Solano	Yolo
Marinas ^a	1	47	31	31	3	5
Fishing Access	0	9	7	6	0	2
Hunting Areas	0	7	3	4	3	18
Public Boat Ramps ^b	0	3	5	5	0	1
Trail Access	0	2	3	2	0	1
Camping Areas ^b	0	0	5	2	0	0
Windsurf Access	0	0	5	0	0	0

Sources: Delta Protection Commission 1997, 2006.

^a For the purposes of this summary, yacht clubs and sailing clubs are included in the marina totals.

^b Some marinas also have a public-use ramp and/or recreational vehicle or tent camping areas available for a fee; those facilities are not included in the tallies of public boat ramps or stand-alone camping areas.

24 **Alameda County**

25 Only the northeastern corner of Alameda County extends into the Delta, south of Clifton Court
 26 Forebay. Delta waterways in the county include a short segment of Old River and an adjacent dead-
 27 end slough, where a single private marina is located.

1 **Public Facilities/Areas**

2 There are no public facilities/areas in the Alameda County portion of the Delta.

3 **Private Facilities**

4 Rivers End Marina & Storage, a private marina in Alameda County, provides dry storage facilities
5 and a boat launch ramp in the Delta (Appendix 15A, *Privately Owned Recreation Facilities, by*
6 *County*).

7 **Contra Costa County**

8 Contra Costa County includes the southwestern Delta, bounded by the San Joaquin River on the
9 north and Old River on the east. Cities include Pittsburg and Antioch on the San Joaquin River and
10 the communities of Oakley, Brentwood, and Discovery Bay south of the San Joaquin River.
11 The Contra Costa County portion of the Delta contains numerous public and private recreational
12 facilities, including more than 40 marinas and yacht clubs, the largest of which provides several
13 hundred berths. More than 20 private marinas and yacht clubs are on Bethel Island, making that
14 area a focus for Delta boating activity.

15 **Public Facilities/Areas**

16 *Antioch Dunes National Wildlife Refuge*

17 Established in 1980, the Antioch Dunes NWR was the first refuge in the country to be established to
18 protect endangered plants and insects. The refuge was closed to the public in 1986 to protect the
19 refuge's endangered species and their habitats. The refuge is fenced, and public use is limited to
20 monthly docent-led tours and educational tours given to groups upon request (U.S. Fish and Wildlife
21 Service 2001; U.S. Fish and Wildlife Service 2011a).

22 *Antioch Marina and Barbara Price Marina Park*

23 The City of Antioch owns and manages a large marina on the San Joaquin River, approximately
24 3.25 miles west of the SR 160 Antioch Bridge. The 12.8-acre marina provides opportunities for
25 boating and fishing, consisting of fishing piers, an observation pier, 310 berths, pump-out facilities, a
26 fuel dock, a restaurant, a guest dock, and overnight berthing. The berthing facilities accommodate
27 both powerboats and sailboats (City of Antioch 2012). Adjacent to the marina is the Barbara Price
28 Marina Park, a city neighborhood park. The 7-acre park has picnic sites, a group picnic area, an
29 exercise course, a tot lot, and shoreline fishing access (City of Antioch 2011).

30 *Antioch Municipal Boat Ramp*

31 The City of Antioch provides a public boat launching facility east of Rodgers Point. The site includes
32 a boat ramp, fishing pier, and parking area (City of Antioch 2003).

33 *Antioch/Oakley Regional Shoreline*

34 EBRPD's Antioch/Oakley Regional Shoreline Park is near the SR 160 bridge in Antioch. A 550-foot
35 fishing pier, constructed from the old SR 160 bridge piers, enhances shoreline fishing opportunities
36 on the San Joaquin River. A fish cleaning station and 10 picnic sites are also provided in the park
37 (East Bay Regional Park District 2008a; East Bay Regional Park District 2004).

1 *Big Break Regional Shoreline*

2 EBRPD owns and manages Big Break Regional Shoreline—1,648 acres along the San Joaquin River in
3 the City of Oakley (California State Coastal Conservancy 2007). Since adopting the Big Break
4 Regional Shoreline Land Use Plan in 2001, EBRPD has been developing portions of the site in phases.
5 A 40-acre upland area, a former agricultural parcel with a mosaic of habitats, was chosen as the site
6 for an environmental education project. EBRPD designated two Recreation Units on the site
7 (totaling 12 acres of long-abandoned asparagus fields) for interpretive exhibits, trails, an
8 observation platform, a picnic area, a pier, and a small boat launch ramp. A parking lot, an access
9 road, restrooms, and a fishing and observation pier were completed first; the Delta Discovery Area
10 then opened in the summer of 2011, adding a covered amphitheater seating 150, and a three-
11 dimensional in-ground sculpture of the Delta (California State Coastal Conservancy 2007; Delta
12 Science Center 2009; East Bay Regional Park District 2012a; R. Gehlke pers. comm.). The Delta
13 Science Center is a partner with EBRPD and provides environmental education and interpretation at
14 the site. The Delta Science Center is a nonprofit collaboration of educators, scientists, and
15 representatives from agriculture, industry and government (cities of Oakley, Brentwood, Antioch,
16 and Pittsburg; EBRPD; Pacific Gas and Electric Company; and the Sierra Club, among others)
17 (California State Coastal Conservancy 2007; Delta Science Center 2009).

18 A visitor center for Big Break Shoreline, opened in October 2012, houses visitor information,
19 exhibits, and the Delta Science Center office and laboratories (R. Gehlke pers. comm.).

20 *Big Break Regional Trail*

21 The recently-completed Big Break Regional Trail runs along the southern edge of Big Break Regional
22 Shoreline from the north end of the Marsh Creek Regional Trail in the east to Big Break Road,
23 providing access to Brentwood and Oakley. The 3-mile multi-use trail is paved and has a rest stop. At
24 the western (Oakley) end of Big Break Regional Trail, a 0.25-mile path connects to the Delta
25 Discovery Area (East Bay Regional Park District 2012a; R. Gehlke pers. comm.).

26 *Browns Island Regional Preserve*

27 Browns Island lies at the confluence of the Sacramento and San Joaquin Rivers, north of the city of
28 Pittsburg. The 595-acre island is owned and managed by EBRPD. There are no recreational facilities
29 on the island, and access is arranged by appointment only (East Bay Regional Park District 2008b).

30 *Clifton Court Forebay*

31 Clifton Court Forebay is located at the SWP Harvey O. Banks Pumping Plant and is managed by the
32 California Department of Water Resources (DWR). Motorized boating, camping, and swimming are
33 not allowed at the forebay. However, bank fishing takes place at the southern end where vehicle
34 access is permitted. Hunting is allowed on Wednesdays, Saturdays, and Sundays during designated
35 seasons for waterfowl (California Department of Fish and Game 2011a). There are no recreational
36 facilities at the forebay.

37 *Franks Tract State Recreation Area*

38 Franks Tract State Recreation Area, just north of Bethel Island, occupies two flooded islands, Franks
39 Tract and Little Franks Tract. No recreational facilities are in the State Recreation Area, and both
40 flooded islands are accessible only by boat. Recreation opportunities in the State Recreation Area

1 include fishing, boating, and waterfowl hunting (on part of the open water) (California Department
2 of Parks and Recreation 2012c).

3 *Jersey Island*

4 Fishing, hiking, and pheasant hunting are allowed by the Ironhouse Sanitary District (ISD) on its
5 Jersey Island property, although users must obtain a Jersey Island Public Use Pass (and parking pass
6 if needed) from ISD. Fishing is available year-round, and hiking is available year-round except
7 during pheasant hunting season. A short trail, the Halsey Trail, is on the north side of the island from
8 the ferry landing west along the San Joaquin River (Ironhouse Sanitary District 2009).

9 *Marsh Creek Regional Trail*

10 EBRPD's Marsh Creek Regional Trail runs along Marsh Creek in eastern Contra Costa County, from
11 the Delta shores of Big Break south to Creekside Park in Brentwood. The paved, multiuse trail is
12 6.5 miles long. Plans exist to extend the trail to 14 miles, connecting the Delta to Morgan Territory
13 Regional Preserve and Round Valley Regional Park east of Mount Diablo State Park (East Bay
14 Regional Park District 2008c).

15 *Rhode Island Wildlife Area*

16 The Rhode Island Wildlife Area consists of a 67-acre island located in Old River between Holland
17 Tract and Bacon Island. It provides habitat for rivers otters, beavers, muskrats, and birds such as
18 ducks, herons, and egrets, among others. The wildlife area is accessible only by boat and provides
19 opportunities for fishing, wildlife viewing, and waterfowl hunting (California Department of Fish
20 and Game 2009b; California Department of Fish and Game 2011b). Though the public can access this
21 area, no facilities are provided.

22 *Riverview Park*

23 The City of Pittsburg provides waterfront access to the Sacramento River at the 4-acre Riverview
24 Park (City of Pittsburg 2004). The park provides opportunities for picnicking and shoreline fishing
25 and has footpaths and several picnic sites.

26 **Private Facilities**

27 There are 41 marinas, four yacht clubs, one duck club, one hunting club, and one fishing access site
28 in Contra Costa County. All the marinas have boat berths for long-term storage. There are 19 small
29 marinas (fewer than 50 berths), 15 medium marinas (50 to 200 berths), and 7 large marinas (more
30 than 200 berths). About one-third (15) of the marinas provide a launch ramp, and 12 marinas
31 provide campsites. Six marinas also offer waste pump-out facilities and four provide picnicking
32 areas. One marina also provides fishing access, and one offers houseboat rentals. One of the yacht
33 clubs provides boat berthing and fuel facilities; however, the other three yacht clubs, the duck club,
34 and the hunting club do not provide any facilities. The fishing access site provides only a fishing pier.

35 **Sacramento County**

36 A narrow strip of Sacramento County, between the Sacramento River and Steamboat Slough on the
37 west and between the San Joaquin and Mokelumne Rivers on the east, extends across the northern,
38 central, and western portions of the Delta. This area includes a string of small historic towns on the
39 Sacramento River: Courtland, Hood, Isleton, Locke, Ryde, and Walnut Grove. Numerous private and

1 public recreational facilities are located in this portion of the Delta. These include more than
 2 30 marinas and a yacht club, about half of which are concentrated on Andrus Island in an area
 3 commonly referred to as the “Delta Loop,” and which together account for more than 1,800 boat
 4 berths. The county is also home to one of the largest public parks in the Delta, Brannan Island State
 5 Recreation Area.

6 ***Public Facilities/Areas***

7 *Brannan Island State Recreation Area*

8 Brannan Island State Recreation Area, just south of the City of Rio Vista, is on the northern side of
 9 Threemile Slough and occupies a peninsula between the slough and the Sacramento River from the
 10 SR 160 bridge to Sevenmile Slough. Activities available in the State Recreation Area include camping,
 11 picnicking, boating, fishing, and swimming. Facilities include a 10-lane boat ramp, visitor center,
 12 group picnic area, day-use area, swim beach, fishing pier, more than 140 campsites, 13 RV sites with
 13 boat berths, and an RV rally area (California Department of Parks and Recreation 2011a; California
 14 Department of Parks and Recreation 2011b). Additional State Recreation Area day-use facilities and
 15 windsurfing access at Windy Cove are on the western side of SR 160, across from the main portion
 16 of the park (California Department of Parks and Recreation 2012d). However, DPR implemented
 17 service reductions at Brannan Island State Recreation Area in May 2011 because of budget
 18 reductions. In June 2012, some of those restrictions were removed and camping and day use are
 19 available 7 days per week and the boat launch remains open every day. Delta Meadows and Windy
 20 Cove parking areas and restrooms are closed. Windy Cove, the RV rally area, and Group Camp
 21 remain closed. Delta Meadows River Park guided canoe tours are no longer offered (California
 22 Department of Parks and Recreation 2011a).

23 *Cliffhouse and Georgiana Slough Fishing Access*

24 These small shoreline fishing access sites are provided by Sacramento County. Cliffhouse Fishing
 25 Access offers parking, picnic sites, and shoreline access to the Sacramento River. This site is for
 26 fishing and clamming and is also used for windsurfing access (SacramentoRiver.org 2009a).
 27 Georgiana Slough Fishing Access provides picnic sites and shoreline access to Georgiana Slough and
 28 is also used for hand launching small boats (SacramentoRiver.org 2009b).

29 *Cosumnes River Preserve*

30 The 45,859-acre Cosumnes River Preserve consists of lands owned by the U.S. Bureau of Land
 31 Management (BLM), CDFW, DWR, Ducks Unlimited, Sacramento County, State Lands Commission,
 32 and The Nature Conservancy (the largest landholder), as well as lands held in conservation
 33 easement (Cosumnes River Preserve 2008). The preserve was created to restore and protect the
 34 Cosumnes River and the surrounding landscapes including the valley oak riparian forest and
 35 freshwater seasonal wetland habitat communities (Cosumnes River Preserve 2009a; Cosumnes
 36 River Preserve 2009b).

37 The preserve provides “non-consumptive” recreation activities such as bird watching, photography,
 38 nature study, hiking, and canoeing / kayaking (Cosumnes River Preserve 2009c). A few specially
 39 designated areas have been set aside for limited hunting. Fishing is only allowed from a boat and
 40 with the proper license. In order to limit disturbance to the wildlife and habitat within the preserve,
 41 recreation opportunities and public access are concentrated around the visitor center, which houses
 42 interpretive displays, interactive educational exhibits, and a picnic area. The visitor center is open

1 and staffed by volunteers on Saturdays and Sundays and is often open during the weekdays, but
2 hours vary depending upon staff availability. The visitor center provides information on the
3 preserve's self-guided driving tour, which travels public roads adjacent areas of the Cosumnes River
4 Preserve that are not accessible by the public (i.e., they are only accessible only by guided tours or
5 are privately owned) (Cosumnes River Preserve 2009d). From the center, visitors can access the 3-
6 mile Cosumnes River Walk Trail, located on levees that pass through different habitats, and the 1-
7 mile Lost Slough Wetlands Walk Trail, which tours through marshes and wetlands (Cosumnes River
8 Preserve 2009e, 2012a). The two trails are open to the public every day of the year from sunrise to
9 sunset. Other areas of the Preserve are not open to self-guided tours. There is no public fishing
10 access at the preserve, although boat fishing (with appropriate permits and licenses) is allowed in
11 the Cosumnes River main channel and sloughs accessible from the Mokelumne River. Limited
12 waterfowl hunts for youth and mobility-impaired hunters have been allowed in the Cougar Wetland;
13 however, hunting in the rest of the preserve is only allowed by boat on the river and sloughs
14 (Cosumnes River Preserve 2009f). The preserve has a courtesy boat dock south of the visitor
15 parking lot for paddle boats only (Cosumnes River Preserve 2012b).

16 *Delta Meadows River Park*

17 Delta Meadows River Park is behind the town of Locke, along Railroad Slough. Delta Meadows was
18 acquired to protect one of the last remnants of natural conditions in the Delta before Euro-American
19 settlement. It is primarily undeveloped, although a road passes through the parcel along Railroad
20 Slough. A 1-mile footpath on the old railroad levee parallel to the road provides walking/hiking
21 opportunities, although the property has been officially closed since May 2011 because of state
22 budget constraints. Canoe tours that used to be offered twice daily on Saturdays and Sundays during
23 spring and fall are no longer available. Boating and fishing opportunities in the area are still
24 available (California Watchable Wildlife 2009; California Department of Parks and Recreation
25 2011a; California Department of Parks and Recreation 2012b).

26 *Garcia Bend Park*

27 The City of Sacramento manages the 24-acre Garcia Bend Park on the Sacramento River. Facilities
28 include a boat ramp with trailer parking and a courtesy dock, three soccer fields, two tennis courts,
29 three picnic sites, a tot lot, and four senior and disabled fitness equipment stations (City of
30 Sacramento 2011).

31 *Hogback Island Access*

32 Hogback Island Access is a Sacramento County park that provides boating, fishing, and picnicking
33 opportunities along Steamboat Slough near the small town of Ryde. Facilities include a picnic area
34 and lagoon with a dock and boat launch (Sacramento County Regional Parks 2010a).

35 *Isleton and Walnut Grove Courtesy Docks*

36 The towns of Isleton and Walnut Grove both provide courtesy docks along the Sacramento River for
37 boaters to temporarily tie up while visiting the towns.

38 *Lower Sherman Island Wildlife Area*

39 A 3,115-acre marshland in the Lower Sherman Island Wildlife Area lies at the confluence of the
40 Sacramento and San Joaquin Rivers, accessible only by boat (California Department of Fish and
41 Game 2009c). The primary recreational activities at the wildlife area are fishing and hunting,

1 although other recreation activities include wildlife viewing, photography, and powered and
 2 nonpowered boating. Waterfowl hunting is the primary hunting activity in the wildlife area; hunting
 3 for upland game also is permitted (California Department of Fish and Game 2011b). Fishing occurs
 4 year-round in the wildlife area; the site is known for striped bass, largemouth bass, and catfish
 5 (California Department of Fish and Game 2007a). There are no recreational facilities.

6 *Sherman Island Public Access Facility*

7 The Sherman Island Public Access Facility on the Sacramento River is managed by Sacramento
 8 County and provides opportunities for fishing, picnicking, windsurfing, kiteboarding, boating, and
 9 camping. A few picnic facilities, a boat launch, and launch sites for windsurfing, kiteboarding, or
 10 other small craft are available to the public (SacramentoRiver.org 2009c; California Department of
 11 Fish and Game 2007a). The site is used for fishing, and both shoreline and boat fishing opportunities
 12 are available. RV and tent camping are also allowed (California Department of Fish and
 13 Game 2007a).

14 *Stone Lakes National Wildlife Refuge*

15 The Stone Lakes NWR receives more than 6,000 visitors annually to participate in docent guided
 16 hikes, guided paddle trips, bird watching, special events and education tours for schools and civic
 17 groups. There is no indoor visitor's center within the refuge. A public waterfowl hunting program
 18 consists of land- and water-accessible blinds with an emphasis on opportunities for youth and
 19 wheelchair-dependent visitors. The hunting program is open to the public and is located within the
 20 refuge's Sun River Unit. There is no fishing within the refuge. Docent guided hikes occur from
 21 October through May and are open to the public. Self-guided access within the refuge is only found
 22 at the Blue Heron Trails. The Blue Heron Trails are open to the public year-round and offer one mile
 23 of trails focusing on environmental education and native habitats. The refuge also offers a guided
 24 Canoe & Kayaking Wildlife Observation Program during the months of June through September
 25 (Friday, Saturday, and Sunday) within Lower Beach Lake. This area is normally restricted to public
 26 access when guided tours are not offered. The refuge also hosts the annual *Walk on the Wildside*
 27 outdoor festival event in May. The public event is held on Saturday at the Beach Lake Preserve Picnic
 28 Area and celebrates the International Migratory Bird Day (U.S. Fish and Wildlife Service 2007a; U.S.
 29 Fish and Wildlife Service 2007b).

30 ***Private Facilities***

31 Private facilities in Sacramento County include 31 marinas, 3 camping areas, and 1 boat ramp. All of
 32 the marinas have boat berths for long-term storage. The marinas include 12 small marinas (fewer
 33 than 50 berths), 14 are medium size (50 to 200 berths), and 5 are large (more than 200 berths).
 34 Sixteen of the marinas provide campsites, and many provide picnicking opportunities (13), a launch
 35 ramp (12), and waste pump-out facilities (10). A few of the marinas provide fishing access (4) or a
 36 fishing pier (3). One marina also provides cabins. The camping facilities collectively offer fishing
 37 access, guest docks, a ramp, a pump-out facility, a beach, and picnicking opportunities. The private
 38 boat ramp also provides an area for dry storage. Appendix 15A, *Privately Owned Recreation*
 39 *Facilities, by County*, Table 15A-1 summarizes the recreational facilities for private use in
 40 Sacramento County.

1 **San Joaquin County**

2 San Joaquin County encompasses a large area of the eastern and southern Delta, east of the
3 Mokelumne and Old Rivers. The county includes the cities of Lathrop, Stockton, and Tracy at the
4 margins of the Delta and the San Joaquin River as it crosses this part of the Delta. Although
5 recreational facilities are scattered on various waterways throughout the county, including more
6 than 30 marinas and yacht clubs, most of the facilities are in or near Stockton. The largest marinas
7 contain more than 700 berths. There are also several private clubs located on channel islands in the
8 vicinity of Stockton, and several public launch ramps in Stockton and on the San Joaquin River to the
9 south.

10 ***Public Facilities/Areas***

11 *Buckley Cove Park and Louis Park*

12 The City of Stockton manages Buckley Cove and Louis Parks, 53 and 74 acres, respectively. Both
13 parks have boat launches and pier fishing; Buckley Cove Park provides boat access to the San
14 Joaquin River Deep Water Ship Channel, and Louis Park provides boat access to the Smith Canal
15 (City of Stockton 2011a). Buckley Cove Park also has a few picnic sites and a children's play area.
16 Louis Park has footpaths; picnic sites, including two group picnic areas; and facilities for tennis,
17 softball, baseball, and handball (City of Stockton 2008).

18 *Calaveras River Bike Path*

19 The 7.43-mile Calaveras River Bike Path runs from Buckley Cove to Cherokee Road in the City of
20 Stockton (City of Stockton 2011b).

21 *Dos Reis Regional Park*

22 Dos Reis Regional Park is located on the San Joaquin River and is managed by the County. Camping,
23 boating, fishing, and day-use opportunities are available, with facilities that include 26 RV campsites
24 with hookups, showers, a boat ramp, a picnic area, and a children's play area. Tent camping is also
25 available (San Joaquin County 2008a).

26 *Grupe Park and Legion (American) Park*

27 Grupe Park on Fourteenmile Slough, and Legion Park on Smith Canal, are both City of Stockton local
28 parks, each roughly 20 acres. Both parks provide several picnic sites, a tot lot, fishing opportunities,
29 and at least one multiuse sports facility. Grupe Park also provides a group picnic area and facilities
30 for tennis, softball, baseball, and handball (City of Stockton 2008).

31 *McLeod Park, Weber Point Park, and North and South Seawalls*

32 The contiguous McLeod Park, Weber Point Park, and the North and South Seawalls cover a total of
33 about 16 acres at the terminus of the Stockton Deep Water Ship Channel and are managed by the
34 City of Stockton. The parks have been featured in the ongoing renovation of the downtown Stockton
35 waterfront and provide paved promenades along the water. Weber Point Park is the centerpiece and
36 provides an outdoor event center where concerts and festivals are held (City of Stockton 2011c).

1 *Morelli Park*

2 The City of Stockton's Morelli Park, on the Stockton Deep Water Ship Channel, includes a four-lane
3 boat launch and other new amenities. Dry stack boat storage is planned (City of Stockton 2008).

4 *Mossdale Crossing Regional Park*

5 San Joaquin County manages Mossdale Crossing Regional Park on the San Joaquin River south of
6 Lathrop. The park provides a boat ramp, fishing opportunities, five picnic sites, and one playground
7 (San Joaquin County 2008b).

8 *Westgate Landing Regional Park*

9 San Joaquin County manages the 15-acre Westgate Landing Regional Park on the Mokelumne River.
10 The park provides camping, fishing, picnicking, and boating opportunities. It has 14 campsites (RV
11 and tent, but no hookups), 1 fishing pier, 9 picnic sites, and 24 boat slips available for overnight
12 docking (San Joaquin County 2008c).

13 *White Slough Wildlife Area*

14 White Slough Wildlife Area consists of 880 acres of designed ditches, canals, marshes, grasslands,
15 riparian habitat, and nine ponds that were created during the construction of Interstate 5 (I-5). The
16 wildlife area, west of Lodi and north of Stockton, provides opportunities for fishing, hiking, and
17 wildlife viewing. Hunting opportunities are also available from September 1 through January 31,
18 specifically for pheasant, quail, dove, and waterfowl (California Department of Fish and Game
19 2009d; California Department of Fish and Game 2011b).

20 *Woodbridge Ecological Reserve*

21 Woodbridge Ecological Reserve, also known as the Isenberg Sandhill Crane Reserve, consists of two
22 parcels of land west of I-5 that provide opportunities for viewing migratory sandhill cranes. The
23 southern parcel is open to the public, and a seasonal 2-hour, docent-led crane tour begins at this
24 location, continuing to the northern parcel, where a parking lot, restroom, and crane viewing blind
25 are provided. The northern parcel can be visited only on these tours. Crane tours usually are
26 available the first three weekends of each month from October to February (California Department
27 of Fish and Game 2009e). In addition to guided tours during October and November, CDFW now
28 sponsors the Lodi Sandhill Crane Festival in the fall (Lodi Sandhill Crane Association 2011).

29 ***Private Facilities***

30 Twenty-one private marinas, nine yacht clubs, three duck clubs, and one sailing club are located in
31 San Joaquin County. Twenty of the marinas provide boat berths for long-term storage. The marinas
32 include seven small (fewer than 50 berths), nine medium (50 to 200 berths), and five large (more
33 than 200 berths). Over half of the marinas provide a launch ramp (13) and waste pump-out facilities
34 (11), and many also provide campsites (9) and picnicking opportunities (7). Five of the marinas in
35 San Joaquin County also provide houseboat rentals. One marina provides dry storage and fuel
36 facilities. The sailing club and two of the yacht clubs provide boat berthing facilities. The other seven
37 yacht clubs and all three duck clubs do not provide any amenities.

38 Appendix 15A, *Privately Owned Recreation Facilities, by County*, Table 15A-1 summarizes the
39 recreational facilities for private use in San Joaquin County.

1 **Solano County**

2 Solano County encompasses a portion of the northwestern Delta, west of the Sacramento River, and
 3 includes the Cache and Lindsey Slough complex north of Rio Vista. The City of Rio Vista on the
 4 Sacramento River is outside of, but immediately adjacent to, the statutory Delta, with the boundary
 5 defined by the river in that area. Recreational facilities are not numerous, but several public parks
 6 with boat launching facilities and a large private marina in the Rio Vista area provide recreational
 7 access to the Delta.

8 The 116,000-acre Suisun Marsh is east of Interstate 680 (I-680), south of SR 12, north of Suisun and
 9 Grizzly Bay, and west of the statutory Delta. The marsh provides natural wetlands and habitat for
 10 hundreds of species and is located along the Pacific Flyway; thus, the marsh is an outstanding place
 11 for bird watching, wildlife viewing, and waterfowl hunting. The marsh offers opportunities for
 12 fishing, hiking, and boating (California Department of Water Resources 2011). It includes two public
 13 wildlife areas, one public ecological reserve, one public open space area, and many private duck
 14 clubs. There are few developed public recreation facilities in the marsh; most developed facilities
 15 are at the Rush Ranch Open Space Area and the Grizzly Island Wildlife Area.

16 The total estimated annual recreation use of Suisun Marsh is about 130,000 user-days, about half of
 17 which is attributed to waterfowl hunting at the numerous private duck clubs (Delta Vision 2007).
 18 Each season, the Grizzly Island Wildlife Area Complex hosts 7,000–8,000 waterfowl hunters
 19 (California Department of Fish and Game 2010a); more than 1,000 pheasant hunters; and up to 100
 20 elk, rabbit, and pig hunters. The manager of the complex has estimated more than 45,000 user-days
 21 of fishing activity in the marsh (two-thirds in the wildlife area), and more than 12,000 user-days of
 22 recreational activity are attributed to nonhunting and fishing activities such as wildlife viewing and
 23 dog training, nearly all of which occur in the wildlife area (Delta Vision 2007).

24 **Public Facilities/Areas**

25 *Hill Slough Wildlife Area*

26 The 1,723-acre Hill Slough Wildlife Area is just south of SR 12 along Grizzly Island Road (California
 27 Department of Fish and Game 2008a). The wildlife area contains a complex of marshes, sloughs, and
 28 grassland that supports mammals, raptors, and a large variety of waterfowl. The only activities
 29 allowed in this wildlife area are bird watching and wildlife viewing; hunting is not permitted. There
 30 are no recreation facilities in the wildlife area.

31 *Peytonia Slough Ecological Reserve*

32 South of SR 12 and west of the Hill Slough Wildlife Area is the Peytonia Slough Ecological Reserve
 33 (California Department of Fish and Game 2007b). The reserve can be accessed only by boat from
 34 Suisun Slough; the nearest public launch is the Suisun City Boat Ramp. Fishing (including fishing
 35 from boats), wildlife viewing, and hiking are permitted activities. Restrooms facilities and graveled
 36 foot trails are provided.

37 *Rush Ranch Open Space*

38 Rush Ranch is located 2 miles south of SR 12 on Grizzly Island Road. This 2,070-acre marsh and
 39 grassland area on the northeastern side of Suisun Marsh provides opportunities for recreation and
 40 education for thousands of visitors each year (Solano Land Trust 2010a). Recreation opportunities
 41 include hiking, wildlife viewing, and bird watching; educational opportunities include visiting the

1 nature center, the Kit House museum, and visitor center. Visitors can also participate in one of the
2 monthly events held at the site, which include volunteer improvement day, blacksmith
3 demonstrations, horse-drawn wagon rides, and interpretive walks (Solano Land Trust 2010a;
4 Solano Land Trust 2010b; Rush Ranch Educational Council 2010). Facilities at the ranch include
5 three self-guided trails, a nature center, and a museum and visitor center. Facilities available for rent
6 at the ranch include a meeting room, picnic/barbeque area, and a fully furnished two-bedroom guest
7 quarters (Solano Land Trust 2010b).

8 *Grizzly Island Wildlife Area*

9 The 15,300-acre Grizzly Island Wildlife Area is a complex of 10 distinct parcels or units, most of
10 which are not connected and are surrounded by private property (California Department of Fish and
11 Game 2010b). The 10 units are located throughout most of Suisun Marsh south of the Hill Slough
12 Wildlife Area and Peytonia Slough Ecological Reserve (California Department of Fish and Game
13 2009f). The largest unit is the Grizzly Island Unit, which contains most of the wildlife area's facilities
14 and receives much of the hunting use.

15 The Grizzly Island Wildlife Area provides opportunities for hiking, fishing, wildlife viewing, bird
16 watching, photography, dog training, and hunting. Facilities in the wildlife area include levee trails,
17 parking areas, restrooms, fishing piers, a wildlife-viewing platform, and hunting blinds (California
18 Department of Fish and Game 2010b; California Department of Fish and Game 2010c; California
19 Department of Fish and Game 2010a). The Grizzly Island Unit has a 7.5-mile self-guided tour along
20 Grizzly Island Road with stops at the nine parking areas that provide access to the many levee trails
21 in the unit (California Department of Fish and Game 2010c). Fishing is allowed at the Grizzly Island
22 Unit, Island Slough Unit, and Belden's Landing, which is north of the Island Slough Unit on
23 Montezuma Slough and includes a boat launch facility (California Department of Fish and
24 Game 2010d; Solano County 2012). In the wildlife area, hunting for a variety of species, including
25 waterfowl, dove, pheasant, tule elk, and rabbit, is allowed; however, the different units in the wildlife
26 area have different hunting regulations (California Department of Fish and Game 2010a). Special
27 hunts in the wildlife area include a junior pheasant hunt and two tule elk hunts (one adult and one
28 apprentice). General public use of the wildlife area is not allowed during the tule elk hunts and
29 during the waterfowl hunting season (California Department of Fish and Game 2010e).

30 *Calhoun Cut Ecological Reserve*

31 Calhoun Cut Ecological Reserve, on the far western edge of the Delta, provides fishing and waterfowl
32 hunting. Access to the reserve is by boat only via Lindsey Slough to Calhoun Cut Slough (California
33 Department of Fish and Game 2009g). There are no recreational facilities in the reserve.

34 *Decker Island Wildlife Area*

35 The 35-acre Decker Island Wildlife Area, south of Rio Vista, constitutes the northernmost end of
36 Decker Island along the Sacramento River. The wildlife area is accessible only by boat and provides
37 opportunities for wildlife viewing and hunting (as regulated by CDFW) (California Department of
38 Fish and Game 2009h; California Department of Fish and Game 2011b). No recreational facilities are
39 provided in the wildlife area.

40 *Jepson Prairie Preserve*

41 At the far western edge of the Delta, native bunchgrass prairie and vernal pools are protected in the
42 Jepson Prairie Preserve. The Solano Land Trust owns the preserve, and the University of California,

1 Davis supports reserve management. Visitors can participate in docent-guided walks past vernal
2 pool and prairie habitat to glimpse some of the more than 400 plant species in the preserve. Walks
3 are provided on weekends from March through May. No other public recreational activities or
4 facilities are in the preserve (University of California Davis 2009).

5 *Miner Slough Wildlife Area*

6 Miner Slough Wildlife Area is 37-acres and consists of a small island and narrow peninsula where
7 only 10 acres are above high tide. Located at the confluence of Miner Slough and Cache Slough, the
8 wildlife area is accessible only by boat and includes excellent riparian vegetation that supports
9 shorebirds, waterfowl, raptors, and beavers. Bird watching, wildlife viewing, and fishing are
10 allowed. Hunting for waterfowl is allowed during open season. There are no recreation facilities in
11 the wildlife area (California Department of Fish and Game 2010f).

12 **Private Facilities**

13 Private facilities in Solano County are two marinas, one yacht club, and one hunting club. Both of the
14 marinas have boat berths for long-term storage and are of medium size (50–200 berths). A launch
15 ramp and picnicking opportunities are available at both marinas. One of the marinas also has
16 campsites and a fishing pier. The yacht club provides only a dock. The hunting club provides
17 pheasant and chukar partridge hunting on 4,700 acres of land (Gamebirdhunts.com 2009) and also
18 offers camping and fishing.

19 Suisun Marsh has historically been a popular duck hunting location; around 1880, the first private
20 duck clubs were established in the marsh, and by 1930, the primary use of Suisun Marsh was
21 waterfowl hunting (California Department of Water Resources 2000:3–4). Duck hunting continues
22 to be a use of Suisun Marsh, with 158 private duck clubs located over 52,000 acres in the marsh.
23 These clubs are managed for waterfowl habitat; the wetlands are flooded to coincide with waterfowl
24 season (California Department of Water Resources 2009a; California Department of Water
25 Resources 2011). The one licensed game bird club in Suisun Marsh, the Suisun Marsh Hunting
26 Preserve, released domestically reared game birds to provide additional hunting opportunities;
27 however, this operator did not renew its license in 2011 (G. De La Rosa pers. comm.).

28 **Yolo County**

29 Yolo County encompasses much of the northern Delta west of the Sacramento River. The
30 Sacramento River Deep Water Ship Channel crosses from north to south through this portion of the
31 county, and the Yolo Bypass occupies the area west of the ship channel. Water-based recreational
32 facilities of the type found throughout most of the other Delta counties are relatively few. The most
33 numerous facilities are the 17 private duck hunting clubs in the vicinity of the Yolo Bypass.

34 **Public Facilities/Areas**

35 *Clarksburg Fishing Access*

36 Clarksburg Fishing Access, owned and managed by Yolo County, provides a boat ramp, parking, and
37 bank access for boating, waterskiing, and fishing activities. The facility occupies a 3.9-acre shelf of
38 land inside the Sacramento River levee (Yolo County 2009).

1 *Yolo Bypass Wildlife Area*

2 The Yolo Bypass Wildlife Area, owned and operated by CDFW, is in the northwestern Delta along the
 3 Sacramento River Deep Water Ship Channel. (A small portion of the wildlife area north of
 4 Interstate 80 (I-80) is outside the statutory Delta.) It is a public waterfowl and pheasant hunting
 5 area, with duck blinds and parking areas. Fishing occurs primarily at the East Toe Drain and along
 6 Putah Creek. The wildlife area also provides wildlife viewing and photography opportunities. There
 7 is an automobile tour route for viewing, and the 16 miles of trails in the wildlife area can be used for
 8 viewing and walking/hiking. The Yolo Basin Foundation conducts many educational and
 9 interpretive programs in the wildlife area, including the Discover the Flyway school program,
 10 Flyway Nights lectures, tours of the wildlife area, a vernal pool open house, bat tours, and the
 11 California Duck Days wetland festival (California Department of Fish and Game 2008b).

12 *Fremont Weir Wildlife Area*

13 The Yolo Bypass constitutes a floodway for the Sacramento River when the river water level is high.
 14 The water spills over at the Fremont Weir into the Yolo Bypass at the 1,461-acre Fremont Weir
 15 Wildlife Area. Although no facilities are in the wildlife area, there are opportunities for fishing, bird
 16 watching, and wildlife viewing. Hunting is allowed during spring turkey season and daily from July 1
 17 through January 31. Game species found in the wildlife area include pheasant, quail, dove, rabbit,
 18 waterfowl, deer, and wild turkey (California Department of Fish and Game 2010g).

19 *Sacramento Bypass Wildlife Area*

20 The Sacramento Bypass Wildlife Area is an element of the Yolo Bypass just north of I-80. The 360-
 21 acre wildlife area provides valuable cover and feeding grounds for wildlife, particularly during late
 22 fall, winter, and early spring. Fishing in the Tule Canal, wildlife viewing, and bird watching are
 23 allowed in the wildlife area. Hunting is also allowed between September 1 and January 31. Game
 24 species in the wildlife area include waterfowl, pheasant, and dove. No recreation facilities are in the
 25 wildlife area (California Department of Fish and Game 2010h).

26 ***Private Facilities***

27 The Yolo County portion of the Delta contains seventeen duck clubs, four marinas, and one yacht
 28 club. All the marinas and the yacht club have boat berths for long-term storage. One of the marinas
 29 provides a launch ramp, and one offers camping and picnicking opportunities. The yacht club has
 30 waste pump-out facilities. The yacht club and two of the marinas are small (fewer than 50 berths)
 31 and the remaining three are medium (50–200 berths).

32 **Recreation Users in the Delta**

33 According to the Delta Boating Needs Assessment (California Department of Boating and Waterways
 34 2003), 75% of surveyed boat owners who had recently boated in the Delta lived within 75 miles of
 35 the Delta. This area is referred to as the *Primary Market Area* and consists of 13 counties: Alameda,
 36 Calaveras, Contra Costa, Marin, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Santa
 37 Clara, Santa Cruz, Solano, and Stanislaus. The next largest source of boaters who use the Delta is
 38 referred to as the *Secondary Market Area* and represents an additional 10% of Delta boaters. The
 39 Secondary Market Area consists of the following 14 counties: Amador, Colusa, El Dorado, Lake,
 40 Mariposa, Mendocino, Merced, Monterey, Placer, San Benito, Sonoma, Sutter, Tuolumne, and Yolo
 41 (California Department of Boating and Waterways 2003).

1 Recreation Participation

2 The two dominant recreation uses in the Delta have historically been fishing and boating. The
 3 results of the *Sacramento-San Joaquin Delta Outdoor Recreation Survey*, which evaluated recreation
 4 use and recreation user characteristics, showed that boating and fishing were among the most
 5 popular recreation uses at that time (California Department of Water Resources 1980:5, 6, 7, 74). Of
 6 the individual visitors surveyed, 47.6% participated in boating and 47.6% also participated in
 7 fishing (these estimates are not additive as the survey responses could include multiple activities by
 8 each respondent). For groups visiting the Delta who participated in the survey, fishing was the
 9 highest rated activity with 28.2% reporting participation fishing (these respondents were not asked
 10 about participation in boating or camping activities). For residents using the Delta for recreation
 11 uses, results for individuals also showed highest participation in fishing (69.1%) and boating
 12 (68.1%), and resident groups identified fishing as the highest (24.7%)(these respondents were not
 13 asked about participation in boating or camping activities). Other popular activities in which
 14 respondents from the four survey groups reported participating in during their visits to the Delta
 15 included relaxing, driving for pleasure, sightseeing, swimming, and water skiing (California
 16 Department of Water Resources 1980:75–78). Estimates of recreation use in the Delta from a 2002
 17 study (Plater and Wade 2002), which used 1997 as the baseline year, reinforce that recreational
 18 boating and fishing are two of the main Delta recreation activities. The study estimated that total
 19 1997 Delta recreation use consisted of almost 6.4 million visitor-days (Table 15-3). Almost 75% of
 20 this total recreation use was attributed to boating, with 16% attributed to fishing. Day use, which for
 21 this study encompassed all other nonboating and fishing activities, accounted for the remaining 10%
 22 of total recreation use in 1997. Camping was not treated as a primary activity in the development of
 23 these estimates but rather as a secondary activity most often associated with boating and fishing
 24 (Plater and Wade 2002).

25 The Delta Boating Needs Assessment (California Department of Boating and Waterways 2003), from
 26 which the previous Delta use estimates were taken, used statewide boater surveys conducted for the
 27 assessment to estimate a total of 6.4 million boating-related visitor-days in the Delta for the baseline
 28 year 2000. The survey data also were used to estimate peak-single day visitation in 2000 of
 29 approximately 25,000 visitors. Peak-day activity for small boats was estimated to be approximately
 30 7,800 trips and for large boats approximately 600 trips.

31 **Table 15-3. Estimates of Boating, Fishing, and Day Use in the Delta**

Activity	Visitor-Day ^a Use Estimate (1997) ^c
Boating	4.71 Million
Fishing (from shore and by boat)	1.00 Million
Day Use ^b	0.66 Million
Total Annual Recreation Use	6.37 Million

Source: Plater and Wade 2002

^a A visitor-day is equivalent to 12 hours of recreation activity. This activity may represent one visitor recreating for 12 hours or more than one visitor recreating for shorter periods.

^b Day use includes all nonboating or fishing activities.

^c At the time of this draft EIR/S, there was no data more current than 1997.

32
 33 Hunting was described above as a seasonally popular activity in the Delta. Most public hunting use
 34 in the statutory Delta occurs at the Yolo Bypass Wildlife Area, with more than 6,000 people

1 participating in the 2008–2009 season. Additional hunting activity occurs during more limited,
 2 reservation-only hunts on the DWR lands of Sherman and Twitchell Islands and at Stone Lakes NWR
 3 (Table 15-4). In addition to the Yolo Bypass Wildlife Area, CDFW allows hunting at several other
 4 small wildlife areas in the Delta where no special permits or reservations are required; no hunter
 5 use data are available for these locations.

6 **Table 15-4. Hunting Participation in the Delta at Select Public Hunting Locations**

Location	Number of Hunters Participating (2008–2009 Season)
Yolo Bypass Wildlife Area	6,077
Sherman and Twitchell Islands	142
Stone Lakes NWR	190

Sources: California Department of Fish and Game 2010a; U.S. Fish and Wildlife Service 2009.

7
 8 Although recreational activities occur year-round in the Delta, the most use occurs in summer. The
 9 1996 survey of Delta boaters indicated that June, July, and August were the months with the greatest
 10 boating activity; the month with the least boating activity was December. The 1996 survey of Delta
 11 anglers indicated that May, June, and July were the most popular months for fishing, closely followed
 12 by August and September (California Department of Parks and Recreation 1997). Concentrations of
 13 recreation activity in the Delta often are related to special events. The most common of these events
 14 are bass fishing tournaments, which occur year-round but are particularly prevalent during spring
 15 and early summer. As an example, Russo's Marina near Oakley hosts a bass tournament nearly every
 16 weekend throughout spring and summer. In a large bass tournament, participation can be as high as
 17 several hundred anglers.

18 The number of sturgeon fishing tournaments are less numerous; however, an annual 2-day
 19 tournament hosted by a Bay Point marina has been attended by more than 1,000 anglers in recent
 20 years (Burgarino 2009). A 1996 survey indicated that nearly half of tournament fishing occurs in the
 21 western portion of the Delta and that nearly all the remainder occurs in the eastern and central
 22 Delta (California Department of Parks and Recreation 1997). The city of Rio Vista, on the
 23 Sacramento River, hosts a 3-day bass derby with a carnival, parade, and other activities each
 24 October. This event is among the annual community-hosted events in the Delta that draw heavy boat
 25 traffic to these communities (Table 15-5).

1 **Table 15-5. Annual Community-Based Delta Recreation Events**

Month	Events/Locations
February	Isleton Chinese New Year celebration
April	Asparagus Festival (Stockton) Opening day boat parades (Bethel Island and numerous other locations throughout the Delta)
June	Cajun Festival
July	Fireworks shows (Antioch, Pittsburgh, Rio Vista, and other locations) Wimpy's Annual Poker Run (Walnut Grove Area) Courtland Pear Fair
August	Walnut Grove Catfish Jubilee Bethel Island 50's Bash
September	Delta Big Dog Poker Run Delta Blues Festival Antioch Riverfront Jamboree
October	Rio Vista Bass Festival

Source: SacDelta.com 2012.

2

3 Numerous fireworks shows and other events are sponsored by Delta towns and marinas each
4 Fourth of July (SacDelta.com 2012), and many hundreds of boats congregate at favored anchoring
5 locations during that holiday weekend.

6 The Economic Sustainability Plan for the Sacramento-San Joaquin Delta (Delta Protection
7 Commission 2012:167) provides a summary of actual visitation numbers to several Delta recreation
8 sites. This information is presented below in Table 15-6.

1 **Table 15-6. Summary of Actual Visitation to the Delta**

Site	Number
Brannon Island SRA (day use, 2009)	88,459
Brannon Island SRA (camping, 2009)	36,069
Delta Meadows State Park (day use, 2009)	18,933
Delta Meadows State Park (camping, 2009)	2,155
Franks Tract SRA	24,305
Stone Lakes National Wildlife Refuge (USFWS) (approx.)	7,000
Stone Lakes National Wildlife Refuge (USFWS) (approx.)	7,000
Cosumnes River Preserve (approx.)	70,000
Lower Sherman Island (CDFW) (approx.)	5,000
White Slough Wildlife Area (CDFW) (approx.)	12,000
Yolo Bypass Wildlife Area (USFWS) (approx., includes student tours)	30,000
Sherman Island (Sacramento County)	25,000
Hogback Island Fishing Access (Sacramento County)	10,800
Clarksburg Boat Launch (Yolo County)	1,713
Belden's Landing (Solano County)	15,642
Sandy Beach Park (Solano County)	100,611
Dos Reis Park (San Joaquin County)	25,815
Mossdale Crossing Regional Park (San Joaquin County)	23,630
Oak Grove Regional Park (San Joaquin County)	84,058
Westgate Landing (San Joaquin County)	10,283
Isleton Crawdad Festival (approx.) ^a	200,000
Rio Vista Bass Derby and Festival (approx.)	12,000
Totals	796,480

Source: As cited from personal communication with DPR in 2010 in Delta Protection Commission 2012.

^a Isleton Crawdad Festival and Rio Vista Bass Derby and Festival are not analyzed as recreation sites in this chapter.

2

3 **Recreation Participation Trends and Projections**

4 The most recent analyses available predicted steady growth in Delta recreation participation over
5 the past decade (2000–2010), and continued, but slowing, growth in the next decade (2010–2020),
6 although boat registrations have not reflected this trend. The Delta Boating Needs Assessment
7 (California Department of Boating and Waterways 2003) identified a projection of 6.4 million
8 boating-related visitor-days in 2000, and projected that annual visitation would increase at the rate
9 of 0.79% per year from 2000 to 2010 (no published data are available to establish whether the 2010
10 use projections were realized) and at the rate of 0.46% per year from 2010 to 2020 to reach 8.1
11 million annual boating-related visitor-days by 2020 (Table 15-7). As discussed in the Existing
12 Conditions section, the number of registered boats in the Primary Market Area counties fell 5.3%
13 between 2002 and 2009. Boats originating in the Primary Market Area account for more than 75%
14 of Delta boating trips (California Department of Boating and Waterways 2003), which suggests that
15 predicted boating activity increases for the period 2000–2010 have not occurred.

Table 15-7. Delta Boating-Related Recreation Participation Projections

Period	Projected Growth (Visitor-Days)	Projected Participation (Visitor-Days)
2000 (base year)	Not applicable	6.4 million
2000–2010	Annual growth: 50,500 (0.79%) Total growth: 1.0 million (15.8%)	7.4 million (2010)
2010–2020	Annual growth: 34,100 (0.46%) Total growth: 0.7 million (9.2%)	8.1 million (2020)

Source: California Department of Boating and Waterways 2003.

15.1.1.2 Description of Existing Conditions in the Upstream of the Delta Region

Recreation conditions in the Upstream of the Delta Region at SWP and CVP reservoirs and associated waterways that supply water to the Delta are considered because the action alternatives may have operational effects on these upstream components of the SWP and CVP. DWR and Reclamation operate the SWP and the CVP, respectively, to divert, store, and convey SWP and CVP water consistent with applicable laws and contractual obligations. The SWP and CVP reservoirs (from north to south) include Trinity Lake (also referred to as Claire Engle Lake), Shasta Lake, Whiskeytown Lake, Lake Oroville, Folsom Lake, New Melones Lake, San Luis Reservoir, and Millerton Lake. The corresponding SWP and CVP waterways are the Trinity River downstream of Lewiston Dam, the Sacramento River downstream of Keswick Dam, the Feather River downstream of Lake Oroville, the American River downstream of Folsom Lake, the Stanislaus River downstream of New Melones Lake, and the San Joaquin River downstream of Friant Dam.

DWR maintains and operates the SWP to store water and distribute it to urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. The SWP facilities are also operated to improve water quality in the Delta, control Feather River flood waters, provide recreation, and enhance fish and wildlife (California Department of Water Resources 2010).

The CVP was originally authorized by the Rivers and Harbors Act of 1935. The CVP was reauthorized by the Rivers and Harbors Act of 1937 for the purposes of “improving navigation, regulating the flow of the San Joaquin River and the Sacramento River, controlling floods, providing for storage and for the delivery of stored waters.” The CVP was reauthorized in 1992 through the CVPIA, which modified the 1937 Act and added mitigation protection and restoration of fish and wildlife as a project purpose. Further, the CVPIA specified that the dams and reservoirs of the CVP should now be used “first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and fish and wildlife enhancement.”

See Chapter 5, *Water Supply*, Section 5.1.2, for additional information about the management and operation of these reservoirs.

Recreational Activities and Opportunities Upstream of the Delta, New Melones Lake and San Luis Reservoir

The SWP and CVP water storage facilities provide substantial opportunity for recreational activities throughout the year. The reservoirs provide on-water boating and angling opportunities in addition

1 to shoreline angling, camping, and day uses. These facilities release flows to the downstream rivers,
2 which also support boating, angling, and shoreline activities.

3 **Reservoirs**

4 Trinity Lake, Shasta Lake, and Whiskeytown Lake are central features of the Whiskeytown-Shasta-
5 Trinity National Recreation Area (NRA), established by Congress in 1965 to provide for public
6 outdoor recreation use and enjoyment, among other purposes (USDA Forest Service 1996).

7 Folsom Lake, New Melones Lake, and Millerton Lake are also CVP reservoirs; Lake Oroville is the
8 primary storage reservoir for the SWP. San Luis Reservoir serves both the SWP and CVP. Each of
9 these water bodies, except New Melones Lake, and the surrounding lands has been designated as a
10 State Recreation Area.

11 ***Trinity Lake***

12 The 19-mile-long Trinity Lake is the focus of the Trinity Unit of the Whiskeytown-Shasta-Trinity
13 NRA, managed by the U.S. Department of Agriculture Forest Service (USDA Forest Service). Water-
14 based recreation opportunities on the reservoir include fishing, houseboating, swimming, and
15 waterskiing; land-based opportunities include wildlife viewing, hiking, picnicking, and camping. Of
16 the 145 miles of shoreline at the lake, developed facilities are concentrated primarily along the
17 shoreline of the Stuart Fork Arm. Recreation facilities include numerous campgrounds (tent, RV,
18 boat-in), picnic areas, boat ramps, resorts, and marinas. Lewiston Lake, also part of the Trinity Unit,
19 is located just south of Trinity Dam and is 7 miles long and much narrower and colder than Trinity
20 Lake. Several recreation facilities located along the western side of Lewiston Lake support
21 recreation opportunities such as camping, fishing, wildlife viewing, bird watching, and boating
22 (USDA Forest Service 2012a).

23 ***Shasta Lake***

24 Shasta Lake is the largest reservoir in California, with 29,500 surface acres when full. USDA Forest
25 Service manages the lake and surrounding lands as the centerpiece of the Shasta Unit of the
26 Whiskeytown-Shasta-Trinity NRA. Water-based recreation is the main attraction, and boating is the
27 predominant recreation activity at the lake.

28 The lake is used year-round for a wide variety of boating and related activities, such as both
29 warmwater and coldwater fishing, and has gained a reputation as a premier houseboating
30 destination. Campers have a choice of more than a dozen public campgrounds and designated
31 shoreline camping areas and a similar number of private campgrounds and RV parks offered at
32 several resorts and marinas on or near the lake (USDA Forest Service 1996). Shasta Lake is bisected
33 by I-5, which provides easy access in 4 hours or less travel time for more than 5 million residents of
34 southern Oregon and northern California, including the urban populations of Sacramento and the
35 San Francisco Bay Area. Single-day peak-season boating use levels as high as 1,400 boats have been
36 recorded in recent years (Graefe et al. 2005).

37 ***Whiskeytown Lake***

38 Whiskeytown Lake is 8 miles west of Redding and is a main feature of the National Park Service-
39 managed Whiskeytown Unit of the Whiskeytown-Shasta-Trinity NRA. The lake provides 36 miles of
40 shoreline and 3,200 surface acres for a variety of water-based recreation opportunities, such as
41 swimming, scuba diving, kayaking, canoeing, rowing, fishing, sailing, waterskiing, and powerboating

1 (personal watercraft are prohibited) (National Park Service 2011a). Recreation facilities at the lake
2 include boat launches, campgrounds, fishing piers, picnic areas, and beaches. The area adjacent to
3 the lake includes many primitive campsites and trails for hiking, mountain biking, and horseback
4 riding (National Park Service 2011b).

5 ***Lake Oroville***

6 Lake Oroville is near the City of Oroville, at the confluence of the North, South, and Middle forks of
7 the Feather River, about 75 miles north of Sacramento, and covers 15,500 surface acres at full pool.
8 Lake Oroville is the primary storage reservoir for the SWP. The lake is the focus of Lake Oroville
9 State Recreation Area, which is managed by DPR (California Department of Parks and Recreation
10 2008a). There are recreation facilities around the lake: two full-service marinas, five larger and
11 several smaller (car-top) boat launch ramps, three family campgrounds and several boat-in camps,
12 an equestrian campground, and ten floating campsites (California Department of Parks and
13 Recreation 2008a). Recreation facilities also are located at the Lake Oroville Visitors Center and at
14 the Thermalito Forebay and Afterbay, both offstream regulating reservoirs downstream of Lake
15 Oroville. The facilities at Lake Oroville State Recreation Area support a wide variety of recreational
16 opportunities, including powered and nonpowered boating, warmwater and coldwater fishing,
17 developed and primitive camping, picnicking, swimming, horseback riding, hiking, and mountain
18 biking. Visitor information sites offer cultural and informational displays about the developed
19 facilities and the natural environment (California Department of Parks and Recreation 2008a).

20 ***Folsom Lake***

21 Folsom Lake, and its associated dam is owned and managed by the Bureau of Reclamation. The
22 facility, 25 miles east of Sacramento, at the confluence of the North and South forks of the American
23 River, is a water management facility / flood control structure protecting the Sacramento
24 metropolitan area. With 75 miles of shoreline and 10,000 surface acres of water (California
25 Department of Parks and Recreation 2010a; California Department of Parks and Recreation 2010b),
26 it is the focus of the Folsom Lake State Recreation Area and recreation and lands surrounding the
27 reservoir that are managed by DPR for Reclamation. The State Recreation Area provides some
28 recreation facilities, primarily around the southern portion of the lake. It has two swimming areas,
29 seven boat launches, two small-boat launches, four picnic areas, and one marina at the lake, in
30 addition to two campgrounds (California Department of Parks and Recreation 2010c) and eighty
31 miles of trails adjacent to the lake (California Department of Parks and Recreation 2010b) in the
32 Folsom Lake State Recreation Area.

33 ***New Melones Lake***

34 New Melones Lake is owned and managed by Reclamation; it was constructed in the late 1970s and
35 provides 100 miles of shoreline and 12,500 surface acres of water. New Melones Reservoir is
36 operated primarily for purposes of water supply, flood control, power generation, fishery
37 enhancement, and water quality improvement in the lower San Joaquin River. The reservoir also
38 provides recreation benefits. Two developed recreation areas at the reservoir provide three boat
39 launches, five campgrounds, two group camps, six day-use areas, and one marina. Also located at the
40 reservoir are hiking and biking trails, as well as a visitor center and museum that provide
41 information on prehistoric and historic use of the Stanislaus River area (Bureau of Reclamation
42 2012).

San Luis Reservoir

The 12,700-acre San Luis Reservoir is the largest offstream reservoir in the United States (Bureau of Reclamation and California Department of Parks and Recreation 2005) and is part of the San Luis Joint-Use Complex. San Luis Reservoir is jointly managed by DWR and Reclamation and serves both the SWP and CVP. The reservoir provides flood protection for San Luis Canal, Delta-Mendota Canal, City of Los Banos and other downstream developments. The reservoir is fed by the California Aqueduct and the Delta Mendota Canal via O'Neill Forebay (California Department of Parks and Recreation 2011c). The reservoir and forebay are in the San Luis Reservoir State Recreation Area, managed by DPR. Strong winds at the 2,250-acre O'Neill Forebay provide excellent windsurfing opportunities. Winds in excess of 30 mph require boaters to stop use of the reservoir because of hazardous conditions. Recreation opportunities at the reservoir and forebay include camping, picnicking, hiking, fishing, swimming, and boating. Two recreation sites at both water bodies provide boat launches, day-use areas, and campgrounds (California Department of Parks and Recreation 2011c). Two adjacent wildlife areas provide hunting and hiking opportunities, and an off-highway vehicle (OHV) area near O'Neill Forebay provides motorized recreation opportunities.

The San Luis Reservoir State Recreation Area is open year round. Boat access is available by a boat ramp at the Basalt area at the southeastern portion of the reservoir and at Dinosaur Point at the northwestern portion of the reservoir. The boat ramp at Basalt becomes difficult to use because of low reservoir levels at elevation 340 feet; the boat ramp at Dinosaur Point is difficult to access at elevation 360 feet (San Joaquin River Group 1999:3-116). There are no designated swimming areas or beaches at San Luis Reservoir, but O'Neill Forebay has swimming, boating, fishing, and camping opportunities. At Romero Overlook there is a popular SWP Visitors Center, easily accessible off of SR 152.

A few miles to the southeast lies Los Banos Reservoir, also part of San Luis Reservoir State Recreation Area, which is managed by State Parks. Los Banos is known primarily for its fishing opportunities, although boating, swimming, and camping opportunities are also available. Los Banos Reservoir has a horse camp and hiking and equestrian trails (Bureau of Reclamation and California Department of Parks and Recreation 2005).

Waterways

Trinity River Downstream of Lewiston Dam

The Trinity River from Lewiston Dam downstream to the confluence with the Klamath River at Weitchpec is designated as a federal and California wild and scenic river that runs through private lands, BLM, and U.S. Forest Service (Shasta-Trinity and Six Rivers National Forests) lands, as well as the Hoopa Valley Indian Reservation (Wild and Scenic Rivers Council 2011). SR 299, which follows the river through the Trinity River Gorge west of Junction City, is a designated scenic byway and provides access to the river's recreation facilities (Trinity County 2007; Bureau of Land Management 2012; USDA Forest Service 2012b). The Trinity River is well known for its salmon and steelhead fishing and its whitewater boating opportunities, with the river waters ranging in difficulty from Class I to Class V (Trinity River Rafting 2011). Access points are provided along the river, as well as campgrounds and day-use areas (Bureau of Land Management 2012; USDA Forest Service 2012c).

Sacramento River Downstream of Keswick Dam

The Sacramento River corridor is a recreation resource for the northern California region and hosts a wide range of recreation uses, including walking/hiking, angling, camping, hunting, horseback riding, picnicking, sports activities, boating (motorized and nonmotorized), and wildlife watching. There are many federal, state, local, and commercial facilities along the river corridor that provide access to the river and riverbanks and support the recreational activities mentioned above. Facilities along the river include boat launches, trail accesses, fishing accesses, RV parks, wildlife areas, undeveloped open space areas, parks, marinas, and trails. Facilities are primarily located from Keswick Dam south to the Bidwell-Sacramento River State Park, near Chico (about 115 river miles downstream from Shasta Dam). From Chico to the northern limit of the statutory Delta at Sacramento (about 140 river miles downstream of Chico), recreational facilities are more widely spaced and fewer in number, although access to the river is available at several federal, state, and local facilities (SacramentoRiver.org 2012).

Feather River Downstream of Lake Oroville

Below Lake Oroville, the Feather River runs through the Oroville Wildlife Area and the communities of Gridley, Live Oak, Yuba City, and Marysville before joining the Sacramento River approximately 70 miles below Lake Oroville at Verona. Recreation activities along the lower Feather River include fishing, boating, hunting, camping, swimming, wildlife viewing, and picnicking. The several miles of river near Oroville and the Oroville Wildlife Area are renowned for trout and salmon fishing (Neville 2008). Recreation facilities along this stretch of the Feather River include public and private launch ramps, day-use facilities, camping facilities, and trails (City of Marysville 2012a; Yuba County 2009; Sutter County 2012). Riverfront Park in Marysville also offers a golf driving range, OHV course, bicycle motocross (BMX) track, soccer and softball fields, a nature area, and a pavilion (City of Marysville 2012b).

American River Downstream of Folsom Lake

Most of the first 6 miles of the American River below Folsom Lake is occupied by Lake Natoma, formed by Nimbus Dam, a downstream regulating reservoir (California Department of Parks and Recreation 2010a) for Folsom. Park lands surrounding Lake Natoma are included in the Folsom Lake State Recreation Area, managed by DPR (California Department of Parks and Recreation 2010b). Lake Natoma and the surrounding lands provide opportunities for waterskiing, sailing, windsurfing, rowing, canoeing, kayaking, swimming, fishing, and picnicking. Facilities at three sites on the lake include boat launches, picnic areas, a group camping area, a fishing platform, and a swimming area (California Department of Parks and Recreation 2010c; California Department of Parks and Recreation 2010d). Motorized boating is allowed (with a 5-mph speed limit), but Lake Natoma is best known for nonmotorized boat recreation. At the downstream end of Lake Natoma, the Sacramento State Aquatic Center provides the general public with boating and water safety classes and summer camp and youth programs. The center is a cooperative operation of the Associated Students Inc. of California State University, Sacramento, the University Union of Sacramento State, the California Department of Boating and Waterways (CDBW), and DPR. The center is a regional boating instruction safety center and rents canoes and kayaks, other types of nonmotorized watercraft, and cruiser bicycles (Sacramento State Aquatic Center 2012a; Sacramento State Aquatic Center 2012b).

The 23-mile American River Parkway encompasses the entire stretch of the American River from Nimbus Dam to the Sacramento River confluence (Sacramento County Regional Parks 2010b;

1 Sacramento County Regional Parks 2010c). The parkway is administered by the Sacramento County
 2 Department of Parks and Recreation. Approximately 8 million people visit this recreation area each
 3 year, participating in activities such as fishing, boating, rafting, picnicking, walking, biking,
 4 swimming, horseback riding, and wildlife viewing (Sacramento County Regional Parks 2008;
 5 Sacramento County Regional Parks 2010b). Parks and access points are located along the parkway
 6 (Sacramento County Regional Parks 2010c; Sacramento County Regional Parks 2010d). The
 7 Jedediah Smith Memorial Trail, a 32-mile paved trail that extends the length of the parkway and
 8 Lake Natoma, links many of the parkway's facilities and access points (Sacramento County Regional
 9 Parks 2010c).

10 Discovery Park is at the west end of the American River Parkway next to and under I-5. The park's
 11 302 acres at the confluence of Bannon Slough and the Sacramento and American Rivers in
 12 downtown Sacramento offer a boat launch with access to both rivers, a bike trail, a softball field, an
 13 archery range, fishing access, playground, picnic tables, reservable picnic areas with grills, and
 14 restrooms. Natural and altered riparian and open-water habitats provide opportunities for birding,
 15 wildlife observation, and photography. Discovery Park is accessible by car from I-5 and Garden
 16 Highway (American River Parkway Foundation 2009; Sacramento County Regional Parks 2010e).

17 ***Stanislaus River Downstream of New Melones Lake***

18 Immediately downstream of New Melones Lake is Tulloch Lake, which is surrounded primarily by
 19 private property other than two public RV campgrounds and two marinas. Approximately 2 miles
 20 downstream of Tulloch Lake is Goodwin Dam and the beginning of the 58.3-mile reach of the
 21 Stanislaus River from Goodwin Dam to the confluence with the San Joaquin River, which is
 22 commonly referred to as the Lower Stanislaus River. Although access to the 4-mile stretch of river
 23 below Goodwin Dam and Knights Ferry is limited, this segment is used by whitewater boaters
 24 (intermediate to expert level) and fisherman and flows through a scenic volcanic gorge. Public river
 25 access can be found just below Goodwin Dam, 2 miles downstream at Two Mile Bar, and at Knights
 26 Ferry (The Ecological Angler 2008; U.S. Army Corps of Engineers 2010), a historic gold mining-era
 27 town. Class I-II rafting (suitable for novice paddlers) is available below Knights Ferry, with floaters
 28 taking out at the Orange Blossom covered bridge, 7 miles downstream, or 6 miles farther
 29 downstream at Oakdale (American Whitewater 2012). Commercially guided rafting trips are offered
 30 on the runs downstream of Knights Ferry (River Journey 2012; Sunshine Rafting Adventures 2010).

31 In addition to providing the river access sites mentioned above, the U.S. Army Corps of Engineers
 32 (USACE) provides other small riverside recreation areas between Knights Ferry and Oakdale and a
 33 free visitor center at Knights Ferry. These parks provide campsites, picnic areas, and hiking trails.
 34 Little river access is available downstream of Oakdale, with the exception of small USACE access
 35 sites adjacent to the communities of Riverbank and Myers and a municipal park in the community of
 36 Ripon. A few miles upstream of the confluence with the San Joaquin River is Caswell Memorial State
 37 Park, a 258-acre park that offers activities such as camping, picnicking, swimming, fishing, tubing
 38 from the campground to the day-use area, bird watching, and hiking (California Department of Parks
 39 and Recreation 2010e).

40 ***San Joaquin River Downstream of Friant Dam***

41 Recreational activities in and along the San Joaquin River downstream of Friant Dam and at
 42 Millerton Lake are limited and not always on public lands. Activities include fishing, boating, nature
 43 interpretation and education, trail use, camping, hunting, picnicking, and wildlife viewing/nature
 44 observation. The San Joaquin River Parkway is a mosaic of parks, trails, and ecological reserves

1 located along the San Joaquin River between Friant Dam and SR 145 and managed by the San
2 Joaquin River Parkway and Conservation Trust (San Joaquin River Conservancy 2000; San Joaquin
3 River Conservancy 2010; San Joaquin River Parkway and Conservation Trust 2012). Use of the
4 parkway is heaviest in summer, and a user survey estimated that the parkway received more than
5 200,000 visits in 2000, mostly from trail users (Houser and North 2001).

6 Most of the recreation on the river between Friant Dam and the Merced River occurs in the parkway
7 because this reach provides public land and river access and developed facilities. Downstream of the
8 parkway, recreation is possible in the river and adjacent to the river in some areas; however, some
9 reaches have been dewatered at most times, and only limited recreation opportunities are available.
10 The San Joaquin River Restoration Program, which is a direct result of a settlement reached in
11 September 2006 to provide sufficient fish habitat in the San Joaquin River below Friant Dam, calls
12 for an intermittent release of water from Friant Dam that provides flows along the entire length of
13 the San Joaquin River. The first water release was in October 2009, with interim flow releases
14 scheduled through February 2013. One of the goals of the Program, through the release of water, is
15 to restore and maintain fish populations including naturally reproducing and self-sustaining
16 populations of Chinook salmon and other fish. The water releases also provide increased
17 downstream recreational opportunities. Future phases of the program call for permanent releases
18 (restoration flows) from Friant Dam. Full restoration flows are scheduled to start no later than
19 January 1, 2014.

20 The Mendota Pool, near the community of Mendota, contains water year-round and is accessible to
21 the public via a county park (City of Mendota 2010). Other use of the river or riverbed in these
22 reaches is assumed to be by adjacent private landowners and possibly other local residents, and
23 may include fishing, hunting, and OHV use. The reach of the river just upstream of the confluence
24 with the Merced River crosses units of the San Luis NWR that offer hunting and fishing
25 opportunities (U.S. Fish and Wildlife Service 2010).

26 Two Stanislaus County parks provide the only developed recreation access to this segment of the
27 San Joaquin River. The Las Palmas Fishing Access, a few miles east of Patterson, is a 3-acre park that
28 provides a concrete boat ramp and day-use facilities (Stanislaus County 2010). Laird Park, 2 miles
29 east of Grayson, is a 97-acre “community park” that provides river access and day-use facilities
30 (Stanislaus County n.d.). As of July 2011, Las Palmas and three other fishing accesses were closed,
31 restrooms and trash receptacles removed and maintenance services discontinued (Stanislaus
32 County Department of Parks and Recreation 2011).

33 The West Hilmar Wildlife Area, on the western bank of the river a few miles downstream of the
34 Merced River confluence, is a 340-acre State Wildlife Area. It has no facilities and is accessible only
35 by boat (California Department of Fish and Game 2010i). The San Joaquin River NWR is located
36 along the San Joaquin River between the Tuolumne and Stanislaus Rivers, two tributaries to the San
37 Joaquin River. The refuge boundaries encompass more than 7,000 acres of riparian woodlands,
38 wetlands, and grasslands. Although the refuge is primarily undeveloped, a wildlife-viewing platform
39 has been constructed at a favored location for viewing geese and other waterfowl. The 3.8-mile
40 Pelican Nature Trail with interpretive kiosks and picnic areas opened in 2011 (U.S. Fish and Wildlife
41 Service 2011b).

42 **Recreation Users Upstream of the Delta**

43 As previously described, the reservoirs upstream of the Delta are large, and most are the central
44 features of federally-designated or state-designated recreation areas that provide a variety of public

1 and commercial recreation facilities. Some of these reservoirs are among the largest lakes in the
 2 state as measured by surface area. The large areas available for water-based and water-related
 3 recreation, and the associated large-scale recreation facilities, allow these areas to host large
 4 numbers of visitors each year. Each of these seven upstream reservoirs and the surrounding
 5 recreation areas host from nearly 0.5 million to more than 2 million visitors each year. Table 15-8
 6 provides a summary of annual attendance at these locations.

7 Because of the length of the waterways downstream of the reservoirs and the variety of public and
 8 private ownership, access, and recreation development on those waterways, recreation use data are
 9 not available. However, these waterways are used for boating, fishing, and other water-based and
 10 water-related recreation opportunities and are among the most popular waterways in the state for
 11 the pursuit of these activities.

12 **Table 15-8. Annual Attendance at Reservoirs in the Upstream of the Delta Region**

Location	Approximate Annual Attendance (Visitors/Visitor-Days ^a)
Shasta and Trinity Units of Whiskeytown-Shasta-Trinity NRA	1.45 million visitor-days
Whiskeytown Unit of Whiskeytown-Shasta-Trinity NRA	750,000 visitors
Lake Oroville State Recreation Area	750,000 visitors
Folsom Lake State Recreation Area	2 million visitors
New Melones Lake	500,000 visitor
San Luis Reservoir State Recreation Area	475,000 visitors

Sources: USDA Forest Service 1996; National Park Service 2009; California Department of Parks and Recreation 2002; California Department of Parks and Recreation 2010c; Bureau of Reclamation 2012; Bureau of Reclamation and California Department of Parks and Recreation 2005; Springer, Personal communication 2013.

Notes: NRA = National Recreation Area

^a A visitor-day is equivalent to 12 hours of recreation activity. This activity may represent one visitor recreating for 12 hours or more than one visitor recreating for shorter periods, for a total of 12 hours.

14 **15.2 Regulatory Setting**

15 **15.2.1 Federal Plans, Policies, and Regulations**

16 **15.2.1.1 New Melones Lake Area Final Resource Management Plan**

17 The Bureau of Reclamation (Reclamation) released the New Melones Lake Area Final Resource
 18 Management Plan in early 2010, superseding the 1976 New Melones Lake Area Master Plan. Two of
 19 the purposes for the Resource Management Plan are (1) to provide for recreation management and
 20 development and ensure that recreation facility management and opportunities are compatible with
 21 other resources, and (2) to ensure that planning is based on public need and the ability of land and
 22 water resources to accommodate increased visitor use and enhanced facilities. The plan is aimed at
 23 balancing “management of recreation uses and resources with management of natural and cultural
 24 resources.” The alternative involves increasing watercraft use, moderately updating the amount of
 25 facility and access area, improving trails, and developing a long-term strategy for managing hunting

(Bureau of Reclamation 2010). The Resource Management Plan also identifies goals and implementation strategies, including the following recreation-related goals.

General Recreation

- **Goals:** Provide for diverse recreation within Reclamation's authorities to afford a safe and quality recreation experience consistent with natural and cultural resource management objectives. Achieve fair value for recreation. Ensure that concessions are planned, developed and managed to meet public needs, are compatible with the natural and cultural resources, and provide a variety of services which are consistent with authorized project purposes.

Aquatic Recreation

- **Goals:** Provide a diverse range of water-based recreation opportunities suited to user needs compatible with the existing character of the lake and surrounding lands. Protect cultural resources, natural resources, and water quality while providing safe and enjoyable recreational experiences.

Land-Based Recreation

- **Goals:** Provide a diverse range of land-based recreation opportunities suited to user needs compatible with the existing character of the project lands. Protect cultural and natural resources while providing safe and enjoyable recreational experiences. Provide specific recreation opportunities and adequate, flexible, and efficient support facilities under varying lake level conditions without compromising ecological resources. Provide a variety of nonmotorized recreational experiences using trails and pathways. Provide safe recreational hunting opportunities compatible with the Wildlife Management Plan, while respecting private property rights and management authority over wildlife resources.

Interpretive Services

- **Goals:** Enhance the public's understanding of the history, purpose, and operation of the project and its archaeological, historical, human-made, natural, and cultural features. Enhance recreation experiences through the Visitor's Center, interpretive services, and volunteer programs. Enhance the quality of recreation for all visitors, including those with physical, sensory, and cognitive impairments. Educate the public about Reclamation, water resources, water conservation, and water safety. Promote stewardship, achieve management objectives, optimize resources, provide enhanced services, and provide educational opportunities.

15.2.1.2 Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan

The Stone Lakes NWR Comprehensive Conservation Plan (U.S. Fish and Wildlife Service 2007a) provides management guidance for visitor use and natural resources (e.g., fish, wildlife, plants) within the refuge for the next 15 years. The approved refuge boundary encompasses more than 17,000 acres of land; USFWS manages approximately one-third of that land, including state- and county-owned land managed under cooperative agreements. Most of the remaining lands are privately owned and are not managed as part of the refuge, although some lands are publicly owned and managed for conservation purposes. The conservation plan identifies goals, objectives, and strategies only for the lands that are currently, or soon to be, managed by USFWS, regarding habitat restoration and enhancement and protection of cultural resources. One goal aims to provide visitors

1 with wildlife-dependent recreation, education, and interpretation opportunities that help them
 2 develop an understanding of the unique wildlife and habitat in the refuge. Objectives of this goal
 3 include recruiting volunteers, constructing visitor facilities, developing an environmental education
 4 program that includes two interpretation programs, providing boat-only fishing and day-use
 5 parking, and continuing to expand the outreach program. Proposed facilities to be developed include
 6 two photography blinds, restrooms, trails, parking areas, and wildlife-viewing platforms, as well as a
 7 boat-accessible haul-out site and boat launch. An objective of the cultural resource protection goal
 8 also includes developing a minimum of two interpretive panels and exhibits.

9 The plan includes the following recreation-related goal and objectives.

- 10 ● **Goal 3:** Provide visitors with recreation, interpretation, and education opportunities that foster
 11 an understanding of the refuge’s unique wildlife and plant communities in an urban setting.
- 12 ○ **Objective 3.E:** Within five years, the refuge will provide safe, boat-only fishing with day-use
 13 parking facilities to accommodate approximately 20 boats on South Stone Lake and
 14 approximately 10 boats on SP Cut from June through September.

15 **15.2.1.3 Management Guide for the Shasta and Trinity Units of the** 16 **Whiskeytown-Shasta-Trinity National Recreation Area**

17 The purpose of the 1996 Shasta-Trinity NRA management guide (USDA Forest Service 1996) is to
 18 integrate past decisions that remain pertinent for managing the Shasta and Trinity units of the NRA
 19 with standards, guidelines, and management prescriptions incorporated from the April 1995 Shasta-
 20 Trinity National Forest Land and Resource Management Plan (LRMP). (Management of the
 21 Whiskeytown unit of the NRA, administered by the NPS, is not addressed in the guide; see Section
 22 15.2.1.4.) The LRMP (USDA Forest Service 1995) is a program-level document that establishes
 23 integrated land management direction, including time frames for implementing, monitoring, and
 24 evaluating projects, activities, programs, and budgeting in the Shasta-Trinity National Forest for a
 25 period of 10–15 years. The NRA management guide provides an analysis of direction from the
 26 LRMP; a summary of existing conditions; a description of desired future conditions; and a strategy of
 27 management recommendations, opportunities, and mitigation measures that will be used to
 28 implement the LRMP and achieve the desired results. The topic of recreation is broken into a series
 29 of key subtopics in the management guide: boating and lake management, land-based recreation,
 30 special uses, recreation occupancy vessels (i.e., houseboats and similar vessels), and resort/marina
 31 standards and guidelines.

32 **15.2.1.4 General Management Plan for the Whiskeytown Unit of the** 33 **Whiskeytown-Shasta-Trinity National Recreation Area**

34 The General Management Plan for the Whiskeytown unit of the Whiskeytown-Shasta-Trinity NRA
 35 (National Park Service 1999) provides recreation-related goals and action programs that emphasize
 36 providing a range of water-related activities in a predominantly natural setting, improving
 37 backcountry experiences, improving visitor safety, and providing additional interpretation and
 38 education opportunities. The plan also outlines a park-wide zoning system. The following goals in
 39 the plan relate to recreation.

1 **Public Enjoyment and Visitor Experience**

- 2 • **Goal 1:** Visitors to Whiskeytown Lake enjoy a wide range of water-based and water-related
- 3 activities, including the opportunity to enjoy a predominantly natural setting.
- 4 • **Goal 2:** Visitors to the backcountry enjoy a variety of activities, including camping, driving for
- 5 pleasure, trail activities, and hunting using an integrated network of designated backcountry
- 6 roads and trails.

7 **15.2.1.5 Boat Navigation Jurisdiction, Rules, and Regulations**

8 **U.S. Coast Guard**

9 While boating law enforcement is often performed at the local level by local agencies such as county
 10 sheriff and municipal marine patrols, the Coast Guard and other federal regulators have
 11 enforcement authority in federally navigable waters. Title 14 of the United States Code (USC), Code
 12 of Federal Regulations (CFR) Title 33 and other portions of the CFR, give the U.S. Coast Guard
 13 authority for maritime law enforcement on the navigable waters of the United States, as well as
 14 responsibilities for search and rescue, marine environmental protection, and the maintenance of
 15 river aids to navigation, among other roles. Included within the Coast Guard’s authority are inland
 16 waters, which are those waters shoreward of the territorial sea baseline, as defined within Title 33,
 17 Part 2. Furthermore, Title 33, Part 162—Inland Waterways Navigation Regulations, Section 162.205
 18 addresses Suisun Bay, San Joaquin River, Sacramento River, and connecting waters within which the
 19 Coast Guard has authority and jurisdiction. Specific to the Delta, 33 CFR 162 provides regulations for
 20 the navigation by both commercial and noncommercial vessels on the San Joaquin River Deep Water
 21 Ship Channel (between Suisun Bay and Stockton) and the Sacramento River Deep Water Ship
 22 Channel (between Suisun Bay and West Sacramento).

23 **15.2.2 State Plans, Policies, and Regulations**

24 **15.2.2.1 Delta Protection Act and Delta Protection Commission Land and** 25 **Resource Management Plan**

26 The Delta Protection Act of 1992 (Act) (California Public Resources Code Section 21080.22,
 27 Division 19.5) established the DPC, a state entity to plan for and guide the conservation and
 28 enhancement of the Delta’s natural resources while sustaining agriculture and meeting increased
 29 recreational demand. The Act defines a Primary Zone, which comprises the principal jurisdiction of
 30 the DPC. The Secondary Zone is the area outside the Primary Zone but within the “Legal Delta;” the
 31 Secondary Zone is not in the planning area of the DPC. The DPC has appeal authority over local
 32 government actions in the Delta’s Primary Zone.

33 Chapter 1 of the Act (Findings and Declarations) includes the following sections.

- 34 • Section 29702 indicates that the basic goals of the state for the Delta include the protection,
 35 maintenance, and, where possible, the enhancement and restoration of the overall quality of the
 36 Delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational
 37 activities.
- 38 • Section 29705 indicates that the Delta’s wildlife and wildlife habitats are valuable, unique, and
 39 irreplaceable resources of critical statewide significance and should be preserved and protected
 40 for the enjoyment of current and future generations.

- 1 ● Section 29710 declares that agricultural, recreational, and other uses of the Delta can best be
2 protected by implementing projects that protect wildlife habitat before conflicts arise.
- 3 ● Section 29712 acknowledges that the Delta’s waterways and marinas offer recreational
4 opportunities of statewide and local significance, are a source of economic benefit to the region,
5 and that public safety requirements will heighten because of increased demand and use.

6 Chapter 5 of the Act (Resource Management Plan) requires DPC to prepare and adopt a
7 “comprehensive long-term resource management plan for land uses within the primary zone of the
8 Delta.” DPC completed the Land Use and Resource Management Plan for the Primary Zone of the
9 Delta in 1995. In February 2010, after 2 years of collaborative effort to revise the plan, DPC adopted
10 a new draft Land Use and Resource Management Plan that includes the following recreation and
11 access policies (Delta Protection Commission 2010:22–23).

- 12 ● **Policy P-1:** Ensure appropriate planning, development, and funding for expansion, ongoing
13 maintenance, and supervision of existing public recreation and access areas.
- 14 ● **Policy P-2:** Encourage expansion of existing privately-owned, water-oriented recreation and
15 access facilities that are consistent with local General Plans, zoning regulations, and standards.
- 16 ● **Policy P-3:** Assess the need for new regional public and private recreation and access facilities
17 to meet increasing public need, and ensure that any new facilities are prioritized, developed,
18 maintained, and supervised consistent with local, state, and federal laws and regulations. Ensure
19 that adequate public services are provided for all existing, new, and improved recreation and
20 access facilities.
- 21 ● **Policy P-4:** Encourage new regional recreational opportunities, such as Delta-wide trails, which
22 take into consideration environmental, agricultural, infrastructure, and law enforcement needs,
23 as well as private property boundaries. Also, encourage opportunities for water, hiking, and
24 biking trails.
- 25 ● **Policy P-5:** Encourage provision of publicly funded amenities such as picnic tables and boat-in
26 destinations that compliment and are in or adjacent to private facilities, particularly if the
27 private facility will agree to supervise and manage such amenities, thus lowering the long-term
28 cost to the public.
- 29 ● **Policy P-6:** Support multiple uses of Delta agricultural lands, such as seasonal hunting and
30 provisions for wildlife habitat.
- 31 ● **Policy P-7:** Support improved access for bank fishing along state highways, county roads, and
32 other appropriate areas where safe and adequate parking, law enforcement, waste management
33 and sanitation facilities, and emergency response can be provided and where proper rights-of-
34 access have been acquired.
- 35 ● **Policy P-10:** Promote and encourage Delta-wide communication, coordination, and
36 collaboration on boating and waterway-related programs including, but not limited to, marine
37 patrols, removal of debris and abandoned vessels, invasive species control, clean and safe
38 boating education and enforcement, maintenance of existing anchorage, mooring, and berthing
39 areas, and emergency response in the Delta.

40 The Act also established a provision in the Public Resources Code that calls for local governments
41 with lands in the Primary Zone to ensure that their general plans are consistent with the plan:
42 “Within 180 days from the date of the adoption of the resources management plan or any

1 amendments by the commission, all local governments shall submit to the commission proposed
 2 amendments that will cause their general plans to be consistent with the resources management
 3 plan with respect to land located within the primary zone” (Office of Planning and Research
 4 2003:200).

5 **15.2.2.2 Delta Protection Commission, Great California Delta Trail System**

6 The Great California Delta Trail concept was born out of Senate Bill 1556 (Torlakson), which was
 7 filed with the Secretary of State on September 30, 2006. The Bill requires the DPC to facilitate the
 8 planning and feasibility process for establishment of the Great California Delta Trail System (Trail).
 9 The Trail will be a continuous regional recreational corridor and will include such recreational
 10 facilities as a bikeway and hiking trails.

11 The DPC is responsible for preserving, protecting, maintaining, and enhancing the Delta region’s
 12 environmental resources and quality. Senate Bill 1556 requires DPC to establish a continuous
 13 recreational corridor linking the San Francisco Bay Trail system and the planned Sacramento River
 14 trails in Yolo and Sacramento Counties to the present and future trailways around the Delta,
 15 including the Delta’s shorelines in Contra Costa, San Joaquin, Solano, Sacramento, and Yolo Counties.
 16 Funding for the Great California Delta Trail System comes from local transportation planning
 17 agencies. Senate Bill 1556 authorizes the transportation planning agencies that allocate funds to
 18 cities and counties with jurisdiction or a sphere of influence within the Delta, to allocate those funds
 19 to the DPC for specified activities around the Delta.

20 The Trail project started with the creation of a “blueprint” for the trail planning process and
 21 product, focusing on Contra Costa and Solano Counties as the initial planning area. That “blueprint”
 22 (*The Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* [Blueprint
 23 Report]), was prepared and subsequently adopted on September 23, 2010. The Blueprint Report
 24 includes a specific vision, goals, outreach, feasibility, the planning process, and policies for the Trail
 25 system. The report does not include trail alignment selection, but is focused on developing the
 26 planning and feasibility process. This adopted report is intended to be utilized by other cities and
 27 counties when developing their portions of the Trail system.

28 **15.2.2.3 California Department of Parks and Recreation Plans**

29 **Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh**

30 The Sacramento-San Joaquin Delta Reform Act mandated that the Department of Parks and
 31 Recreation develop recommendations to expand state recreation areas in the region. To comply
 32 with the legislation, the Department of Parks and Recreation issued the Recreation Proposal for the
 33 Sacramento-San Joaquin Delta and Suisun Marsh in May 2011. While the Recreation Proposal is not
 34 a binding policy document and it concedes that funding is not currently available to implement the
 35 recommendations, the Recreation Proposal does represent the department’s vision for the region
 36 (California State Parks 2011). The document states, “The proposal recommends a network of
 37 recreation areas, including parks, resorts, boating facilities, historic communities, agritourism
 38 attractions, and other visitor-oriented businesses. These areas would be connected by scenic driving
 39 routes, boating trails, or bicycling and hiking trails... Proposal recommendations aim to provide
 40 visitors and residents authentic outdoor experiences rooted in the unique and enduring character of
 41 the Delta and Suisun Marsh.”

1 The Recreation Proposal recommends improvement and, in some cases, expansion of four
 2 recreation areas in the Delta (Delta Meadows and Locke Boarding House, Stone Lakes, and Brannan
 3 Island and Franks Tract state recreation areas) and six state parks near the Delta and Suisun Marsh
 4 (Old Sacramento State Historic Park and California Indian Heritage Center, Caswell Memorial State
 5 Park, Bethany Reservoir State Recreation Area, the State Historic Park at John Marsh/Cowell Ranch,
 6 Benicia Capitol State Historic Park, and Benicia State Recreation Area). The Recreation Proposal
 7 further recommends creation of four new state parks in the region at Barker Slough, Elkhorn Basin,
 8 Wright-Elmwood Tract and in the south Delta, possibly near Old River.

9 **Central Valley Vision**

10 The Central Valley Vision project began in 2003, with the goals of understanding the recreation
 11 needs of Central Valley residents over the next 35 years and making recommendations for actions
 12 that the DPR might address through expansion of state park facilities in the region. Following the
 13 November 2006 release of the Central Valley Vision report, DPR released its *Central Valley Vision*
 14 *Draft Implementation Plan* in 2008 (California Department of Parks and Recreation 2008b). The
 15 draft 20-year plan provides a “catalog of potential future projects” that includes expanding existing
 16 parks and adding new parks in the Central Valley. The plan outlines these potential projects in the
 17 Delta: acquiring more land; developing facilities and improving access at Delta Meadows; developing
 18 interpretation and education opportunities at the Locke Boarding House; expanding facilities at
 19 Brannan Island State Recreation Area; and providing recreation at Twitchell, Sherman, and Lower
 20 Sherman Islands. The implementation plan also recommends creation of the California Delta
 21 Heritage Corridor, which would link historic Delta towns, recreation sites, nature areas, and farm
 22 stands (California Department of Parks and Recreation 2008b).

23 **Folsom Lake State Recreation Area General Plan and Amendment**

24 The first *Folsom Lake State Recreation Area General Plan* was approved in 1979. The plan was
 25 amended in 1996 to include additional facility recommendations for the Negro Bar (Lake Natoma),
 26 Willow Creek (Lake Natoma), and Beals Point (Folsom Lake) areas as part of the American River
 27 Bridge Crossing Project at Lake Natoma (California Department of Parks and Recreation 1996). DPR
 28 is updating the general plan for the Folsom Lake State Recreation Area (California Department of
 29 Parks and Recreation 2010d).

30 The original 1979 general plan identifies the objectives for both Lake Natoma and Folsom Lake
 31 (included as appendices to California Department of Parks and Recreation 1996). The following
 32 recreation-related objectives were identified for Lake Natoma.

- 33 ● **Objective 3:** To upgrade the quality of existing recreation use areas and to solve the physical
 34 problems in these areas.
- 35 ● **Objective 4:** To minimize environmental damage caused by recreation use and development.
- 36 ● **Objective 7:** To tie bicycle, riding, and hiking trails from Sacramento to Folsom Lake and
 37 beyond.

38 The following recreation-related objectives were identified for Folsom Lake.

- 39 ● **Objective 1:** To emphasize recreation use of Folsom Lake.
- 40 ● **Objective 2:** To continue to provide existing opportunities for diverse recreational uses of low
 41 to high intensity.

- 1 ● **Objective 4:** To upgrade the quality of existing recreation use areas, and to solve physical
2 problems in these areas.
- 3 ● **Objective 5:** To establish a boat carrying capacity for the lake (to maintain the high quality
4 boating experience on Folsom lake).
- 5 ● **Objective 6:** To increase opportunities for public access to the lake shore for informal use
6 (fishing, swimming, hiking, etc.).
- 7 ● **Objective 7:** To encourage boating opportunities for non-boat users.
- 8 ● **Objective 8:** To provide an opportunity for water-oriented recreation that is not feasible at
9 Auburn Reservoir.
- 10 ● **Objective 10:** To increase overnight camping and accommodate increasing demand.
- 11 ● **Objective 11:** To link Folsom Lake with Sacramento via the American River Parkway bicycle,
12 riding, and hiking trail system.
- 13 ● **Objective 15:** To interpret to the public the significant natural and cultural resources of the
14 landscape.
- 15 ● **Objective 17:** To monitor recreation use and to periodically reassess the ability of the resources
16 to absorb the use they are receiving; to adjust recreation use as necessary to adequately protect
17 resource values.

18 **General Plan for Brannan Island and Franks Tract State Recreation Areas**

19 **Brannan Island State Recreation Area**

20 The approved purpose of Brannan Island State Recreation Area is “to make permanently available to
21 the people the opportunity to use and enjoy a portion of the Delta region of California and its
22 extensive inland waterways” (California Department of Parks and Recreation 1988a). In addition,
23 “the function of the Department of Parks and Recreation at Brannan Island State Recreation Area is
24 to provide facilities and opportunities for the enjoyment of a variety of water-oriented and other
25 recreational activities, consistent with the declared purpose of the unit” (California Department of
26 Parks and Recreation 1988a).

27 *The General Plan for Brannan Island and Franks Tract State Recreation Areas* (California Department
28 of Parks and Recreation 1988a) describes the resource management policies, allowable use levels,
29 land use and facility recommendations, and interpretive recommendations for the two State
30 Recreation Areas. The policies for Brannan Island State Recreation Area focus on maintaining and
31 enhancing the natural resources in the State Recreation Area, some of which relate to recreation,
32 including reducing human-caused erosion and enhancing viewsheds in the State Recreation Area.
33 Allowable use levels in the park vary from low to high, with higher use areas throughout most of the
34 central and southern (along Threemile Slough) portions of the park and low to moderate use areas
35 on the eastern, western (along Threemile Slough near the SR 160 bridge), and northern portions of
36 the park. The general plan also recommends proposed uses, facilities, and interpretive programs;
37 many have been implemented since 1988.

38 The general plan includes the following land use and development goals for Brannan Island State
39 Recreation Area.

- 1 ● Provide recreational opportunities for varying use intensity levels in the unit, but with an
2 emphasis on overall high-intensity use.
- 3 ● Improve existing facilities, and add new ones to provide more recreational opportunities,
4 especially for swimming, boating, boardsailing, camping, and trail activities.
- 5 ● Improve access to and use of the surrounding water resources, particularly for swimmers,
6 boardsailors, picnickers, campers, boaters, and fishermen.
- 7 ● Improve visitors' enjoyment of the unit by providing better wind protection, more shade in
8 effective locations, a more attractive environmental setting, and more adequate facilities.
- 9 ● Provide additional interpretive facilities to explain the cultural and natural history of the Delta
10 and its relevance to the State Water Project.

11 State budget cuts in 2011 curtailed services and facilities available at Brannan Island State
12 Recreation Area until further notice, expected in July 2012. Details of the partial closure are
13 discussed in Section 15.1.1.1, *Recreational Facilities in the Delta, Sacramento County, Public*
14 *Facilities/Areas*).

15 **Franks Tract State Recreation Area**

16 The approved purpose of Franks Tract State Recreation Area is “to perpetuate as a recreation
17 resource the flooded island in the Sacramento-San Joaquin Delta known as ‘Franks Tract’ and to
18 provide permanently the opportunity for water-related recreational activities...” In addition, “the
19 function of the Department of Parks and Recreation at Franks Tract State Recreation Area is to
20 provide facilities and services for public enjoyment of the features and recreational opportunities
21 afforded by this unit” (California Department of Parks and Recreation 1988a).

22 Franks Tract State Recreation Area encompasses the inundated islands of Franks Tract and Little
23 Franks Tract, and the policies focus on maintaining water quality, protecting soils, and protecting
24 and enhancing habitat and species. Several policies mention considerations for placing new
25 structures or facilities. Allowable use levels are “low” at Little Franks Tract and “moderate” on
26 Franks Tract, except where wetland protection is of greater concern than providing recreation. The
27 general plan also recommends two land use and development goals: creating additional land base
28 for recreation activities and providing minimum needed recreation facilities. The plan outlines the
29 concept of increasing the land base by creating islands in Franks Tract and Little Franks Tract.
30 Facilities planned for the islands at Franks Tract include beaches, picnic areas, floating docks,
31 interpretive signage, and an observation platform. The plan outlines interpretive signage along a
32 water trail for Little Franks Tract. Unlike for Brannan Island State Recreation Area, the facility
33 development recommendations for Franks Tract State Recreation Area have not been implemented.

34 The general plan includes the following land use and development goals for Franks Tract State
35 Recreation Area.

- 36 ● Provide low-intensity recreational opportunities by creating additional land base (especially
37 beaches) for recreation activities.
- 38 ● Provide only the minimum of recreation facilities to accommodate the needs of boat-in visitors.

1 **Lake Oroville State Recreation Area Resource Management Plan and General** 2 **Development Plan and Amendment**

3 In 1973, the *Lake Oroville State Recreation Area Resource Management Plan and General*
4 *Development Plan* were approved. The plans outlined the allowable use intensities and planned
5 development for each area in the State Recreation Area (California Department of Parks and
6 Recreation 1973). In 1988, an amendment to the plan was approved to address three issues in the
7 Lime Saddle area: acquisition of land, disposal of a parcel, and expansion of the existing Lime Saddle
8 Marina (California Department of Parks and Recreation 1988b). DPR completed a new draft general
9 plan in 2005, concurrent with DWR's Lake Oroville facilities Federal Energy Regulatory Commission
10 relicensing process, but this proposed new general plan is awaiting CEQA review and thereafter will
11 require formal adoption by the California State Parks Commission.

12 **San Luis Reservoir State Recreation Area General Development Plan and** 13 **Amendment**

14 *The General Development Plan for the San Luis Reservoir State Recreation Area* was approved in
15 1971, although the plan was not developed to the same level of detail as later DPR general plans. In
16 1986, the general development plan was amended to revise the land use designation for about 65
17 acres of land on the northern side of O'Neill Forebay from undesignated to a day and overnight use
18 designation, thus allowing development of overnight facilities in the Meadows area and boat-in, day-
19 use, and camping facilities in the Grant Line area (California Department of Parks and Recreation
20 1986). DPR is currently updating the general plan for the San Luis Reservoir State Recreation Area
21 (California Department of Parks and Recreation 2010f).

22 **15.2.2.4 California Department of Fish and Wildlife Plans**

23 CDFW owns and manages seven areas in the Delta, primarily for habitat and species protection and
24 enhancement. Only two of the seven areas owned by CDFW have management plans: Yolo Bypass
25 Wildlife Area and Lower Sherman Island Wildlife Area. Goals and objectives related to recreation
26 and public use in these two plans are described below. The other areas are managed under the
27 current regulations found in the California Fish and Game Code and Title 14 of the California Code of
28 Regulations (CCR). Regulations for wildlife areas and ecological reserves, as well as hunting and
29 fishing regulations, can be found in Title 14.

30 **Yolo Bypass Wildlife Area Land Management Plan**

31 *The Yolo Bypass Wildlife Area Land Management Plan* (California Department of Fish and Game
32 2008b), prepared for the 16,770-acre state wildlife area, provides guidance on managing habitats,
33 species, and programs, and compatible, appropriate public uses. Two elements of the plan relate to
34 recreational use: (1) the Authorized Public Use Element, and (2) the Unauthorized Public Use
35 Element. Goals of the Authorized Public Use Element include providing new and increased
36 opportunities for appropriate wildlife-dependent activities, supporting and expanding
37 environmental education and interpretation opportunities, coordinating public access and use to
38 accommodate a variety of users, fostering partnerships, expanding the volunteer program,
39 minimizing user conflicts, supporting use of the wildlife area by Native Americans, and facilitating
40 safe use of the wildlife area. Tasks identified for these goals are numerous and include such items as
41 expanding automobile tour routes, adding signage, adding wildlife-viewing facilities, expanding
42 hunting opportunities, improving the entrance, evaluating the feasibility of additional trails, and

1 considering adding boating and fishing opportunities without incurring any liability. The
 2 Unauthorized Public Use Element focuses on preventing unauthorized uses, such as camping or
 3 dumping, through such tasks as patrolling the areas and installing signage.

4 **Lower Sherman Island Wildlife Area Land Management Plan**

5 The *Land Management Plan for the Lower Sherman Island Wildlife Area Management* provides
 6 guidance for habitats, species, programs, and appropriate public uses (California Department of Fish
 7 and Game 2007a). The wildlife area was originally acquired to provide a publicly accessible hunting
 8 and fishing area, which is reflected in the goals of the Authorized Public Use Element. The goals of
 9 this element focus on supporting compatible public uses and environmental education, providing
 10 long-term hunting and fishing opportunities, providing for a variety of users and minimizing user
 11 conflicts, evaluating requests by Native Americans for use of the wildlife area, and encouraging safe
 12 use of the wildlife area. Tasks related to these goals include providing signage at access points,
 13 periodically reviewing programs and regulations, identifying and resolving conflicts, monitoring and
 14 enforcing boat safety regulations, and installing warning signs and buoys. The Unauthorized Public
 15 Use Element focuses on goals to discourage trash dumping and prevent unauthorized uses, such as
 16 camping. Tasks associated with these goals include monitoring, installing signage, and patrolling the
 17 area.

18 **15.2.2.5 California Department of Boating and Waterways Regulations** 19 **and Programs**

20 One of the primary missions of CDBW is to promote a safer and more enjoyable boating
 21 environment. Although boating law enforcement in California is performed at the local level by local
 22 agencies, such as county sheriff and municipal marine patrol units, CDBW, through its Boating Law
 23 Enforcement Unit, acts to meet the goals of providing for adequate and consistent law enforcement
 24 through local agencies throughout the State. California boating laws are contained in instruments of
 25 state law, including the California Harbors and Navigation Code, Vehicle Code, Penal Code, and
 26 California Code of Regulations, among others. California boating laws and regulations apply
 27 uniformly on all waters of the state. However, California law does not replace the U.S. Coast Guard
 28 and other federal regulations in force on federally navigable waters, but it is in general conformity
 29 with these (California Department of Boating and Waterways 2009:i).

30 CDBW conducts a program focused on providing funding for local boating law enforcement agencies
 31 and training of law enforcement personnel (California Department of Boating and Waterways 2007).
 32 Another CDBW program aimed at boating safety is the Aquatic Center Grant Program, through
 33 which the department makes grants available for nonprofit organizations, colleges and universities,
 34 and local agencies for boating safety education.

35 CDBW supports the purpose of providing boaters with adequate facilities on the water by providing
 36 boat launch facility grants and small craft harbor development loans to public entities. Private
 37 marina owners can also apply for construction loans for improvements, such as berthing, restrooms,
 38 vessel pump-out stations, boat launching and parking facilities, and dry boat storage. The Aquatic
 39 Weed Control Program is authorized to control water hyacinth (*Eichhornia crassipes*), Brazilian
 40 waterweed (*Egeria densa*), and South American spongeplant (*Limnobiium laevigatum*) in the Delta,
 41 its tributaries, and Suisun Marsh. The Program is focused on controlling water hyacinth and
 42 Brazilian waterweed, which are highly invasive aquatic plant species that are widespread in the
 43 Delta and have substantial impacts on recreational activities in the Delta, its tributaries, and Suisun

1 Marsh. Finally, the Abandoned Watercraft Abatement Fund is administered by CDBW with the
 2 purpose of providing funds to public agencies to remove and dispose of abandoned or wrecked
 3 vessels that pose a significant hazard to navigation.

4 **15.2.2.6 California State Lands Commission Regulations**

5 The California State Lands Commission has jurisdiction over nearly 4 million acres of lands that
 6 underlie navigable and tidal waterways. Known as “Sovereign Lands,” these include riverbeds,
 7 streams, sloughs, nonnavigable lakes, tidal navigable bays and lagoons, tide and submerged lands
 8 adjacent to the coast, and offshore islands from the mean high tide line to 3 nautical miles offshore.
 9 The California State Lands Commission offers leases and permits for marinas, and developers of
 10 marinas along the state’s navigable rivers, natural lakes, and bays are required by law to lease state
 11 land at marina sites. Private landowners who wish to install a recreational pier adjacent to their
 12 waterfront residence must likewise obtain a lease from the commission (Delta Protection
 13 Commission 2006).

14 **15.2.3 Regional and Local Plans, Policies, and Regulations**

15 **15.2.3.1 City and County General Plans**

16 **Alameda County**

17 **East County Area Plan**

18 The *East County Area Plan* functions as the general plan document for eastern Alameda County,
 19 which extends from the Pleasanton/Dublin ridgeline east to San Joaquin County and from Contra
 20 Costa County south to Santa Clara County (Alameda County 2000). Policies seek to promote
 21 recreation on open space, agricultural, and watershed lands in the East County area, including the
 22 expansion of the existing regional park system and the provision of new trail corridors. The plan
 23 contains the following policies on park and recreation facilities.

- 24 • **Policy 225:** The County shall integrate East County trail plans...with the California Recreational
 25 Trail System.

26 **Contra Costa County**

27 **Contra Costa County General Plan**

28 The *Contra Costa County General Plan 2005–2020* (Contra Costa County 2005) addresses
 29 recreational resources in the Open Space Element. Overall goals and policies seek to preserve and
 30 protect the county’s recreational resource lands. Policies specifically related to parks and open
 31 space areas, local parks, and trails provide protection and enhancement of the recreational value of
 32 the Delta, allow only recreational development that complements the natural features of the area,
 33 and provide distribution and management of recreational activity according to an area’s carrying
 34 capacity while recognizing the regional importance of each area’s recreation resources.

35 The county has identified Parks and Open Space Areas, some of which are in the statutory Delta.
 36 Browns Island Regional Shoreline, Antioch Dunes NWR, Big Break Regional Shoreline, and Franks
 37 Tract State Recreation Area are identified as existing parks. The county identifies CALFED Bay-Delta
 38 Program wetlands and the Jersey Island Management Area as existing open space. A number of

1 existing neighborhood and community parks are also located in the Delta, with one of each type
 2 proposed for Bethel Island. The general plan also illustrates existing and proposed biking, hiking,
 3 and equestrian trails on Bethel Island, Hotchkiss Tract, along the Delta shoreline, and in the
 4 northeastern portion of the county.

5 The general plan includes the following policies related to recreation.

- 6 ● **Policy 3-12:** Preservation and buffering of agricultural land should be encouraged as it is
 7 critical to maintaining a healthy and competitive agricultural economy and to assuring balanced
 8 land use. Preservation and conservation of open space, wetlands, parks, hillsides, and ridgelines
 9 should be encouraged as it is crucial to preserve the continued availability of unique habitats for
 10 wildlife and plants, protect unique scenery, and provide a wide range of recreational
 11 opportunities for county residents.
- 12 ● **Policy 3-46:** Water-oriented recreation uses shall be permitted in East County provided that
 13 such development is compatible with the Delta's unique ecology.
- 14 ● **Policy 5-39:** Multiple recreation use, including trail, observation points, and picnicking spots,
 15 where appropriate, shall be encouraged along scenic routes.
- 16 ● **Policy 8-96:** Land use activities in the immediate vicinity of harbors and adjacent facilities shall
 17 be compatible with the continued optimum commercial and recreational operations of the
 18 harbor.
- 19 ● **Policy 9-43:** Regional-scale public access to scenic areas on the waterfront shall be protected
 20 and developed, and water-related recreation, such as fishing, boating, and picnicking, shall be
 21 provided.
- 22 ● **Policy 9-44:** As a unique resource of State-wide importance, the Delta shall be developed for
 23 recreation use in accordance with the state environmental goals and policies. The recreational
 24 value of the Delta shall be protected and enhanced.

25 The general plan contains additional policies for specific areas, including the following for the Bay
 26 Point and Discovery Bay areas, respectively.

- 27 (a) The utility of the Delta De Anza Recreational Trail should be enhanced (Specific Plan Policy C-
 28 10).
- 29 (b) The development concept of the Discovery Bay West project shall provide improved functional
 30 integration between the water element, other parks and recreation facilities, and the residential
 31 project. Public access to areas east should be explored.

32 **City of Antioch General Plan**

33 The *City of Antioch General Plan* (City of Antioch 2003) aims to provide a range of parks, specialized
 34 recreational facilities, and natural open spaces. Objectives and policies encourage the preservation
 35 of significant natural features and specifically seek to secure and develop a shoreline park along the
 36 San Joaquin River, with recreational trails and viewing areas for public enjoyment of the waterfront.
 37 The Rivertown/Urban Waterfront Focus Area targets the downtown and waterfront areas for
 38 revitalization, with an emphasis on creating new land uses along the riverfront, including
 39 developing water-oriented recreational facilities. Plans may include expansion of the marina,
 40 improvement of the boat launch, constructing a shoreline trail, bocce ball courts, and a continuous

1 park to provide public access to the entire riverfront. The general plan contains the following
2 policies on recreation.

3 • **Policy 8.9.2—Parks and Recreation Policies**

- 4 d. Secure and develop a shoreline park along the San Joaquin River consisting of recreational
5 trails, viewing areas, and natural habitat protection so as to ensure availability of the
6 waterfront in the City for public enjoyment.

- 7 • **Policy 10.3.1—Open Space Objective:** Maintain, preserve and acquire open space and its
8 associated natural resources by providing parks for active and passive recreation, trails, and by
9 preserving natural, scenic, and other open space resources.

10 • **Policy 10.3.2—Open Space Policies**

- 11 c. Maintain the shoreline of the San Joaquin River as an integrated system of natural
12 (wetlands) and recreational (trails and viewpoints) open space as set forth in the Land Use
13 Element and Public Services and Facilities Element.

14 **City of Brentwood General Plan**

15 The *City of Brentwood General Plan* (City of Brentwood 2011) seeks to provide park and recreational
16 facilities that support vibrant neighborhoods, nonmotorized circulation, and balanced development.
17 Policies specifically encourage the development of regional recreational facilities in the Delta and
18 the growth of Delta water activities that may be served by Brentwood businesses. The plan directs
19 the city to prepare and adopt a parks, trails, and recreation master plan.

20 The general plan includes the following policies and associated action programs.

21 ***Economic Development Element Policies and Action Program***

- 22 • **Policy 1.2—Tourism/Recreation:** Encourage the growth of recreation and tourism activities
23 within the East County area.
- 24 • **Policy 1.2.1—Recreational Activities:** Encourage and support Delta water activities that may
25 be served by Brentwood businesses.
- 26 • **Policy 1.2.3—Recreational Activities:** Support the East Bay Park Regional Park and Trail
27 System development and use.

28 ***Community Facilities Element Action Program***

- 29 • **Policy 1.7.8—Community Facilities:** The City of Brentwood shall pursue regional recreational
30 facilities specifically in the areas of the Delta and Los Vaqueros Reservoir, and shall participate
31 in and support regional planning for large-scale recreational uses.

32 **City of Oakley General Plan**

33 The *City of Oakley 2020 General Plan* (City of Oakley 2002) identifies goals and policies to create a
34 strong connection to the Delta, including the development of recreational facilities and public access.
35 Delta Recreation is a specific land-use designation for open space and recreation lands and
36 encompasses approximately 5 acres in the lowlands of the San Joaquin Delta along the city's
37 northern edge. Because of their proximity to the Delta, these lands have substantial recreational
38 value and offer opportunities for public access to the Oakley waterfront, including parklands and
39 trails. Agriculture and wildlife habitat are also considered appropriate uses, and the City of Oakley

1 may also allow marinas, shooting ranges, duck and other hunting clubs, campgrounds, golf courses,
2 and other outdoor recreation complexes in this designation (City of Oakley 2002).

3 The general plan includes the following policies related to recreation.

- 4 ● **Policy 1.1.6:** Ensure a strong physical connection to the Delta including convenient public
5 access and recreational opportunities.
- 6 ● **Policy 7.4.3:** Manage shoreline and regional parks along Oakley's waterfront such as the Big
7 Break and Dutch Slough shoreline in a manner that provides for appropriate public access and
8 enhances the natural environment.
- 9 ● **Policy 7.4.5:** Support and encourage boat access and marinas. Consider additional marina
10 facilities if proposed and appropriate.
- 11 ● **Policy 7.4.11:** Protect the visual accessibility of waterways by avoiding future development that
12 creates visual barriers adjacent to or along the water's edge.
- 13 ● **Policy 7.4.12:** Promote the development or preservation of a private or public marina with boat
14 launching and berthing facilities, a fuel dock and waste pump-out station, restrooms and
15 showers, laundry facilities, a bait/tackle/food store, day use, overnight camping, and RV parking
16 areas, a fishing pier, and a restaurant.

17 **City of Pittsburg General Plan**

18 The *City of Pittsburg General Plan* (City of Pittsburg 2004) notes that although nearly 3 miles of
19 shoreline lie within Pittsburg city limits, public access to the Suisun Bay waterfront is lacking. Two
20 small parks and several small-craft marinas exist adjacent to the downtown area. The plan identifies
21 goals and policies to maximize public access and recreational facilities along the waterfront,
22 including developing pocket parks, a waterfront trail/bikeway, and possible facilities on Browns
23 Island (a unit of the EBRPD). The plan references the City of Pittsburg's Parks, Recreation, and Open
24 Space Master Plan as a document to bridge the gap between general plan policies and the actual
25 detailed planning and development of park and recreational facilities (City of Pittsburg 2004).

26 The general plan includes the following goals and policies that address recreation.

- 27 ○ **Policy 8-P-17:** Work with East Bay Regional Parks District to explore the possibility of
28 developing passive recreation uses and educational programs on Browns Island, such as
29 boating excursions to view waterfowl nesting areas.
- 30 ○ **Policy 8-P-19:** Cooperate with East Bay Municipal Utility District to ensure continued public
31 access to the Delta De Anza Trail along the Mokelumne Aqueduct right-of way.
- 32 ● **Goal 8-G-5:** Maximize public access to and recreational facilities along the City's waterfront
33 areas.
 - 34 ○ **Policy 8-P-26:** Explore all potential improvements to fully integrate the City's shoreline into
35 the urban fabric, including:
 - 36 ● Waterfront Parks. Pursue and develop small pockets of open space that provide physical
37 and visual access to the waterfront.
 - 38 ● Waterfront Trail/Bikeway. A linear park along the shoreline, featuring a path for both
39 walking and biking, would encourage more vibrant activity along the waterfront.

1 Sacramento County

2 Sacramento County General Plan

3 The County of Sacramento adopted its *General Plan of 2005–2030* in November 2011. An
4 amendment being processed to the General Plan would establish a new element in the General Plan,
5 the Delta Protection Element, to incorporate the "Land Use and Resources Management Plan for the
6 Primary Zone of the Delta" (DPC Plan) (Delta Protection Commission 1995). Delta jurisdictions,
7 including Sacramento County, are required to make their General Plans consistent with the DPC
8 Plan. The DPC is charged with instituting policies and programs to preserve and restore the wetland
9 and habitat across the 500,000 acre Sacramento-San Joaquin Delta. Previously, Sacramento County
10 incorporated the DPC Plan by reference in the Open Space Element.

11 The goal of the Recreation and Access section of the Draft Delta Protection Element is to promote
12 continued recreation use of the land and waters of the Delta; to promote facilities that support the
13 construction, maintenance and supervision of recreational uses; to protect landowners from
14 unauthorized recreational uses on private lands; and to maximize dwindling public funds for
15 recreation by promoting public-private partnerships and multiple use of Delta lands. The policies
16 enumerated in the Recreation and Access section of the Draft Delta Protection Element reiterate
17 verbatim the policies contained in the 1995 DPC Plan (listed above in Section 15.2.2.1). The section
18 of the Draft Delta Protection Element that addresses those topics contains 13 policies that primarily
19 provide local governments with guidance for developing marine patrols and boater education and
20 coordination of those functions with the Coast Guard, CDFW, and other agencies (Sacramento
21 County 2013b).

22 The City of Sacramento formally adopted its new 2030 general plan on March 3, 2009 (City of
23 Sacramento 2012). The *Sacramento 2030 General Plan* identifies general policies and goals to
24 provide a system of parks, water corridor parkways, and trails throughout the city. The eastern bank
25 of the Sacramento River falls under the Open Space/Parks/Recreation designation, and the City of
26 Sacramento seeks to continue to conserve, enhance, and provide public access to designated open
27 space areas along the river. Allowed uses in Open Space include natural parks; woodlands; habitat;
28 agriculture; floodplains; areas with permanent open space easements; buffers between urban areas;
29 and compatible public, quasi-public, and selected special uses. Allowed uses include community and
30 regional parks, greenways, trails, golf courses, and commercial recreational facilities with an
31 outdoor emphasis. Implementation measures direct the city to update its parks and recreation
32 master plan every 5 years to coincide with general plan updates.

33 The general plan includes the following goal and policies.

- 34 ● **Goal LU 2.2—City of Rivers:** Preserve and enhance Sacramento's riverfronts as signature
35 features and destinations within the City and maximize riverfront access from adjoining
36 neighborhoods to facilitate public enjoyment of this unique open space resource.
- 37 ○ **Policy LU 2.2.1—World-Class Rivers:** The City shall encourage development throughout
38 the City to feature (e.g., access, building orientation, design) the Sacramento and American
39 Rivers and shall develop a world-class system of riverfront parks and open spaces that
40 provide a destination for visitors and respite from the urban setting for residents.

1 **Open Space, Parks, and Recreation Policies**

- 2 • **Policy LU 9.1.1—Open Space Preservation:** The City shall limit, to the extent feasible, the
3 wasteful and inefficient conversion of open space to urban uses and place a high priority on
4 acquiring and preserving open space lands for recreation, habitat protection and enhancement,
5 flood hazard management, public safety, water and agricultural resources protection, and
6 overall community benefit.
- 7 • **Policy LU 9.1.3—Connected Open Space System:** The City shall ensure that new development
8 does not create barriers to the connections among the various parts of the City’s parks and open
9 space systems.

10 The *Pocket Community Plan* focuses on an 8-square-mile area bounded on the north by 35th Avenue
11 and the Sacramento River, on the south and west by the Sacramento River, and on the east by
12 Freeport Boulevard. Policies unique to the plan area seek to improve and expand parkway-
13 greenbelt-open spaces, including along the Sacramento River (City of Sacramento 2009). The
14 following Recreation, Education, and Culture policy is included in the Pocket Community Plan.

- 15 • **Policy P.ERC 1.1—Parkways/Greenways:** The City shall improve and maintain public
16 parkway-greenbelt-open spaces which are visual assets to the neighborhoods.

17 **American River Parkway Plan**

18 The *American River Parkway Plan 2008* (Sacramento County 2008) is a policy and action document
19 that provides guidance on land use decisions affecting the parkway. The plan also acts as the
20 management plan for the Federal and State Wild and Scenic Rivers Acts (the lower American River is
21 classified as a “Recreation” river in the State and Federal Wild and Scenic River Systems). According
22 to the plan, “[t]he American River Parkway is a unique regional facility which shall be managed to
23 balance the goals of: a) preserving naturalistic open space and protecting environmental quality
24 within the urban environment, and b) contributing to the provision of recreational opportunities in
25 the Sacramento area.” The following goals are included in the plan.

- 26 • To provide, protect and enhance for public use a continuous open space greenbelt along the
27 American River extending from the Sacramento River to Folsom Dam.
- 28 • To provide appropriate access and facilities so that present and future generations can enjoy the
29 amenities and resources of the Parkway that enhance the enjoyment of leisure activities.
- 30 • To preserve, protect, interpret and improve the natural, archaeological, historical and
31 recreational resources of the Parkway, including an adequate flow of high quality water,
32 anadromous and resident fishes, migratory and resident wildlife, and diverse natural vegetation.
- 33 • To mitigate adverse effects of activities and facilities adjacent to the Parkway.
- 34 • To provide public safety and protection within and adjacent to the Parkway.

35 Policies in the plan touch on many topics, including permitted recreational activities and facilities;
36 prohibited activities and facilities; allowable group activities; permitted commercial activities; and
37 appropriate location, use, and design of public access and trails. The plan also includes guiding
38 concepts for management. The following policies are relevant to recreation:

- 39 • **Policy 1.1 Balanced Management:** The American River Parkway is a unique regional asset that
40 shall be managed to balance the goals of controlling flooding; preserving and enhancing native
41 vegetation, native fish species, the naturalistic open space and environmental quality within the

1 urban environment; maintaining and improving water flow and quality; providing adequate
 2 habitat connectivity and travel corridors to support migratory and resident wildlife; providing
 3 recreational opportunities; and ensuring public safety.

- 4 ● **Policy 1.2 Recreation:** The Parkway shall be oriented to passive, unstructured water-enhanced
 5 recreation activities which are appropriate in a natural environment, and which are not
 6 normally provided by other County recreational facilities. To this end, development in the
 7 Parkway shall be minimal, and facilities which are primarily visitor attractions should be placed
 8 in less sensitive areas within the County Park system. Insofar as possible, development shall not
 9 occur in areas where natural ecosystems are still relatively undisturbed.

10 The following policies are specific to the Discovery Park area.

- 11 ● **Policy 10.9:** Maintain the existing boat access points in their current locations and in a manner
 12 that protects and improves water quality and bank stability.
- 13 ● **Policy 10.10:** Create short-term equestrian trailer parking and an equestrian staging area that
 14 includes appropriate facilities such as water, hitching posts, and a manure bunker.

15 San Joaquin County

16 San Joaquin County General Plan

17 The *San Joaquin County General Plan 2010* (San Joaquin County 1992) notes that the Delta provides
 18 for considerable recreation and enjoyment of the county's water resources. It identifies substantial
 19 resource areas for recreation, including the waterways of the Delta and the Mokelumne River. The
 20 plan objectives seek to "protect the diverse resources upon which recreation is based, such as
 21 waterways [and] marsh lands" and "ensure the preservation of the Delta as a recreational resource"
 22 (San Joaquin County 1992). Policies specific to the Delta identify it as an area of international
 23 importance and a major recreational resource of the county and limit development on the islands to
 24 water-dependent uses, recreation, and agriculture. The general plan includes the following
 25 objectives and policies that address recreation:

26 *Open Space*

- 27 ● **Policy 6:** The County shall consider waterways, levees, and utility corridors as major elements
 28 of the open space network and shall encourage their use for recreation and trails in appropriate
 29 areas.

30 *Public Facilities*

- 31 ● **Objective 2:** To protect the diverse resources upon which recreation is based, such as
 32 waterways, marsh lands, wildlife habitats, unique land and scenic features, and historical and
 33 cultural sites.
- 34 ● **Objective 3:** To ensure the preservation of the Delta and the opportunity for the public to learn
 35 about and enjoy this unique recreation resource.
 - 36 ○ **Policy 7:** Natural features shall be preserved in recreation areas, and opportunities to
 37 experience natural settings shall be provided.
 - 38 ○ **Policy 13:** Recreational use of the County's waterways will be supported, and the County
 39 shall ensure adequate public access to waterways at selected locations.

- 1 ○ **Policy 14:** Water-related resources shall be protected for their importance to recreational
2 uses.
- 3 ○ **Policy 15:** The recreational values of the Delta, the Mokelumne River, and the Stanislaus
4 River shall be protected.
- 5 ○ **Policy 16:** The recreational potential, particularly for trails, of the Calaveras River, the San
6 Joaquin River, the Stockton Diverting Canal, and water conveyor projects shall be recognized
7 and studied. The potential for land use conflicts associated with public use of waterways
8 (e.g., trespassing, littering, vandalism) should be assessed for selected recreation sites.
- 9 ○ **Policy 17:** The Delta shall be recognized as an area of international importance and as a
10 major recreational, wildlife, agricultural, and economic resource of San Joaquin County.
- 11 ○ **Policy 18:** Waterway development and development on Delta islands shall protect the
12 natural beauty, the fisheries, wildlife, riparian vegetation, and the navigability of the
13 waterway.
- 14 ○ **Policy 19:** Development in the Delta islands shall generally be limited to water-dependent
15 uses, recreation, and agricultural uses.

16 **Solano County**

17 **Solano County General Plan**

18 The *Solano County General Plan* (Solano County 2008a) identifies policies to maintain and expand
19 public access and recreational activities in Suisun Marsh, such as duck hunting, boating, fishing, and
20 nature study. The Suisun Marsh Addendum notes the opportunities for increasing the recreation
21 diversity and public access in the marsh, particularly given the increase in demand expected to
22 accompany population growth, and identifies related policies. The Park and Recreation Element
23 (Solano County 2003), adopted before the most recent general plan, identifies general policies for
24 managing and improving the county's park and recreational facilities. Solano County land located in
25 the statutory Delta is designated as agricultural. The general plan includes the following policies
26 specific to recreation in the Suisun Marsh and the Delta:

- 27 ● **Policy RS.P-18:** The County shall ensure that public access at appropriate locations is provided
28 and protected along the County's significant waterways within the Suisun Marsh.
- 29 ● **Policy RS.P-26:** Promote continued recreational use of the land and waters of the Delta,
30 including fishing and boating; ensure needed recreational facilities are constructed, maintained,
31 and supervised; protect landowners from unauthorized recreational uses on private lands; and
32 maximize dwindling public funds for recreation by promoting public private partnerships and
33 multiple uses of Delta lands consistent with the Land Use and Resource Management Plan for
34 the Primary Zone of the Delta.

35 Additional objectives and associated policies in the Park and Recreation Element include the
36 following.

- 37 ● **Objective 3:** Identify, preserve and manage significant regional recreation and natural areas.
 - 38 ○ **Policy C:** The County shall work to protect identified recreational sites and natural resource
39 areas.
- 40 ● **Objective 5:** Encourage appropriate multiple uses of public land for recreation and other uses.

- 1 ○ **Policy A:** The County shall make the optimum use of public lands by developing or
2 promoting development of facilities that are compatible with the primary resources of the
3 site.

4 The *Suisun Marsh Policy Addendum* (Solano County 2008b) states that recreation use in the marsh
5 should be guided through the following policies.

- 6 ● **Policy 1:** Within the Suisun Marsh, provision should be made for public and private recreational
7 development to allow for public recreation and access to the Marsh for such uses as fishing,
8 hunting, boating, picnicking, hiking and nature study.
- 9 ● **Policy 2:** Recreational uses in the Marsh should be located on the outer portions near
10 population centers and easily accessible from existing roads.
- 11 ● **Policy 3:** Recreational activities that could result in adverse impacts on the environment of the
12 Suisun Marsh should not be permitted.
- 13 ● **Policy 4:** Additional land should be acquired within the Suisun Marsh to provide for increased
14 public duck hunting recreational use and additional refuge areas for waterfowl during the
15 hunting season. Acquisition priority should be given to those lands not now operated as
16 managed wetlands.
- 17 ● **Policy 5:** Land should also be purchased for public recreation and access to the Marsh for such
18 uses as fishing, boat launching, nature study, and for scientific and educational uses. These areas
19 should be located on the outer portions of the Marsh near the population centers and easily
20 accessible from existing roads. Improvements for public use should be consistent with
21 protection of wildlife resources.
- 22 ● **Policy 6:** Public agencies acquiring land in the Marsh for public access and recreational use
23 should provide for a balance of recreational needs by expanding and diversifying opportunities
24 for activities such as bird watching, picnicking, hiking, and nature study.
- 25 ● **Policy 7:** Agencies administering land acquired for public access and recreational use should be
26 responsible for maintaining the areas and controlling their use. Signing on roads leading into the
27 Marsh and maintained litter receptacles at major public use areas should be provided by the
28 appropriate local or State agency to prevent littering and vandalism to public and private
29 property.
- 30 ● **Policy 8:** Recreational activities that could result in adverse impacts on the environmental or
31 aesthetic qualities of the Suisun Marsh should not be permitted. Levels of use should also be
32 monitored to insure that their intensity is compatible with other recreation activities and with
33 protection of the Marsh environment. For example, boat speeds and excessive noise should be
34 controlled and activities such as water skiing and naval training exercises should be kept at an
35 acceptable level.

36 **City of Rio Vista General Plan**

37 The Open Space and Recreation Element of the *Rio Vista General Plan* (City of Rio Vista 2002)
38 identifies goals, policies, and actions regarding the long-term future of parks and open space in the
39 city. The city has five neighborhood parks, two community parks, a fishing access and pier, a public
40 dock and launch, and a marina. The city also operates paths, a golf course, a museum, a youth center,
41 and a senior center. It will have conveyed to it the former U.S. Army Reserve Base, southwest of
42 downtown Rio Vista on the Sacramento River. A condition of the conveyance is that the city must

1 use the property for recreational purposes. Goals and policies in the Recreation Element relate to
 2 providing public access and viewing opportunities on the Sacramento River, creating an open space
 3 system, developing a comprehensive trails system, and supporting preservation and enhancement
 4 of natural resources. Parks and recreation goals include providing a variety of opportunities for city
 5 residents, well-designed parks and recreational facilities, city parks consistent with the rate of
 6 residential development, and well-designed parks that enhance neighborhood identity and
 7 character. The general plan includes the following goals and policies that address recreation:

- 8 ● **Goal 5.4:** To protect and develop native habitat and create a variety of recreational experiences.
- 9 ● **Goal 9.1:** To provide public access and view opportunities on the Sacramento River to the
 10 maximum extent feasible.
 - 11 ○ **Policy 9.1.C:** The City shall enhance the Sacramento River and its waterfront as a scenic
 12 resource consistent with water-oriented recreation.
 - 13 ○ **Policy 10.1.C:** The City shall require that new development be designed and constructed to
 14 preserve the following types of areas and features as open space to the maximum extent
 15 feasible.
 - 16 ● High erosion hazard areas
 - 17 ● Scenic and trail corridors
 - 18 ● Streams and riparian vegetation
 - 19 ● Wetlands
 - 20 ● Drainage corridors
 - 21 ● Other significant stands of vegetation
 - 22 ● Wildlife corridors
 - 23 ● Key hilltops
 - 24 ● Views of the Sacramento River
 - 25 ● Any areas of federal, state, or local significance
 - 26 ● Sensitive Local Resource Areas

27 **Sutter County**

28 **Sutter County General Plan**

29 Sutter County adopted an updated general plan in April 2011. A public review draft identifies goals
 30 and policies related to environmental resources and parks and recreation (Sutter County 2010).

31 The previous general plan (Sutter County 1996) identified a policy to maintain and improve the
 32 distribution of parks in the county. The implementation program for recreation directed the county
 33 to prepare a county park and recreation master plan.

34 The 2010 draft plan's Public Services chapter includes a goal and policy related to ensuring
 35 adequate park, recreation and opens space lands and programs for the county's residents and
 36 addresses recreational trails.

1 **Yolo County**

2 **Yolo County General Plan**

3 The *Yolo County 2030 Countywide General Plan* (County of Yolo 2009) notes the existing “resource”
 4 parks in the county, several of which are along the Sacramento River (Knights Landing River Access,
 5 Elkhorn Regional Park, Helvetia Oak Grove, and Clarksburg River Access Park), and provides a map
 6 of future parks and trails, including expanded Sacramento River access and trail linkages, a gateway
 7 park to the Yolo Bypass, trail linkages along the Sacramento River between Knights Landing and
 8 Clarksburg, a gateway park in the Delta region, and a new California Indian Heritage Center. The
 9 Conservation and Open Space Element of the plan identifies policies to increase public access, trail
 10 linkages, and recreational use along waterways, particularly the Yolo Bypass and the Sacramento
 11 River.

12 The plan’s Conservation and Open Space Element includes the following policy specifically related to
 13 recreation in the Delta region.

- 14 ● **Policy CO-9.14:** Establish Clarksburg as a gateway entry for visitors to the Delta region seeking
 15 agricultural tourism, ecotourism, and recreational opportunities.

16 The following additional policies and associated implementation actions also address recreation.

- 17 ● **Policy CO-1.1:** Expand and enhance an integrated network of open space to support agriculture,
 18 recreation, natural resources, historic and tribal resources, habitat, water management,
 19 aesthetics, and other beneficial uses.
- 20 ● **Policy CO-1.2:** Develop a connected system of recreational trails to link communities and parks
 21 throughout the county.
- 22 ● **Policy CO-1.3:** Create a network of regional parks and open space corridors that highlight
 23 unique resources and recreational opportunities for a variety of users.
- 24 ● **Policy CO-1.6:** Develop “gateways” or trailheads that provide access for the public to County,
 25 State, and Federal lands. Where located on private land, gateways shall be developed working
 26 with willing landowners.
- 27 ● **Policy CO-1.8:** Encourage responsible stewardship of private lands. Promote increased
 28 opportunities for public access to waterways and other natural areas.
- 29 ● **Policy CO-1.12:** Create opportunities for ecotourism.
- 30 ● **Policy CO-1.24:** Increase public access and recreational uses along waterways wherever
 31 feasible, particularly Cache Creek, Lower Putah Creek, the Yolo Bypass, and the Sacramento
 32 River.
- 33 ● **Policy CO-1.25:** Allow for specified areas of resource parks to be preserved, enhanced and/or
 34 restored as mitigation sites for public agencies only, consistent with the requirements of
 35 appropriate regulatory and funding agencies, provided that adequate compensation, including
 36 funding for operations and maintenance of the mitigation, is provided.
- 37 ● **Policy CO-1.27:** Support improved access for bank fishing.
- 38 ● **Policy CO-1.29:** Balance the needs of agriculture with recreation, flood management, and
 39 habitat, within the Yolo Bypass.

- 1 ○ **Action CO-A6:** Connect the future Bay Delta Trail system, the future trail system in the
2 lower Yolo Bypass, and the future Cache Creek Parkway system, and link those trails to the
3 American River Bikeway system in Sacramento County.
- 4 ○ **Action CO-A11:** Provide recreational uses that are river or creek dependent in locations
5 directly on Cache Creek, Putah Creek, and the Sacramento River. Examples include fishing,
6 canoeing, boating, and nature observation. With the exception of boat launches and docks,
7 more active uses, such as parking, restrooms, and picnic areas, shall be located in areas
8 away from the river and sensitive riparian habitat.

9 An updated parks master plan is referred to as the document to implement Conservation and Open
10 Space Element goals and policies.

11 **City of West Sacramento General Plan**

12 The *City of West Sacramento General Plan* identifies the goal of enhancing the relationship between
13 the city and the Sacramento River (City of West Sacramento 2004). Related policies protect and
14 enhance public access to the Sacramento River along the entire riverfront, promote the development
15 of marinas, scenic areas, and open space and pedestrian links to other parks and open space areas.
16 The plan also identifies policies to increase access to the Sacramento River Deep Water Ship
17 Channel, including the development of water-oriented park and recreational facilities.

18 Goals and associated policies in the Recreation and Cultural Resources Element include the
19 following.

- 20 ● **Goal A:** To establish and maintain a public park system and recreation facilities suited to the
21 needs of West Sacramento residents and visitors.
 - 22 ○ **Policy 12:** The City shall identify appropriate open spaces, including areas within the
23 Central Business District and along the Sacramento River, for development of safe
24 community activity areas.
- 25 ● **Goal B:** To promote the provision of private recreational facilities and opportunities.
 - 26 ○ **Policy 4:** The City shall encourage development of new marinas in appropriate locations on
27 the Sacramento River and along the Barge Canal.
 - 28 ○ **Policy 6:** The City supports the use of the barge canal for aquatic recreational activities,
29 such as sailing, rowing, kayaking, and canoeing, and supports the establishment of a multi-
30 use aquatic facility along the barge canal. Aquatic parks, boat houses, docks, and other
31 support facilities for boating shall be deemed compatible uses along the Deep Water Ship
32 Channel and the barge canal within all land use designations.
- 33 ● **Goal D:** To provide and encourage, to the fullest extent possible, public access to the Sacramento
34 River and Deep Water Ship Channel for recreation purposes.
 - 35 ○ **Policy 1:** The City shall ensure continuous public access to the Sacramento River for its full
36 length within West Sacramento.
 - 37 ○ **Policy 2:** The City shall seek to ensure continuous public access to the Deep Water Ship
38 Channel, within the limits imposed by safety considerations.
 - 39 ○ **Policy 3:** Linear access to the Sacramento River and Deep Water Ship Channel shall be
40 linked to the City's overall system of parks, recreational pathways, and open space. To this

- 1 end, the City shall require the dedication of public access easements through new
2 developments along the Sacramento River and Deep Water Ship Channel.
- 3 ○ **Policy 4:** The City shall encourage the development of public and private marinas in
4 appropriate locations on the Sacramento River and along the Deep Water Ship Channel.
5 Siting and development of marinas shall avoid, as much as possible, areas of significant
6 existing riparian vegetation.
 - 7 ○ **Policy 5:** The City shall support and encourage the development of public and private
8 water-oriented park and recreational facilities along the Sacramento River and the Deep
9 Water Ship Channel.
 - 10 ● **Goal E:** To provide a network of pedestrian and bicycle pathways connecting parks and open
11 space areas with other destination points within and beyond the City of West Sacramento.
 - 12 ○ **Policy 2:** The City shall implement a Riverfront Park Master Plan that provides for a system
13 of continuous pedestrian and bicycle pathways along the Sacramento River.
 - 14 ○ **Policy 4:** The City shall coordinate the development of the riverfront as envisioned in the
15 1997 Sacramento Greenway Plan.

16 The City of West Sacramento is in the process of updating its General Plan. A 2010 revised draft
17 vision statement includes the category “Healthy Communities,” which identifies an issue area of
18 “creating convenient and safe opportunities for physical activity for residents of all ages and income
19 levels” (City of West Sacramento 2010).

20 **Other Local Policies and Regulations**

21 **Cosumnes River Preserve Management Plan**

22 The Cosumnes River Preserve is a conglomeration of lands owned in fee title by multiple agencies
23 and lands held under conservation easement. The *Cosumnes River Preserve Management Plan*
24 (Cosumnes River Preserve 2008) directs how the preserve will be managed over the next 10 years.
25 Goals, objectives, and actions are related to improving stewardship of the preserve through
26 compatible uses. Goals include ensuring that recreational use, the volunteer program, the education
27 program, and scientific research are compatible with natural resource stewardship goals, and that
28 they promote teaching of environmental stewardship, and have adequate, stable funding. Objectives
29 of the recreational use goal include tracking use more accurately, continuing existing opportunities,
30 exploring opportunities for additional recreation amenities and providing new recreation
31 experiences, continuing the trail system, maintaining a safe environment, reducing inappropriate
32 uses, and securing funding.

33 The plan includes the following recreation objectives and associated actions for implementation.

34 **Recreation Objectives**

- 35 ● **Objective 1.2:** Promote and enhance existing recreational opportunities.
- 36 ● **Objective 1.3:** Explore opportunities for additional recreational amenities that are consistent
37 with the five key factors and three feasibility factors.
- 38 ● **Objective 1.4:** Explore the feasibility of providing a wider range of recreational experiences not
39 currently allowed on the Preserve (e.g., horseback riding, camping, OHV use, and mountain
40 biking) that are consistent with the five key factors and three feasibility factors.

1 **Actions**

- 2 ● **Action 1.2.5:** Maintain existing paddling routes.
- 3 ● **Action 1.2.6:** Maintain the existing boat dock.
- 4 ● **Action 1.2.11:** Continue to provide existing hunting opportunities at the current level, unless
- 5 that level is determined to be incompatible with the mission and goals of the Preserve.
- 6 ● **Action 1.3.5:** Participate in discussions with Sacramento County and other Preserve Partners
- 7 regarding the potential for future regional trails, including one to connect Stone Lakes Refuge to
- 8 the Preserve.

9 **East Bay Regional Park District Master Plan**

10 The EBRPD provides and manages 65 regional parks in Alameda and Contra Costa counties,
 11 including Browns Island Regional Preserve, Antioch Regional Shoreline, Big Break Regional
 12 Shoreline, and the San Francisco Bay Water Trail. Partially completed regional trails in the Delta
 13 include segments of the Mokelumne Coast to Crest Trail and Delta/De Anza Trail. EBRPD's *Master*
 14 *Plan 1997* (East Bay Regional Park District 1996) sets priorities for the next 10 years and provides
 15 policies and guidelines for resource conservation, management, interpretation, public access, and
 16 recreation. Policies specifically strive to increase public access to the Delta shoreline for boating and
 17 fishing. The EBRPD is updating its Master Plan to guide "stewardship and development of current
 18 and future parks in such a way [as] to maintain a careful balance between the need to protect and
 19 conserve natural resources while offering recreational use of parklands for all to enjoy now and in
 20 the future." It expects the planning and public participation process to continue through 2012 (East
 21 Bay Regional Park District 2012b).

22 The 2007 master plan map (East Bay Regional Park District 2007) amended the 1997 master plan
 23 and identified areas for potential EBRPD parklands, including Delta access (on Orwood Tract), Delta
 24 recreation (on Jersey Island), and Pittsburg/Antioch regional shorelines. Potential regional trails
 25 include the Great California Delta Trail, Delta Island Shoreline Trail, the Delta Trail Extension and
 26 segments along Big Break Shoreline, the Southern Pacific Railroad, Marsh Creek Trail to Discovery
 27 Bay, and Mokelumne to Discovery Bay.

28 The master plan includes the following policies regarding recreation on EBRPD lands.

- 29 ● The District will manage riparian and other wetland environments and their buffer zones to
- 30 preserve and enhance the natural and beneficial values of these resources and to prevent the
- 31 destruction, loss, or degradation of habitat. The District will participate in the preservation,
- 32 restoration, and management of riparian and wetland areas of regional significance, and will not
- 33 initiate any action that could result in a net decrease in park wetlands. The District will
- 34 encourage public access to the Bay/Delta shoreline, but will control access to riparian and
- 35 wetland areas, when necessary, to protect natural resources.
- 36 ● The District will continue to plan, develop and provide a regional system of aquatic facilities at
- 37 parks that can support these activities. The District will strive to improve public access to lakes
- 38 and to the San Francisco Bay and Delta shorelines for boating and fishing, and will increase
- 39 access to swimming beaches.
- 40 ● The District will acquire property in accordance with the Master Plan 1997, giving careful
- 41 consideration to operating and program needs, the District's financial position, timing factors

1 that affect the sale of the property, and opportunities provided under Measure AA and any
2 subsequent funding measures.

- 3 ● Regional Trails will connect regional parks or trails to each other; to parks and trails of other
4 agencies; or to areas of unusual scenic beauty, vista points, San Francisco Bay, Delta or lake
5 shoreline, natural or historic resources, or similar areas of regional significance. Regional Trails
6 may also connect regional parks and trails to destinations such as transit centers, schools,
7 colleges, civic centers, other major institutions, employment centers, large commercial
8 complexes, or residential areas. A regional water trail may provide a water connection with
9 launching and landing sites for small watercraft to points along the San Francisco Bay shoreline
10 and/or the Sacramento/San Joaquin River and Delta.
- 11 ● To protect park resources while providing for regional recreational use and access, the District
12 will prepare plans (Land Use Plans or System-wide Plans) that describe the various levels of
13 resource protection and recreational intensity in the parks, development projects, and land
14 management strategies for trails and parks. Planning efforts will include consideration of
15 proposals from the public. The District will strive to create and maintain up-to date information
16 about each of its parks. Significant changes or amendments to adopted plans will require further
17 public comment and Board action.
- 18 ● Complete key park and trail projects in the eastern part of the District to serve newly annexed
19 areas and anticipate urban growth. Where possible, enhance facilities, services, and programs
20 provided by other agencies.
- 21 ● Complete the missing sections of the Bay Area Ridge Trail and the San Francisco Bay Trail.

22 **Suisun Marsh Protection Plan**

23 The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 called for the San Francisco Bay
24 Conservation and Development Commission and CDFW to prepare the *Suisun Marsh Protection Plan*
25 (San Francisco Bay Conservation and Development Commission 1976). Adopted in 1976, the plan
26 includes findings and policies for a number of resources, as well as a plan implementation program.
27 The following policies (as amended in November 2007) address recreation and public access.

- 28 ● **Policy 1:** Continued recreational use of privately-owned managed wetlands should be
29 encouraged. Additional land should be acquired within the Suisun Marsh to provide for
30 increased public recreational use and additional refuge areas for waterfowl during the hunting
31 season. Acquisition priority should be given to those lands not now operated as managed
32 wetlands.
- 33 ● **Policy 2:** Land should also be purchased for public recreation and access to the Marsh for such
34 uses as fishing boat launching and nature study. These areas should be located on the outer
35 portions of the Marsh near the population centers and easily accessible from existing roads.
36 Improvements for public use should be consistent with protection of wildlife resources.
- 37 ● **Policy 3:** Public agencies acquiring land in the marsh for public access and recreational use
38 should provide for a balance of recreational needs by expanding and diversifying opportunities
39 for activities such as bird watching, picnicking, hiking, and nature study.
- 40 ● **Policy 4:** Agencies administering land acquired for public access and recreational use should be
41 responsible for maintaining the areas and controlling their use. Signing on roads leading into the
42 Marsh and maintained litter receptacles at major public use areas should be provided by the

1 appropriate local or State agency to prevent littering and vandalism to public and private
2 property.

- 3 ● **Policy 5:** Recreational activities that could result in adverse impacts to the environment or
4 aesthetic qualities of the Suisun Marsh should not be permitted. Levels of use should also be
5 monitored to insure that their intensity is compatible with other recreation activities and with
6 protection of the Marsh environment. For example, boat speeds and excessive noise should be
7 controlled and activities such as water skiing and naval training exercises should be kept at an
8 acceptable level.

9 **The Great California Delta Trail Blueprint Report for Contra Costa and Solano** 10 **Counties**

11 *The Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* (Blueprint
12 Report) stemmed from Senate Bill 1556, which requires DPC to facilitate the planning and feasibility
13 process for establishment of the Great California Delta Trail System. The Great California Delta Trail
14 System is described in Section 15.2.2.2, *Delta Protection Commission, Great California Delta Trail*
15 *System*.

16 The Blueprint Report, adopted on September 23, 2010, reflects a specific vision, goals, outreach,
17 feasibility, the planning process, action plan, and policies for a recreational corridor through the two
18 counties. The Blueprint Report reflects a process developed through work with a broad cross
19 section of local agencies and stakeholder groups. The Blueprint Report is intended to lay the
20 groundwork for more detailed planning and implementation in Contra Costa and Solano Counties,
21 and for the extension of the trail system in other counties. The Blueprint Report does not provide
22 specific trail alignments (although it has identified 1,545 miles of existing trails); its focus is on
23 developing the planning and feasibility process. The Blueprint Report's vision, developed with input
24 by the Solano and Contra Costa County Technical Advisory and Stakeholder Advisory Committees in
25 January 2010, was created to support recreation and tourism; safer access to community centers,
26 parks, schools, neighborhoods, businesses and tourism facilities for bicyclists, pedestrians, and
27 people with disabilities; healthier lifestyles; appreciation of the Delta heritage, and appreciation of
28 the natural and agriculture resources of the Delta. In support of the vision, the Blueprint Report
29 established 11 goals and 68 policies. Following are the Blueprint Report's goals and abbreviated
30 policies for each.

- 31 ● **Goal 1:** Community Benefits—Supporting policies include creating a sense of pride; supporting
32 recreation and tourism; providing safe routes of travel; developing awareness and appreciation
33 of the Delta; and supporting economic opportunities.
- 34 ● **Goal 2:** Outreach and Engagement—Supporting policies include informing the public about the
35 value and benefit of the Delta Trail system; facilitating the exchange of information; and
36 enabling a better understanding of the opportunities and issues.
- 37 ● **Goal 3:** Connections to Regional and Local Destinations—Supporting policies include
38 establishing and enhancing region trail connections; developing a hierarchy of trails and
39 linkages; seamlessly connecting regional trails; and providing safe crossings.
- 40 ● **Goal 4:** Compatibility with Existing Land Uses—Supporting policies include the use of existing
41 public lands, easements, and public rights-of-way whenever possible; protecting agricultural
42 viability; and avoiding trespassing on private property and environmentally sensitive areas.

- 1 • **Goal 5: Provide Equitable Access**—Supporting policies include developing trails that
2 accommodate people of all abilities and providing access to a wide variety of recreational
3 facilities, corridors, resources, and points of interest.
- 4 • **Goal 6: Education and Encouragement**—Supporting policies include providing educational
5 opportunities along the trail; promoting the use of the trail for health and transportation
6 benefits; promoting clear orientation, signage, and wayfinding along the trail system; and the
7 integration of state and local recreational opportunities.
- 8 • **Goal 7: Partnership and Momentum**—Supporting policies include maintaining project
9 momentum; coordinating trail planning and development; integrating the Delta Trail within the
10 California Recreational Trails Plan; encouraging cities and counties to add policies and
11 alignments into general plans, etc.; integration with other Delta projects; coordination with
12 other organizations; and encouraging private landowners to dedicate public trail easements.
- 13 • **Goal 8: Environmental Sustainability and Stewardship**—Supporting policies include planning
14 and designing trails to avoid or minimize environmental impacts; using “green” design practices;
15 and supporting walking and biking to reduce automobile congestion and improve air and water
16 quality.
- 17 • **Goal 9: Quality Design and Implementation**—Supporting policies include complying with
18 guidelines and best practices for crossings; encouraging and accommodating different trail
19 users; providing a consistent design or identity theme; providing convenient and safe access
20 points; inclusion of barriers to minimize impacts on adjacent lands; providing regulatory quality
21 signage; and planning and designing trails with consideration of rising sea levels.
- 22 • **Goal 10: Adequate Funding**—Supporting policies include providing adequate funding;
23 prioritizing funding to allow for early adoption of key segments; actively monitoring and
24 responding to grant opportunities; establishing endowments for maintenance and operations;
25 coordinating and partnering with other entities such as schools, etc.; and actively involve
26 volunteer groups.
- 27 • **Goal 11: Quality Operations and Maintenance**—Supporting policies include the preparation of a
28 management plan; designating allowable uses based upon demand; actively involving volunteer
29 groups; ensuring adequate emergency access; increasing awareness of tidal changes; and
30 developing educational programs and volunteer trail patrols.

31 The Blueprint Report also identifies issues affecting implementation of a trail system of this scale,
32 such as public safety and liability, private property impacts and liability, property access and land
33 use conflicts, agricultural resources, levee integrity and maintenance, water quality, environmental
34 resources, funding, and trail design.

35 15.3 Environmental Consequences

36 This section describes the potential effects on recreation that would result from project
37 construction, operation, and maintenance, and describes on a programmatic level the effects that
38 would result from proposed restoration activities.

15.3.1 Methods for Analysis

15.3.1.1 Assessment Methods

Conservation Measure 1

The assessment methods for Conservation Measure 1 (CM1) evaluate effects on recreation resources resulting from the construction, operation, and maintenance of facilities as they affect the following.

- Recreational activities (water-dependent, water-enhanced, and land-based) and opportunities in the study area that are near action alternative facilities.
- Water-dependent (e.g., boating and swimming) and water-enhanced recreation opportunities at major north-of-Delta reservoirs and major SWP/CVP south-of-Delta reservoirs that may be affected by changed operations under the action alternatives.

Effects on recreation were assessed by identifying recreation areas that fall within the construction footprint to evaluate whether recreation sites or facilities would be permanently displaced by the proposed water conveyance facilities. In addition, the effects on recreation sites or uses within certain distances of construction activity were evaluated to assess the potential for construction-related disturbances to recreation opportunities because of changes to the visual setting and elevated noise levels that could occur during construction of the proposed facilities. These impact areas were primarily based on the analysis described in Chapter 23, *Noise*, Section 23.4.3 (see Table 23-15. Predicted Noise Levels from Construction Activities and Table 23-16. Predicted Noise Levels from Construction—Pile Driving and Construction Equipment for Intake Structures). These impact areas were determined using GIS sources to evaluate the potential for degradation of the recreation setting due to construction or operations and maintenance of the action alternatives.

Effects on recreation that could occur during construction of action alternative facilities were evaluated qualitatively. Construction activities could result in a short-term loss of recreation opportunities (2 years or less) by disrupting use of recreation areas or facilities. A long-term effect (more than 2 years) could occur if a recreation opportunity is substantially changed or eliminated due to the presence of construction-related activities and noise or the opportunity is fully eliminated as a result of placement of water conveyance structure(s) on or adjacent to a recreation area or facility. Effects on recreation that could occur as a result of maintenance and operation of the water conveyance facilities were also evaluated qualitatively. Maintenance activities could result in short-term loss of recreation opportunities by disrupting use of recreation areas or facilities and operation of the pump stations could result in noise levels that affect recreation areas.

In addition, operating the action alternatives could result in changes in reservoir storage and river flows in the study area. The resulting change in reservoir storage could change the frequency and duration that reservoir levels are within acceptable ranges or above the minimum level necessary to conduct recreational activities (Table 15-9).

Table 15-9. Recreation Opportunity Thresholds for North-of-Delta and South-of-Delta Recreation Resources

Water Resource	Elevation (feet) when Full	Recreation Water Surface Elevation Thresholds ^{a, b}
Folsom Lake	466 ft msl	405 ft msl—marina closes
Shasta Lake	1,067 ft msl	<967 ft msl—limited surface area (boating constrained)
Trinity Lake	2,370 ft msl	2,270 ft msl—recreation opportunities limited
Lake Oroville	900 ft msl	700 ft msl—boating opportunities limited
San Luis Reservoir	543 ft msl	360 ft msl—boating impaired
New Melones Reservoir	1,090 ft msl	900 ft msl—boating impaired

^a Thresholds are measured in feet above mean sea level (msl) for reservoirs.

^b Hereafter, this threshold is referred to as “Recreation Threshold”

The analysis focuses on a level at which the recreation experience would be degraded at those reservoirs that would experience operational changes as a result of the operation of the action alternatives: Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir. These reservoirs could experience slight variations in the storage and elevation patterns due to the operation of the action alternatives. North-of-Delta reservoirs that are below these reservoirs including Lewiston, Whiskeytown, Keswick, Thermalito Forebay and Afterbay, and Natoma are operated with a seasonal storage pattern (elevations) with very small variation from year to year.

The evaluation of effects on water-dependent recreation was conducted by comparing the CALSIM II hydrological modeling results for each alternative with the reservoir storage recreation thresholds. A brief overview of the modeling tools and outputs is provided in Chapter 4, *Approach to the Environmental Analysis*, Section 4.3, and a full description of these tools is provided in Appendix 5A, *Modeling Methodology*. Also see Chapter 5, *Water Supply*, Section 5.1.1, for additional discussion related to operation of the SWP and CVP reservoirs for water supply purposes and for explanation of conditions related to sea level rise and climate change. The results of the simulations are compared and discussed in the following manner.

- Existing Conditions (without sea level rise or climate change) and action alternatives (with sea level rise and climate change that would occur at around Year 2060).
- No Action Alternative (with sea level rise and climate change) and action alternatives (with sea level rise and climate change that would occur at around Year 2060).

The results of the comparison of Existing Conditions and No Action Alternative to the action alternatives reflect differences in exceeding recreation reservoir thresholds due to the difference in SWP/CVP reservoir elevations because of the following two changes.

- Changes in SWP/CVP operations because of the action alternative.
- Changes in SWP/CVP operations because of sea level rise and climate change.

As discussed in Chapter 5, *Water Supply*, in evaluating effects under different SWP/CVP operational scenarios around Year 2060 conditions, readers should be aware that some of the differences between those anticipated future conditions and Existing Conditions for CEQA are solely

1 attributable to sea level rise and climate change, and not to the action alternative operational
 2 scenarios. The results depicting differences between action alternatives scenarios under year 2060
 3 conditions and the CEQA baseline may therefore seem to exaggerate the effects of proposed
 4 operational changes. In these results, some portion of the environmental changes depicted are solely
 5 attributable to sea level rise and climate change (i.e., anticipated reductions in snowfall and effects
 6 on precipitation generally). Please refer to Chapter 5, *Water Supply*, for additional discussion of
 7 changes due to sea level rise and effects due to climate change.

8 For each action alternative, the following comparisons are presented for a quantitative discussion of
 9 changes in reservoir elevations relative to recreation reservoir elevation thresholds. The
 10 significance of impacts on recreation activities occurring at reservoirs is based on the change in end-
 11 of-September surface elevations attributable to operation of each alternative. Changes in reservoir
 12 storage as a result of sea level rise and climate change were not attributable to the operation of each
 13 alternative.

14 Comparison of each action alternative (2060) to Existing Conditions (CEQA baseline), shows
 15 changes in SWP/CVP reservoir elevations that are caused by three factors: sea level rise, climate
 16 change, and implementation of the action alternative. Comparison of each action alternative (2060)
 17 to No Action Alternative (2060) will indicate the general extent of changes in SWP/CVP reservoir
 18 levels and related recreation conditions due to implementation of the action alternatives. Because
 19 sea level rise and climate change are reflected in each action alternative and in the No Action
 20 Alternative (2060), this comparison allows isolation of the extent of changes in SWP/CVP reservoir
 21 elevations attributable to the differences in operational scenarios amongst the different action
 22 alternatives.

23 **Conservation Measures 2 through 22**

24 The assessment methods for CM2–CM21 programmatically evaluate effects of conservation
 25 measures on recreation. Generally, near-term (2020) effects would result from construction
 26 activities to create habitat or other facilities associated with the conservation measures. Early long-
 27 term and late long-term effects would result from the continual growth and establishment of
 28 habitats or long term operation of facilities. Effects were considered by Conservation Zone (CZ) and
 29 Restoration Opportunity Areas (ROAs) for the following.

- 30 ● Recreational activities (water-dependent, water-enhanced, and land-based) and opportunities
 31 in the study area near habitat restoration sites or other conservation measure facilities.
- 32 ● Fishing activities and opportunities in the study area.

33 Under CM22, the BDCP Implementation Office would implement measures to avoid and minimize
 34 effects on covered species and natural communities that could result from BDCP covered activities.
 35 The avoidance and minimization measures (AMMs) that would be implemented through this
 36 framework are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*.¹ These
 37 measures would be implemented for covered activities throughout the BDCP permit term. CM22
 38 BDCP AMMs would be implemented under all action alternatives but would not be expected to
 39 result in any meaningful effects on recreation sites, opportunities, or experiences in the study area
 40 because they either involve planning, surveying, or other non-land-based activities; or involve
 41 implementation of short-term and localized best management practices to protect covered species

¹ As described in Chapter 1, *Introduction*, Section 1.1, the full Draft EIR/EIS should be understood to include not only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.

1 but would not disrupt recreation activities in the study area. Therefore, CM22 is not discussed
2 further in this analysis.

3 **15.3.2 Determination of Effects**

4 The criteria used for determining the significance of an effect on recreational resources are based on
5 Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines (Environmental
6 Checklist) and professional standards and practices. Effects on both water-dependent and water-
7 enhanced recreation opportunities may be considered adverse for purposes of NEPA and significant
8 for purposes of CEQA if an alternative would result in any one of the following conditions.

- 9 • Locate alternative facilities that would result in the permanent displacement of well-established
10 recreational facilities. For purposes of this analysis, the permanent displacement of a well-
11 established recreation facility is defined as circumstances in which construction or operational
12 activities would result in the permanent loss or closure of such facility or activity.
- 13 • Result in substantial long-term reduction of recreation opportunities and experiences, such as
14 reduce the amount of area available for a particular type of recreation. Recreation experiences
15 in the study area include consideration of visual effects attributable to construction and
16 operation activities associated with water conveyance facilities. For purposes of this analysis,
17 the long-term loss of recreation opportunities and experiences is defined as circumstances in
18 which construction or operations and maintenance activities would result in loss of public
19 access to or public use of well-established recreation facilities or activities lasting for more than
20 2 years.
- 21 • Cause a change in river flows or reservoir elevations that would result in substantial reductions
22 in water-based recreation opportunities. For the purposes of this analysis, effects on water-
23 dependent and water-enhanced recreation activities at reservoirs are considered substantial or
24 adverse if there would be a 10% or greater (more than 8 years) reduction in the frequency of
25 recreation facility availability, using the reservoir recreation thresholds (Table 15-9),
26 attributable to action alternative operations (U.S. Fish and Wildlife Service et al. 1999:3-281-3-
27 282). An increase or decrease in the frequency at which reservoir levels exceed the recreation
28 reservoir elevation threshold of less than 10% (8 years or fewer), attributable to action
29 alternative, operations would not be adverse. An increase in the frequency at which reservoir
30 levels exceed the recreation reservoir elevation threshold attributable to action alternative
31 operations, is considered a beneficial effect on the recreation activities and experience.
- 32 • Cause an increase in the use of existing neighborhood and regional parks or other recreational
33 facilities such that substantial physical deterioration of the facility would occur or be
34 accelerated. For purposes of this analysis, substantial physical deterioration is defined as
35 circumstances in which construction or operational activities would increase study area
36 population levels such that well established recreation facilities would deteriorate at an
37 accelerated rate resulting in loss of use of neighborhood or regional park facilities.

38 In addition, constructing the proposed water conveyance facilities (CM1) and implementing the
39 other conservation measures (CM2–CM21) could result in potential inconsistencies with plans and
40 policies related to the protection of recreation resources in the Delta region. A number of plans and
41 policies that coincide with the study area boundaries provide guidance for recreation issues as
42 overviewed in Section 15.2, *Regulatory Setting*. The analysis of the alternatives provides an
43 assessment of whether the BDCP alternatives are consistent or inconsistent with these plans and

1 policies, rather than determining whether impacts would be adverse or not adverse or significant or
 2 less than significant. If an inconsistency relates to an applicable plan, policy, or regulation adopted to
 3 avoid or mitigate effects on recreation, then an inconsistency might be indicative of a related
 4 significant or adverse effect under CEQA and NEPA, respectively. Such physical effects of the
 5 alternatives on resources are addressed in the impact discussions under each alternative and in
 6 other chapters, such as Chapter 23 *Noise*, Sections 23.4.3.2 through 23.4.3.16, and Chapter 17,
 7 *Aesthetics and Visual Resources*, Sections 17.3.3.2 through 17.3.3.16.

8 **15.3.3 Effects and Mitigation Approaches**

9 Overall construction of CM1 is expected to last up to 9 years. Implementation of the other
 10 conservation measures would be ongoing for the term of the BDCP (50 years). Construction
 11 activities adjacent to or within certain recreation areas or sites could last from 1 to 7.5 years;
 12 activities that do not require removal of a recreation facility or permanent use of a site would be
 13 considered temporary effects. Temporary effects (loss of recreation opportunity) are considered
 14 short-term if the duration is 2 years or less, or long-term, if the duration is more than 2 years.

15 Chapter 16, *Socioeconomics*, Sections 16.3.3.2 through 16.3.3.16, discuss tourism and recreation as
 16 economic drivers in the Delta region and how the potential effects of the alternatives on recreation
 17 opportunities discussed in this chapter could affect regional economics, community character, local
 18 government fiscal conditions, and recreation economics as a result of constructing, operating and
 19 maintaining the proposed water conveyance facilities and conservation measures. The reader is
 20 referred to Chapter 16, *Socioeconomics*, Sections 16.3.3 through 16.3.3.16, for further discussion of
 21 this topic.

22 Chapter 17, *Aesthetics and Visual Resources*, Sections 17.3.3.2 through 17.3.3.16, discuss the long-
 23 term changes in the local visual setting on sensitive receptors from introduction of the alternative
 24 water conveyance facilities to the project area. The reader is referred to Chapter 17, *Aesthetics and*
 25 *Visual Resources*, Sections 17.3.3.2 through 17.3.3.16, for further discussion of this topic.

26 Chapter 20, *Public Services and Utilities*, Sections 20.3.3.2 through 20.3.3.16, describe the estimated
 27 increase in study area population associated with construction of the action alternatives. It is
 28 anticipated that many of the construction jobs would be filled from the existing labor force in the
 29 five-county study area region although construction of the conveyance tunnels may require
 30 specialized skills resulting in recruitment of specially trained workers coming from outside this
 31 region. As described in Chapter 16, *Socioeconomics*, Section 16.3.3.2, Impact ECON-2, this additional
 32 population would constitute a minor increase in the total 2020 projected regional population of 4.6
 33 million. Because the construction population would primarily come from the five-county labor force
 34 and because the minor increase in demand from the worker population that would move into the
 35 area for specialized jobs (e.g., tunnel construction) would be spread across the large multi-county
 36 study area, construction of the alternative is not anticipated to result in an increased demand or
 37 adverse effects on existing neighborhood and regional parks or other recreational facilities such that
 38 substantial physical deterioration of the facility would occur or be accelerated. This effect is not
 39 discussed further in this chapter.

40 Noise traffic modeling indicates that increased noise levels from construction truck hauling and
 41 worker commutes would not result in substantial increases in local noise levels. In addition, Chapter
 42 23, *Noise*, Section 23.4.3.2, describes mitigation measures that would reduce the potential effects of
 43 pump operations on local sensitive receptors to less-than-significant levels. The reader is referred to

Chapter 23, *Noise*, for further discussion of these topics. CALSIM modeling results indicate that effects, if any, to river flows are so minor as to have no effect and are not discussed further. North-of-Delta reservoirs (Lewiston, Whiskeytown, Keswick, Thermalito, and Natoma) and south-of-Delta reservoirs (Castaic Lake, Lake Perris, Pyramid Lake, Silverwood Lake, Castaic Lagoon) are currently operated with a seasonal storage pattern (elevations) with very small variation from year to year. Major San Joaquin Valley eastside reservoirs (i.e. Millerton lake, New Melones Reservoir, etc.) were not evaluated because BDCP operations would not be anticipated to result in a change in annual storage patterns. These operations would remain the same under all the action alternatives and no effects would occur as a result of implementing the BDCP. These reservoirs are not discussed further.

15.3.3.1 No Action Alternative

The No Action Alternative considers changes in recreation that would occur due to the continuation of existing plans, policies, and operations by federal, state, and local agencies as of the year 2060. The No Action Alternative includes projects and programs with defined management and/or operational plans, including facilities under construction as of February 13, 2009, because those actions would be consistent with the continuation of existing management direction or level of management for plans, policies, and operations by the National Environmental Policy Act (NEPA) lead agencies and other agencies. The No Action Alternative assumptions also include projects and programs that received approvals and permits in 2009 to remain consistent with existing management direction. A more comprehensive list of projects and programs are listed in Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*. The No Action Alternative would result in the following effects on recreation.

Delta Water-Dependent Recreation

Temporary effects on water-dependent recreation include restrictions on boat passage and navigation during construction and operation of in-water projects. Future projects include the North Bay Aqueduct Alternative Intake Project and Sacramento Deep Water Ship Channel Dredging Program. These projects could adversely affect water-dependent recreation by restricting boating access and passage during the construction phases by placing structures and construction equipment within Delta waterways. Projects such as the Clifton Court Forebay Fishing Facility, when in place, would increase recreational opportunities in the Delta, as listed in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*. Ongoing projects and programs include the operation of the Delta Cross Channel, the South Delta Temporary Barriers Program, the Georgiana Slough Non-Physical Fish Screen, and construction of wildlife habitat in Suisun Marsh or elsewhere as a result of implementation of the USFWS and NMFS Biological Opinions. These projects and programs, when in place or during construction, would also adversely affect water-dependent recreation by hindering boat passage and access to portions of the Delta's waterways.

Localized effects on water-dependent recreation, such as a decrease in recreational fishing, may occur during construction or installation phases of these projects as a result of loss of access to the water resources. Other effects on fishing may occur as a result of changes in sport fish abundance not directly attributable to the construction or operation of in-Delta facilities. Environmental conditions occurring within upstream rivers and reservoirs, the Delta, and ocean may adversely affect the abundance of sport-fish harvested within the Delta.

1 Other ongoing resources management plans may benefit water-dependent recreation by controlling
 2 nonnative aquatic vegetation such as *Egeria densa* and water hyacinth. These programs help
 3 maintain access to some Delta waterways that could otherwise be inaccessible because of the
 4 presence of dense aquatic vegetation.

5 DPR has prepared the *Recreational Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh*
 6 that includes recommendations for improvements and expansion of four Delta state recreation
 7 areas and six other state parks on the edge of the Delta and Suisun Marsh. While funding is not yet
 8 identified for implementation, any future implementation would include improvements to existing
 9 land- and water-based recreational activities in the Delta (California Department of Parks and
 10 Recreation 2011d).

11 **Delta Land-Based Recreation**

12 Ongoing restoration and environmental enhancement projects may benefit non-consumptive
 13 recreation within the Delta. These projects include recently completed, ongoing, or planned
 14 restoration and enhancement projects within the North Delta, Lower Yolo Bypass, and Suisun Marsh
 15 and implementation of land management plans for Stone Lakes NWR, Yolo Bypass, and Lower
 16 Sherman Island. These restoration projects may enhance wildlife viewing, non-motorized boating,
 17 and other passive recreation opportunities within the Delta by increasing wildlife habitat and public
 18 access. The implementation of land management plans for public lands provide direction for
 19 recreation and may also lead to the installation of additional recreation facilities that provide either
 20 new or enhanced opportunities for recreation and an enhanced recreation setting. Long-term
 21 adverse effects on recreation opportunities and experiences also include those related to sea level
 22 rise and the resulting inundation of many water-based facilities in the Delta.

23 Other land-based recreation activities are expected to increase in response to changes in local and
 24 regional demand. These activities include agritourism, wine tasting, historic and cultural tourism,
 25 bicycling, and driving for pleasure (Delta Stewardship Council 2013).

26 **Recreation Upstream of the Delta**

27 Beneficial effects include those on recreation opportunities and experiences from probable future
 28 projects and programs such as the hatchery and stocking programs; the Red Bluff Diversion Dam
 29 Fish Passage Project; the Battle Creek Salmon and Steelhead Restoration Project; the American
 30 Basin Fish Screen and Habitat Improvement Project; stormwater management programs; and
 31 implementation of the San Joaquin River Restoration Program. These programs could enhance
 32 recreation by increasing the abundance of sport fish. Conditions occurring within upstream rivers
 33 and reservoirs (e.g., river flows, reservoir storage, river and reservoir water temperature, water
 34 quality) can also affect the abundance of sport fish and conditions suitable for river and reservoir
 35 boating or other water-dependent recreation activities. Lower reservoir storage and river flows and
 36 reduced water quality conditions could result in adverse effects on recreation opportunities.

37 CALSIM II output was used to help evaluate the potential changes in north-of-Delta and south-of-
 38 Delta reservoirs where recreation opportunities could be affected by the alternatives, including the
 39 No Action Alternative. The results are shown in Table 15-10a and Table 15-10b. Also see Chapter 3,
 40 *Description of Alternatives*, Section 3.5.1, for detailed information on the No Action Alternative, and
 41 Appendix 5A, *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

Existing Conditions (CEQA Baseline) Compared to No Action Alternative

As shown in Table 15-10a and Table 15-10b, No Action Alternative conditions would have more years in which reservoir levels fall below the recreation threshold relative to the existing condition (CEQA baseline). Under the No Action conditions, the reservoirs would fall below the thresholds from 4 to 28 additional years than under Existing Conditions. These represent a greater than 10% increased exceedance of the reservoir thresholds at Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake. However, as discussed under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise, climate change, and future no action conditions. It is not possible to specifically define the exact extent of the changes due to future no action operations using these model simulation results. Thus, the precise contributions of sea level rise and climate change to the total differences between Existing Conditions and No Action Alternative cannot be isolated in this comparison.

Summary

The CALSIM II modeling results show that, overall, future opportunities for boating-related recreation under the No Action Alternative conditions at these reservoirs would be less than under the Existing Conditions. However, as noted above and discussed in Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise, climate change, and future no action conditions. It is not possible to specifically define the exact extent of the changes due to future no action operations using these model simulation results.

Table 15-10a. Summary of SWP and CVP Reservoir Recreation Opportunities (years below end-of-September recreation threshold) for BDCP Alternatives

BDCP Alternative	Recreation Threshold ^a					
	Trinity Lake		Shasta Lake		Lake Oroville	
	<2,270 ft elevation		<967 ft elevation		<700 ft elevation	
Years ^b	Change relative to Existing Condition (CEQA) ^c	Years ^b	Change relative to Existing Condition (CEQA) ^c	Years ^b	Change relative to Existing Condition (CEQA) ^c	
Existing Condition (CEQA)	21		17		17	
No Action (2060)	43	22	29	12	32	15

^a Recreation thresholds selected for the analysis represent the reservoir surface water elevation at which recreation opportunities become diminished due to restricted access to boat ramps, exposure of previously submerged islands or shoals that affect boater safety, and shoreline degradation.

^b The number of years out of the 82 simulated when the September end-of-month elevation is less than the recreation elevation threshold for the selected BDCP alternative scenario. An elevation less than the recreation threshold indicates years during which recreation opportunities may be diminished (see note a, above).

^c The change values are the number of years of the simulated conditions that the selected alternative differs from the comparison condition (i.e., the Existing Condition or No Action Alternative). A positive change indicates more years with reduced recreation opportunities relative to the comparison condition. A negative change indicates fewer years with reduced recreation opportunities relative to the comparison condition.

22

1 **Table 15-10b. Summary of SWP and CVP Reservoir Recreation Opportunities (years below end-of-**
 2 **September recreation threshold) for Existing Conditions and the No Action Alternative**

	Recreation Threshold ^a					
	Folsom Lake		New Melones Lake		San Luis Reservoir	
	<405 ft elevation		<900 ft elevation		<360 ft elevation	
	Years ^b	Change relative to Existing Condition (CEQA) ^c	Years ^b	Change relative to Existing Condition (CEQA) ^c	Years ^b	Change relative to Existing Condition (CEQA) ^c
Existing Condition (CEQA)	22		9		3	
No Action (2060)	50	28	13	4	9	6

- ^a Recreation thresholds selected for the analysis represent the reservoir surface water elevation at which recreation opportunities become diminished due to restricted access to boat ramps, exposure of previously submerged islands or shoals that affect boater safety, and shoreline degradation.
- ^b The number of years out of the 82 simulated when the September end-of-month elevation is less than the recreation elevation threshold for the selected BDCP alternative scenario. An elevation less than the recreation threshold indicates years during which recreation opportunities may be diminished (see note a, above).
- ^c The change values are the number of years of the simulated conditions that the selected alternative differs from the comparison condition (i.e., the Existing Condition or No Action Alternative). A positive change indicates more years with reduced recreation opportunities relative to the comparison condition. A negative change indicates fewer years with reduced recreation opportunities relative to the comparison condition.

3

4 As described in Chapter 3, *Description of Alternatives*, many of the ongoing programs include
 5 development of future projects that would require additional project-level environmental review.
 6 Future federal actions would be required to comply with NEPA, the federal Endangered Species Act
 7 (ESA), and other federal laws and regulations. Future state and local actions would be required to
 8 comply with CEQA, the California Endangered Species Act (CESA), and other state and local laws and
 9 regulations. Compliance and permit requirements would be implemented on a case-by-case basis.

10 **Catastrophic Seismic Risks**

11 The Delta and vicinity are within a highly active seismic area, with a generally high potential for
 12 future earthquake events along nearby and/or regional faults, and with the probability for such
 13 events increasing over time. Based on the location, extent and non-engineered nature of many
 14 existing levee structures in the Delta area, the potential for significant damage to, or failure of, these
 15 structures during a local seismic event is generally moderate to high. Levees constructed on
 16 liquefiable foundations are expected to experience large deformations (in excess of 10 feet) under a
 17 moderate to large earthquake in the region. Earthquake damage could result in breaching/failure of
 18 existing levees within the Delta area, with a substantial number of these structures exhibiting
 19 moderate to high failure probabilities. The most immediate and significant effect to water quality
 20 under such a scenario would be the influx of large volumes of seawater and/or brackish water into
 21 the Delta, which would alter the “normal” balance of freshwater/seawater flows and result in
 22 flooding of the associated islands. The corresponding shift in Delta water quality conditions would
 23 be characterized by an increase in salinity levels, including specific associated constituents such as
 24 bromide (which affects total dissolved solids concentrations and can contribute to the formation of
 25 undesirable chemical byproducts in treated drinking water). (See Appendix 3E, *Potential Seismic and
 26 Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion). This could result in
 27 permanent displacement of existing, well-established public use or private commercial recreation
 28 facilities as well as result in long-term reduction of recreation opportunities, recreational navigation
 29 opportunities and recreational fishing opportunities. To reclaim land or rebuild levees after a

1 catastrophic event due to climate change or a seismic event would potentially also result in adverse
2 impacts to recreational resources.

3 **CEQA Conclusion:** Overall, the ongoing projects, programs, and plans under the No Action
4 Alternative would result in the potential for temporary and permanent effects on the study area
5 recreation activities that are not expected to substantially change recreation opportunities or
6 experiences in the Delta region. Effects on recreation would either be only short-term disruptions
7 that would be considered less-than-significant impacts or the programs would result in net
8 beneficial effects on recreation opportunities. There would be no BDCP-related disruption to
9 existing recreation activities because there would be no construction of the action alternatives. This
10 impact would be less than significant.

11 Additionally, as shown in Table 15-10a and Table 15-10b, No Action Alternative conditions would
12 have more years in which reservoir levels fall below the recreation threshold relative to the existing
13 condition (CEQA baseline). Under the No Action conditions, the reservoirs would fall below the
14 thresholds from 4 to 28 additional years than under Existing Conditions. These represent a greater
15 than 10% increased exceedance of the reservoir thresholds at Trinity Lake, Shasta Lake, Lake
16 Oroville, and Folsom Lake. However, as discussed under Section 15.3.1, *Methods for Analysis*, these
17 changes in SWP/CVP reservoir elevations are caused by sea level rise, climate change, and future no
18 action conditions. It is not possible to specifically define the exact extent of the changes due to future
19 no action operations using these model simulation results. Thus, the precise contributions of sea
20 level rise and climate change to the total differences between Existing Conditions and No Action
21 Alternative cannot be isolated in this comparison.

22 **15.3.3.2 Alternative 1A—Dual Conveyance with Pipeline/Tunnel and** 23 **Intakes 1–5 (15,000 cfs; Operational Scenario A)**

24 Alternative 1A includes the construction of the five north Delta intake facilities (Intakes 1–5)
25 between River Mile (RM) 44 (south of Freeport) and RM 37 (north of the town of Courtland). Table
26 15-11 lists the recreation sites and areas that may be affected by Alternative 1A. No recreation sites
27 fall within the construction footprint (Mapbook Figure 15-1). Specific effects on recreation areas or
28 sites are discussed below.

1 **Table 15-11. Recreation Sites Potentially Affected by Construction of Alternative 1A**

Recreation Site or Area	Primary Alternative Feature	Potential Impact Source	Duration
Clarksburg Boat Launch (fishing access)	Intake 3 and transmission lines	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Stone Lakes NWR	Potential borrow area between Intakes 1 and 2; Intakes 2, 3 and 4 and associated work areas; intermediate forebay and related work areas	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Georgiana Slough Fishing Access	Tunnel easement, safe haven work area, temporary transmission line, and temporary access road	Noise	Intermittent; up to 2 years (short term)
Cosumnes River Preserve (Private Lands)	Temporary transmission lines; safe haven work area; permanent and temporary access roads (on Tyler Island along tunnel alignment) Reusable tunnel material area; barge unloading facility; concrete batch plant (on Tyler Island) Temporary access road, safe haven work area, temporary transmission line (within the preserve)	Noise	N/A—no recreation use in area affected
Bullfrog Landing (Marina)	Transmission line, permanent access road	Noise, access	Less than 2 years (short term)
Whiskey Slough Harbor Marina	Permanent access road	Noise, access	Less than 2 years (short term)
Clifton Court Forebay	Byron Tract Forebay, control structures and associated work areas	Noise and visual disturbances	Up to 2 years (short term)
Clifton Court Forebay	Byron Tract Forebay pumping plant canal approach structures	Noise	Up to 1 year (short term)

Sources: GIS data layers available from DWR: CPAD, Green Info Network 2011; USFWS Boundaries, USFWS 2012; Recreation Areas, AECOM/ICF 2012; Recreation Facilities, AECOM/ICF 2012.
Note: Construction duration information is approximate and subject to further revision.

2

3 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
4 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
5 **Proposed Water Conveyance Facilities**

6 **NEPA Effects:** The proposed location of the Alternative 1A five intake facilities, tunnels, and
7 associated water conveyance facilities would not lie within the designated boundaries of an existing
8 public use recreation site. The post-construction location of the water conveyance facilities would
9 not result in long-term disruption or reduction of any well-established recreation activity or site,
10 including parks, marinas, or other designated areas. Therefore, there would be no adverse effects.
11 Effects on recreation related to construction of the water conveyance facilities are discussed below
12 in Impact REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, and Chapter
13 23, *Noise*, Section 23.4.3.2, for additional discussion of these topics.

1 **CEQA Conclusion:** The alternative would not locate alternative facilities that would result in the
 2 permanent displacement of any well-established public use or private commercial recreation facility
 3 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 4 required.

5 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 6 **as a Result of Constructing the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** No recreation sites are within the construction footprint. A total of seven recreation
 8 sites are within the 1,200 to 1,400-foot indirect impact area associated with aboveground
 9 construction of the proposed water conveyance facilities (CM1) (see Chapter 23, *Noise*, Section
 10 23.4.3.2, Impact NOI-1). The Cosumnes River Preserve does not have public use facilities that fall
 11 within the impact area although wildlife viewing opportunities could be affected. The effects that
 12 could occur at each potentially affected recreation site are discussed below. Potential indirect effects
 13 on recreation include reduced access, construction noise, and changes in the visual character of the
 14 area surrounding the recreation sites. Also see Chapters 12, *Terrestrial and Biological Resources*, 17,
 15 *Socioeconomics*, 19, *Transportation*, and 23, *Noise*, for additional detail related to waterfowl/wildlife,
 16 aesthetics/visual resources, transportation, and noise, respectively.

17 **Clarksburg Boat Launch (Fishing Access)**

18 The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the
 19 proposed Intake 3 site. Access to the Clarksburg Boat Launch would be maintained using County
 20 Road E9 (also referred to as County Highway); access would not be expected to be a concern
 21 because most of the construction activity would take place on the east side of the Sacramento River.
 22 On-water access to the fishing site, as well as use of the boat ramp, would not be affected by
 23 construction. Indirect construction noise effects on recreation in the vicinity of the Clarksburg Boat
 24 Launch would last about 4 years with construction of the intake and related facilities primarily
 25 ongoing Monday through Friday for up to 24 hours each day. In addition, because of the relatively
 26 high groundwater level at all intake locations and pumping plant sites, dewatering would be
 27 necessary to provide a dry workspace. Dewatering would also be needed where intake pipelines
 28 cross waterways and irrigation canals east of the Sacramento River. The conveyance pipeline
 29 between Intake 1 and tunnel 1 crosses three canals or ditches. Two of these would be a half mile
 30 south of the facility grounds for Intake 1 (or nearer) and the other would be about 0.4 miles north
 31 northwest of Scribner Road. As discussed in Chapter 3, *Description of Alternatives*, Section 3.6.1,
 32 dewatering would take place 7 days per week and 24 hours per day and would be initiated 1–4
 33 weeks prior to excavation. Dewatering would continue until excavation is completed and the
 34 construction site is protected from areas with high groundwater levels. Construction of the intake in
 35 this area would be long term and would also substantially alter the recreation experience due to
 36 changes in views from the boat launch/fishing access site.

37 **Stone Lakes National Wildlife Refuge**

38 There will be indirect impacts to private and public use areas within the Stone Lakes NWR. No
 39 public recreation facilities are located on the privately held lands of the NWR (U.S. Fish and Wildlife
 40 Service 2007a). The public use areas of Stone Lakes NWR include the Beach Lake and North Stone
 41 Lake Units of the NWR.

42 Because of the proximity of the alignment and associated construction work areas and borrow/spoil
 43 areas, there could be effects on wildlife viewing and environmental education opportunities within

1 the Stone Lakes NWR. Because construction would primarily occur Monday through Friday, year-
 2 round, there could be temporary effects on wildlife viewing and some environmental education
 3 opportunities that depend on the presence of wildlife. Hiking, interpretation, and some
 4 environmental education opportunities would still be feasible within the NWR; however, the
 5 recreation experience of refuge visitors may be affected by construction noise, potentially resulting
 6 in reduced opportunities for wildlife viewing and visual disruptions.

7 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, mitigation would be
 8 available to address effects on nesting birds and waterfowl populations and greater sandhill crane
 9 near construction areas. In addition, over the longer term of the action alternatives, implementation
 10 of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
 11 wetlands (see BDCP² Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
 12 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
 13 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
 14 benefit sandhill crane and other species. Implementation of CM11 would provide beneficial effects
 15 on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands
 16 in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed
 17 wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*).
 18 The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4
 19 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat
 20 launch facility within the footprint of the North Delta diversion facilities. Permitted activities will
 21 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
 22 hunting, fishing, and boating.

23 ***Georgiana Slough Fishing Access***

24 The Georgiana Slough Fishing Access is directly east of the Alternative 1A tunnel alignment but
 25 would not be affected by underground tunnel construction. A tunnel easement work area,
 26 temporary access road and transmission line are north (upstream) of and on the opposite bank of
 27 the slough. Access to the fishing site would be maintained using Andrus Island Road or a detour. On-
 28 water access to the site, as well as use of the boat ramp, would not be affected by activities
 29 downstream, upstream, or across the river. The northern area of the fishing access is just at the
 30 boundary of the anticipated noise impact area and it would be expected there would be minimal if
 31 any noise disruption at the fishing access site. The tunnel work area across the slough would not be
 32 visible from the fishing access; therefore, it would have no visual effect on the recreation setting or
 33 experience. Boaters upstream of the fishing access would temporarily experience intermittent and
 34 short-term effects from the construction at the tunnel access area. Overall, this is generally not
 35 expected to be an adverse effect in this location because of the intermittent nature of work in this
 36 area and the shorter duration of construction (up to 2 years).

37 ***Cosumnes River Preserve (Private Lands)***

38 While the Cosumnes River Preserve provides opportunities for limited fishing and hunting, hiking,
 39 paddling, wildlife viewing, and environmental education, public access is concentrated around the
 40 visitor center which is located approximately 5 miles east of the alternative alignment. Nearly all
 41 public recreation activities would be outside of the construction impact areas. Construction

² As described in Chapter 1, *Introduction*, Section 1.1, the full Draft EIR/EIS should be understood to include not only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.

1 primarily would take place Monday through Friday, for up to 24 hours per day with dewatering 7
2 days per week and 24 hours per day. Construction noise could affect wildlife viewing and
3 environmental education opportunities for docent guided tours. The recreation experience of
4 visitors may also be adversely affected by construction activities from noise disturbances. As
5 discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, mitigation would be
6 available to address effects on nesting birds and waterfowl populations and greater sandhill crane
7 near construction areas. In addition, over the longer term of the action alternatives, implementation
8 of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
9 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
10 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
11 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
12 benefit sandhill crane and other species. As described above in the Stone Lakes National Wildlife
13 section, implementation of CM11 would provide beneficial effects on recreation opportunities by
14 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system.
15 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
16 bicycling, equestrian use, hunting, fishing, and boating.

17 ***Bullfrog Landing Marina***

18 Containing 43 berths, the Bullfrog Landing marina is on Middle River within the construction impact
19 area surrounding the tunnel/pipeline alignment across Bacon Island. The marina is southeast of the
20 terminus of a permanent access road to a ventilation/access shaft for the tunnel/pipeline and
21 immediately west of a proposed 69 kV transmission line corridor. Vehicular access to the marina
22 would be maintained using Bacon Island Road or a detour, although there may be additional truck
23 traffic on Bacon Island Road. On-water access to the marina and use of the marina's boating facilities
24 would not be affected by tunnel/pipeline construction activities. Boating opportunities would still
25 be feasible at the marina during construction of the tunnel/pipeline and permanent access road.
26 Construction of the access roads and installation of the transmission lines would both take up to 2
27 years, which would be considered a short-term effect (2 years or less). During construction it is
28 possible that marina users would be disturbed by noise and visual disruptions related to the
29 construction activities. Marina visitors arriving from upstream, who would pass by construction of
30 the new access road, may encounter construction noise, as would any anglers on the river between
31 the marina and the construction area.

32 ***Whiskey Slough Harbor Marina***

33 Whiskey Slough Harbor Marina on Whiskey Slough provides 80 berths, a launch ramp, pump-out
34 facilities and camping at the terminus of Whiskey Slough. The marina is immediately north of a
35 portion of permanent access road. Vehicular access to the marina would be maintained using West
36 Whiskey Slough Road or a detour. On-water access to the marina would also be maintained, and use
37 of the marina's boating facilities would not be affected by construction of the access road. Boating
38 and camping opportunities would still be available at the marina during construction. Construction
39 of the roadway would take less than 2 years (short term). Visual, access, and noise disturbances for
40 boaters and others using the marina facilities, including campers, would not be considered adverse,
41 because of the temporary and short-term duration.

1 **Clifton Court Forebay**

2 Clifton Court Forebay offers public fishing and hunting access from Lindeman Road on the west side
3 of the forebay. There are no recreation facilities at the forebay; motorized boating, camping, and
4 swimming are not allowed. Most fishing and hunting use at the forebay likely occurs along the west
5 and south areas of the forebay, although some visitors walk or ride a bike around the forebay to
6 reach other fishing and hunting locations.

7 Access to the forebay would be maintained using Clifton Court Road or a detour. Construction of the
8 Byron Tract forebay, control structures, and use of related spoils/borrow area and installation of
9 transmission lines would take up to 2 years. Construction would primarily occur Monday through
10 Friday for up to 24 hours per day. Construction noise could deter fish and wildlife during and after
11 construction periods, affecting fishing and other recreational opportunities. The opportunities for
12 visitors who use the southern part of the forebay would be affected the most because of its
13 proximity to the proposed construction areas. Construction of the pumping plant approach canal
14 segments would occur at a later time than the forebay and control structures—up to 3 years later—
15 and would last for up to 1 year. The effects of this construction would be less than the initial forebay
16 construction but could have similar short-term effects on recreation at the southern extent of the
17 Clifton Court Forebay. Construction during waterfowl hunting season would affect recreational
18 hunting in the area to the degree that use is temporarily degraded. As discussed in Chapter 12,
19 *Terrestrial Biological Resources*, Section 12.3.3.2, mitigation would be available to address the effect
20 on nesting birds and waterfowl populations near construction areas. In addition, over the longer
21 term of the action alternatives, implementation of CM3 and CM11 will result in protection and
22 enhancement of at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4,
23 *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat
24 conditions for covered species and native biodiversity, including benefiting migratory waterfowl.
25 Under CM3, the protection of cultivated lands will also benefit sandhill crane and other species. As
26 described above in the Stone Lakes National Wildlife section, implementation of CM11 would
27 provide beneficial effects on recreation opportunities by allowing recreation to occur on
28 approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will include
29 hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting,
30 fishing, and boating.

31 The construction areas for the new facilities would likely not be visible from the main public forebay
32 access point; however, visitors at the southern part of the forebay would be able to see the
33 construction areas, which could affect the recreation setting and detract from their recreation
34 experiences. Construction noise and the resulting reduced opportunities for fishing or hunting could
35 also affect the ambient recreation setting in the vicinity of construction activities and degrade the
36 recreation experience.

37 **Other Recreation Opportunities**

38 *On-Water Recreation*

39 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
40 construction impact area for Intakes 1 and 2. Similarly, Lazy M Marina and Rivers End Marina &
41 Storage sites are not within the construction noise impact area for the Byron Tract Forebay and
42 related facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing
43 sites fall outside of the impact area for noise, the overall recreation experience upstream or
44 downstream of these sites may fall within the noise impact area and could experience diminished

1 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
2 over the course of construction. Overall, construction activities associated with the proposed water
3 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
4 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
5 further limited primarily to June 1 through October 31 each year. Although dewatering would take
6 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
7 construction could reduce the abundance of fish and other wildlife in recreation areas in the vicinity
8 of the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
9 recreationists to experience a change recreation in recreation opportunities.

10 *Campgrounds*

11 Nighttime construction activities would require the use of bright lights that would negatively affect
12 nighttime views of and from the work area. This would affect any overnight camping at the
13 recreation sites and areas discussed above, although day use areas that close at sunset would not be
14 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
15 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.2,
16 another nighttime effect on recreation would be construction noise levels that could adversely affect
17 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
18 construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and NOI-1b
19 would be available to address these effects.

20 *Summary*

21 Construction of Alternative 1A intakes and water conveyance facilities would result in disruption of
22 recreational opportunities that would last from 1 to 5 years. Indirect effects on recreation
23 experiences may occur as a result of impaired access, construction noise, or negative visual effects
24 associated with construction. Although construction may occur year-round and last up to 9 years,
25 construction in the vicinity of identified recreation facilities would last from 1 to 5 years and in-river
26 construction would be primarily limited to June 1 through October 31 each year.

27 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
28 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
29 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
30 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
31 measures, environmental commitments, and conservation measures would provide several benefits
32 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
33 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
34 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
35 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
36 degradation associated with accidental spills, runoff and sedimentation, and dust could have
37 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
38 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
39 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
40 crane, would be implemented by the BDCP proponents where determined necessary for all covered
41 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
42 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
43 *Commitments*, DWR would implement an environmental commitment that would dispose of and
44 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes

1 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
2 of the action alternatives, implementation of CM3 and CM11 will result in protection and
3 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
4 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
5 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
6 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
7 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
8 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
9 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
10 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
11 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
12 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
13 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
14 bicycling, equestrian use, hunting, fishing, and boating.

15 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, identifies a number of mitigation
16 measures that would be available to address construction-related visual effects on sensitive
17 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
18 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
19 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
20 addition, the chapter identifies measures to address longer term visual effects associated with
21 changes to the landscape/visual setting from construction and the presence of new water
22 conveyance features. These include developing and implementing a spoil/borrow and reusable
23 tunnel material (RTM) area management plan (AES-1c), restoring barge unloading facility sites once
24 they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the
25 extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities
26 (AES-1f), and implementing best management practices to implement a project landscaping plan
27 (AES-1g). DWR would also make a commitment to enhance the visual character of the area by
28 creating new wildlife viewing sites and enhancing interest in the construction site by constructing
29 viewing areas and displaying information about the project, which may attract people who may use
30 the recreation facilities to the construction site as part of the visit.

31 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
32 proponents will work with the California Department of Parks and Recreation to help insure the
33 elements of CM1 would not conflict with the elements proposed in DPR's *Recreation Proposal for the*
34 *Sacramento-San Joaquin Delta and Suisun Marsh* (California Department of Parks and Recreation
35 2011d) that would enhance bicycle and foot access to the Delta. This would include the helping to
36 fund or construct elements of the American Discovery Trail and the potential conversion of the
37 abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut Grove.
38 The BDCP project proponents will ensure that the constructed elements of CM1 would not result in
39 physical barriers to implementing the Delta recreation access elements outlined in the DPR
40 proposal. The BDCP project proponents will also work with DPR to determine if some of the
41 constructed elements of CM1 could incorporate elements of the DPR's proposal.

42 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
43 involve preparation of site-specific construction traffic management plans that would address
44 potential public access routes and provide construction information notification to local residents
45 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
46 of access to affected recreation areas as an environmental commitment. Where construction

1 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
2 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
3 construction sites. These would be designed to be safe, pleasant and would integrate with
4 opportunities to view the construction site as an additional area of interest. These physical facilities
5 would be combined with public information, including sidewalk wayfinding information that would
6 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
7 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
8 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
9 congested roadway segments, although this mitigation measure (TRANS-1c) would require
10 cooperation from the affected jurisdictions, and therefore there is no way to guarantee its
11 effectiveness.

12 Chapter 23, *Noise*, Section 23.4.3.2, discusses that construction noise effects could be addressed
13 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
14 implementation of a complaint/response tracking program (NOI-1b), and an environmental
15 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
16 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
17 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
18 viewing the aesthetic amenities of the area.

19 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
20 2 would ensure access to nearby fishing by enhancing formal fishing sites near the proposed water
21 conveyance facilities, and providing adequate signage directing anglers to the formal sites. The Delta
22 offers many alternative recreational opportunities for water-based, water-enhanced, and land-based
23 recreation, all of which would continue to be available for recreationists. However, due to the length
24 of time that construction would occur and the dispersed effects across the Delta, the direct and
25 indirect effects related to temporary disruption of existing recreational activities at facilities within
26 the impact area would be adverse.

27 **CEQA Conclusion:** Construction of Alternative 1A intakes and related water conveyance facilities
28 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
29 years) impacts on well-established recreational opportunities and experiences in the study area
30 because of access, noise, and visual setting disruptions that could result in loss of public use. These
31 impacts would be temporary, but may occur year-round and would occur over the long-term.
32 Mitigation measures, environmental commitments, and BDCP AMMs would reduce these
33 construction-related impacts by implementing measures to protect or compensate for effects on
34 wildlife habitat and species; minimize the extent of changes to the visual setting, including nighttime
35 light sources; manage construction-related traffic; and implement noise reduction and complaint
36 tracking measures. However, the level of impact would not be reduced to less than significant
37 because even though mitigation measures and environmental commitments would reduce the
38 impacts on wildlife, visual setting, transportation, and noise conditions that could detract from the
39 recreation experience, due to the dispersed effects on the recreation experience across the Delta, it
40 is not certain the mitigation would reduce the level of these impacts to less than significant in all
41 instances such that there would be no reduction of recreational opportunities or experiences over
42 the entire study area. Therefore, these impacts are considered significant and unavoidable.
43 However, the impacts related to construction of the intakes would be less than significant.

1 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

2 Construction-related impacts on informal fishing access sites near the proposed water
 3 conveyance facilities, such as along the east bank of the Sacramento River, in the vicinity of the
 4 proposed intakes, in the vicinity of the expanded Clifton Court Forebay, and would be
 5 considered significant because construction would alter the river bank and/or restrict access,
 6 making these sites unusable. To compensate for the loss of these informal sites during
 7 construction, the BDCP proponents will enhance nearby formal fishing access sites, including
 8 partnering with Yolo County to enhance the Clarksburg Fishing Access site on the west bank of
 9 the Sacramento River, with the Sacramento County Department of Regional Parks to enhance
 10 the Cliffhouse Fishing Access site on the east bank of the Sacramento River and the Georgiana
 11 Slough Fishing Access site east of the Sacramento River, and with Contra Costa County to
 12 enhance fishing sites near Clifton Court Forebay, as well as other nearby sites. Prior to
 13 construction of the proposed water conveyance facilities, the BDCP proponents will ensure
 14 adequate signage will be placed at the informal sites that would be directly affected by
 15 construction of the intakes, directing anglers to the formal sites. Upgrading the existing fishing
 16 access sites will be completed prior to beginning construction of the intakes.

17 As part of design of the intakes, the BDCP proponents will ensure that public access to the
 18 Sacramento River, including fishing access, will be incorporated into the design of the intakes.
 19 The access sites will be placed a reasonable distance from the intake to ensure the safety of
 20 recreationists and to compensate for the loss that would occur as a result of constructing the
 21 intakes.

22 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
 23 **Disturbance of Nesting Birds**

24 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 25 Alternative 1A, Impact BIO-75.

26 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 27 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 28 **Transmission Lines and Underground Transmission Lines Where Feasible**

29 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 32 **Sensitive Receptors**

33 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 34 Alternative 1A, Impact AES-1.

35 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 36 **Material Area Management Plan**

37 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 38 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
5 **Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
9 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
13 **Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
17 **Residents**

18 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
21 **Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
25 **to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
33 **Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 12 **Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
 14 waterways in the study area, including direct effects on boat passage related to the creation of
 15 obstructions and associated boat traffic delays, would occur during construction of Alternative 1A.
 16 Construction of the five intakes would involve installation of cofferdams in the waterways and the
 17 use of barges, barge-mounted cranes, or other large waterborne equipment. Temporary barge
 18 unloading facilities would also affect navigation for recreationists.

19 **Intakes**

20 To allow for construction of intakes, cofferdams would be constructed within the river channel. The
 21 cofferdams would vary in size according to intake location, but would range from 740 to 2,440 feet
 22 in length and would extend into the river channel up to 120 feet, depending on location. This would
 23 include a 25-foot buffer zone around each cofferdam. Although boats would be unable to use the
 24 portion of the waterway where construction was occurring, the river in the vicinity of the intake
 25 construction sites would remain open to boat passage at all times. The river is approximately 500–
 26 700 feet wide near the proposed intakes, which would leave most of the channel width
 27 (approximately 380–580 feet) open to boat passage, providing ample room for the boat traffic
 28 observed to occur in the area to pass without difficulty and minimizing possible traffic congestion.

29 Temporary in-water construction zone restrictions would be in place. These measures would
 30 include a speed-restricted zone extending upstream and downstream of river construction areas to
 31 reduce wake and maintain a safe work area in the vicinity of the construction activities. Site-specific
 32 safety features, including determination of the speed-restriction zone, would be developed under
 33 the Mitigation Measure TRANS-1a, which involves the BDCP proponents developing and
 34 implementing site-specific construction traffic management plans, including waterway navigation
 35 elements. Within the speed-restricted zones around the intake areas, high-speed recreation (e.g.,
 36 waterskiing, wakeboarding, and tubing) would effectively be eliminated. Mitigation Measure
 37 TRANS-1a also involves providing notification of construction activities in waterways to ensure
 38 information about construction site location(s), construction schedules, and identification of no-
 39 wake zone and/or detours is posted at Delta marinas and public launch ramps.

1 Direct effects on boat passage and navigation on the Sacramento River would result from
2 construction of the intakes. Effects could include reduced access and delays to boat passage and
3 navigation related to the narrower available river width and temporary reduced-speed zones.
4 However, boat passage volume along the corridor of the Sacramento River where intakes are
5 proposed is low. Water-based recreational activities such as waterskiing, wakeboarding, tubing, or
6 fishing are also low, but effectively would be eliminated in the vicinity of the intakes for the duration
7 of construction (up to 4 years at each intake location). However, implementation of separate, non-
8 environmental commitments as set forth in Appendix 3B, *Environmental Commitments*, relating to
9 the enhancement of recreational access and control of aquatic weeds in the Delta would reduce
10 these effects. Although there is sufficient width in the channel to allow boat passage, boaters could
11 experience minor delays related to construction speed zones. Implementation of mitigation measure
12 TRANS-1a to prepare a transportation management plan, including elements to address waterway
13 navigation and to provide notification of construction activities in waterways would reduce these
14 effects. However, this potential to result in a reduction of recreational navigation opportunities
15 would be considered adverse because, although temporary, the effects would be long term, lasting
16 more than 2 years.

17 ***Temporary Barge Unloading Facilities***

18 Alternative 1A includes six barge unloading facilities to be built on or near the tunnel alignment at
19 riverbank locations about 5–6 miles apart (except on Woodward Canal) (Mapbook Figure 15-1). The
20 facilities would be built on the following waterways: Sacramento River, North Fork Mokelumne
21 River, San Joaquin River, Middle River, and Woodward Canal (which would have two facilities). The
22 facilities would be used to transfer pipeline construction equipment and materials to and from
23 construction sites and would be removed after construction was completed. Construction of the
24 facilities may require partial channel closures and use of equipment within the waterways. All barge
25 facilities would have temporary in-water construction zone restrictions including a speed-restricted
26 zone extending upstream and downstream of construction within the waterway to reduce wake and
27 maintain a safe work area in the vicinity of the construction activities. Site-specific safety features,
28 including determination of the speed-restriction zone, and notification procedures would be
29 developed under Mitigation Measure TRANS-1a that involves the BDCP proponents developing and
30 implementing site-specific transportation management plans, including waterway navigation
31 elements. Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding,
32 and tubing) would effectively be eliminated. Specific effects that could occur at each barge unloading
33 facility site are discussed below. Effects on recreation in the vicinity of these sites would last
34 approximately 5 years and would be considered a long-term effect. Construction would primarily
35 occur Monday through Friday and last for up to 24 hours per day. In-river construction primarily
36 would be limited to June 1 through October 31 each year. However, the barges would remain in
37 place for the duration of the construction period and still present a temporary barrier to boats and
38 related recreation. Post-construction, temporary barges would be removed and the ability to
39 navigate rivers and channels would return to previous conditions.

40 ***Sacramento River***

41 The Sacramento River barge unloading facility would be about 1 mile downstream from Georgiana
42 Slough and Walnut Grove and would occupy about 800 feet of the east riverbank. The river channel
43 is relatively narrow at this location (about 300 feet wide, as compared to 500–700 feet wide at the
44 intake locations). Therefore, the barge facility and barge operations at this location could occupy a
45 substantial portion of the river, constricting boat passage. Peak boat traffic volume may be high at

1 this location. Because boat traffic would be confined to a limited portion of the channel, increased
2 boat traffic congestion is likely to occur during peak use (primarily summer weekends).

3 *North Fork Mokelumne River*

4 The North Fork Mokelumne River barge unloading facility would be about 3 miles upstream
5 (northeast) of the junction with the South Fork Mokelumne River and would occupy about 2,000
6 feet of the west riverbank. The river channel is about 300 feet wide at this location. Therefore, the
7 barge facility and barge operations at this location could occupy a substantial portion of the river,
8 constricting boat passage. Although this waterway connects the Walnut Grove area with the lower
9 Mokelumne River and San Joaquin River, there are no boating facilities or recreation sites on the
10 river itself, and the nearest marinas are about 3 miles away. Therefore, although boat traffic would
11 be confined to a limited portion of the channel, increases in boat traffic congestion would likely be
12 minor. The North Fork Mokelumne River in the vicinity of the barge unloading facility is a known
13 location for waterskiing and wakeboarding.

14 *San Joaquin River*

15 The San Joaquin River barge unloading facility would be on the south side of Venice Island, on a wide
16 bend in the river east of the Deep Water Ship Channel, and would occupy about 2,000 feet of the
17 north riverbank. The river channel is more than 1,100 feet wide at this location. Therefore, even if
18 the barge facility and barge operations at this location occupied a substantial portion of the river,
19 several hundred feet of unimpeded channel width would remain, and there would be little effect on
20 boat passage. Boats using the ship channel could avoid the barge unloading facility entirely.

21 *Middle River*

22 The Middle River barge unloading facility would be on the east side of Bacon Island and would
23 occupy about 1,000 feet of the west riverbank, about 2 miles south of Connection Slough. The river
24 channel is about 400 feet wide at this location. Therefore, the barge facility and barge operations at
25 this location could occupy a substantial portion of the river, constricting boat passage. Peak boat
26 traffic volume may be high at this location. Because boat traffic would be confined to a limited
27 portion of the channel, increased boat traffic congestion could occur during peak use times
28 (primarily summer weekends). However, boaters would also have the option of bypassing the barge
29 facility by making a slight detour to the east, around the opposite (east) side of Mildred Island, using
30 Empire Cut and Lotham Slough to travel north or south through this area of the Delta. This available
31 detour, coupled with signage and information outreach to be implemented as part of mitigation
32 measure TRANS-1a that involves the BDCP proponents developing and implementing site-specific
33 transportation management plans, including waterway navigation elements and providing
34 notification of construction in waterways would likely minimize congestion and delay at this barge
35 facility site.

36 *Woodward Canal*

37 The two Woodward Canal barge unloading facilities would be on the north and south sides of the
38 canal, on Woodward Island and Victoria Island, respectively, and would occupy about 1,000 feet of
39 the canal banks, about 0.5–0.75 mile east of Old River. The canal is about 350 feet wide at this
40 location. Accounting for the potential for both barge facilities to be built and in operation at the
41 same time, the barge facilities and barge operations at this location would occupy the entire or
42 nearly the entire canal, constricting or preventing boat passage. Peak boat traffic volume is likely

1 high at this location; therefore, if boat passage continued, increased boat traffic congestion could
2 occur during peak use (primarily summer weekends) because boat traffic would be confined to a
3 limited portion of the channel. The Woodward Canal in the vicinity of the barge unloading facilities
4 is a known location for waterskiing and wakeboarding.

5 Construction of temporary barge unloading facilities would result in adverse effects to boat passage
6 and navigation including the creation of obstructions to boat passage and associated boat traffic
7 delays and temporary partial channel closures that could impede boat movement and eliminate
8 recreational opportunities. In waterways where waterskiing, wakeboarding, and tubing occur,
9 recreation opportunities in the vicinity of the barge unloading facilities would be eliminated during
10 construction. These effects would be reduced with the implementation of Mitigation Measure
11 TRANS-1a that involves the BDCP proponents developing and implementing site-specific
12 transportation management plans, including waterway navigation elements and providing
13 notification of construction activities in waterways. Additionally, BDCP proponents would
14 contribute funds for the construction of new recreation opportunities as well as for the protection of
15 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
16 proponents would also assist in funding the expansion of state recreation areas in the Delta as
17 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
18 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
19 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
20 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
21 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
22 recreational opportunities within the project area by providing recreation opportunities within the
23 same general area within the Delta as where the loss has occurred. These commitments are further
24 described in Appendix 3B, *Environmental Commitments*.

25 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
26 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
27 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
28 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
29 Agriculture Research Service, University of California Cooperative Extension Weed Research and
30 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
31 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
32 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
33 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
34 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
35 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
36 Enhanced ability to control these invasive vegetation would lead to increased recreation
37 opportunities which would compensate for the loss of recreational opportunities within the project
38 area by providing a recreational opportunity downstream/upstream in the same area for the same
39 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
40 *Commitments*.

41 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
42 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
43 proponents would also ensure through various outreach methods that recreationists were aware of
44 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
45 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be

1 considered adverse because of the reduced recreation opportunity and experiences expected to
2 exist near construction activity.

3 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
4 construction of the intakes and temporary barge unloading facilities. Impacts would last
5 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
6 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
7 closures could impede boat movement and eliminate recreational opportunities. In waterways
8 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
9 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
10 development and implementation of site-specific construction traffic management plans, including
11 specific measures related to management of barges and stipulations to notify the commercial and
12 leisure boating communities of proposed barge operations and in-water construction activities in
13 the waterways. Construction of the operable barrier would last for 2 years (short-term) and would
14 not result in long-term reduction of recreation opportunities. This would be a less-than-significant
15 impact on recreational navigation on Old River.

16 While the environmental commitments would reduce impacts on water-based recreation (water-
17 skiing, wakeboarding, tubing) in these areas by creating alternative recreation opportunities for
18 those eliminated during construction, these impacts would be long-term and therefore considered
19 significant and unavoidable.

20 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
21 **Plan**

22 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
23 Impact TRANS-1.

24 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
25 **Result of Constructing the Proposed Water Conveyance Facilities**

26 **NEPA Effects:** Sport fishing in the study area is a year-round activity, and includes bank fishing and
27 boat fishing for a number of fish including striped bass, largemouth bass; green and white sturgeon;
28 Chinook salmon, and American shad. Striped bass, American shad, and largemouth bass are all sport
29 fish species that were introduced into rivers for that purpose. Striped bass and largemouth bass are
30 regulated by CDFW for recreational fishing. Fishing likely occurs in all of the waterways where
31 water intake and barge unloading facilities would be located.

32 Under Alternative 1A, construction of the water intakes and placement and use of barge facilities
33 during tunnel/pipeline construction would result in temporary water quality effects (e.g., turbidity,
34 accidental spills, disturbance of contaminated sediments); elevated underwater noise conditions
35 (associated with pile driving and other construction activities); fish exposure to stranding and direct
36 physical injury; and temporary exclusion or degradation of spawning and rearing habitats. These
37 temporary construction-related effects would last for up to 5 years in the vicinity of intake and
38 barge unloading facilities and could alter fish populations such that recreational fishing
39 opportunities in the study area would be affected. Weekday construction would reduce the amount
40 of fish and other wildlife in recreation areas in the vicinity of the intakes, resulting in decreased
41 recreation opportunities related to wildlife and fish, causing recreationists to experience a changed
42 recreation setting.

1 Construction of the approach canal and Byron Tract Forebay would not affect fish-accessible
2 waterways and therefore would not affect sport fish. As a result, these construction activities would
3 not result in adverse effects on sport fishing opportunities at Clifton Court Forebay.

4 Overall, as discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2, Sacramento River
5 and Delta region fish populations would not be affected by changes to localized water quality
6 conditions, underwater noise, fish stranding or other physical disturbances, or reduced habitat
7 areas such that recreational fishing opportunities would be substantially reduced during
8 construction. BDCP environmental commitments to prevent water quality effects include
9 environmental training; implementation of stormwater pollution prevention plans, erosion and
10 sediment control plans, hazardous materials management plans, and spill prevention, containment,
11 and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations
12 plan (Appendix 3B, *Environmental Commitments*). Mitigation Measures AQUA-1a and AQUA-1b
13 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
14 driving. Additionally, the environmental commitments to implement a fish rescue plan and the barge
15 operations plan (Appendix 3B, *Environmental Commitments*) would substantially minimize adverse
16 effects from cofferdam and other in-water construction-related disturbances. Although fish
17 populations likely would not be affected to the degree that fishing opportunities would be
18 substantially reduced, construction conditions would introduce noise and visual disturbances that
19 would affect the recreation experience for anglers.

20 Although construction noise would be temporary, and primarily be limited to Monday through
21 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
22 sites. Visual setting disruptions could distract from the recreation experience including on
23 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
24 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
25 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
26 measures would also be available to address construction-related visual effects on sensitive
27 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
28 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
29 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
30 addition, the chapter identifies measures to address longer term visual effects associated with
31 changes to the landscape/visual setting from construction and the presence of new water
32 conveyance features. These include developing and implementing a spoil/borrow and RTM area
33 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
34 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
35 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
36 implementing best management practices to implement a project landscaping plan (AES-1g).
37 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
38 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
39 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
40 anglers with alternative bank fishing access sites further removed from areas affected by
41 construction. This effect would not be adverse.

42 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
43 construction activities would be considered less than significant because the BDCP would include
44 environmental commitments to prevent water quality effects, including environmental training;
45 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
46 hazardous materials management plans, and spill prevention, containment, and countermeasure

1 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 2 *Environmental Commitments*); and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 3 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 4 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 5 that there would be no long-term reduction of local fishing opportunities and experiences. This
 6 impact would be less than significant.

7 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

8 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 9 1A.

10 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 11 **of Pile Driving and Other Construction-Related Underwater Noise**

12 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 13 Alternative 1A, Impact AQUA-1.

14 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 15 **and Other Construction-Related Underwater Noise**

16 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 17 Alternative 1A, Impact AQUA-1.

18 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 19 **Construction**

20 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

21 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 22 **Tracking Program**

23 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

24 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 25 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 26 **Transmission Lines and Underground Transmission Lines Where Feasible**

27 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 30 **Sensitive Receptors**

31 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 34 **Material Area Management Plan**

35 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a
17 Result of the Operation of the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Operation of Alternative 1A may result in changes in entrainment, spawning, rearing
19 and migration. However, in general, effects on (non-covered) fish species that are popular for
20 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
21 recreational fishing. While there are some significant impacts to specific non-covered species, as
22 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2, they are typically limited to
23 specific rivers and not the population of that species as a whole. The effect is not adverse because it
24 would not result in a substantial long-term reduction in recreational fishing opportunities

25 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
26 operation of Alternative 1A would be considered less than significant because any impacts to fish
27 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
28 would not impact the species population of any popular sportfishing species overall.

29 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial
30 Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-
31 of-Delta Reservoirs**

32 **NEPA Effects:** Generally, the peak recreation season at the reservoirs falls between May to
33 September. Reservoirs are usually at maximum storage volume and surface water elevation in May
34 and decline over the course of the summer through September. This analysis compares the results of
35 the CALSIM II end-of-September reservoir water surface elevations because typically there are more
36 instances in which reservoir elevations fall below key surface water elevation thresholds (hereafter
37 referred to as “recreation thresholds”) (i.e., number of years out of the 82 simulated when the
38 September end-of-month storage is less than the recreation elevation threshold). Under these

1 conditions, the overall usable reservoir area is reduced and previously submerged islands or shoals
2 may become exposed and affect boating safety. In addition, shoreline recreation becomes degraded.

3 For each reservoir, a specific water surface level elevation was selected as the “recreation
4 threshold,” an initial indicator to represent constrained boating conditions for the comparison of the
5 BDCP action alternative conditions to Existing Conditions (CEQA baseline), ELT, and the No Action
6 Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a and
7 Table 15-12b). Additional consideration of other factors is discussed, for instance where the
8 modeling results show substantial changes to reservoir levels that may affect recreation at a
9 particular location (generally, this occurs for San Luis Reservoir). Also see Chapter 3, *Description of*
10 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
11 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

12 **Existing Conditions (CEQA Baseline) Compared to Alternative 1A (2060)**

13 As shown in Table 15-12a and Table 15-12b, under Alternative 1A there would be from 1 to 20
14 additional years when end-of-September elevations result in the recreation thresholds being
15 exceeded at the reservoirs relative to the existing condition. These represent a greater than 10%
16 increased exceedance of the reservoir thresholds at Trinity Lake, Shasta Lake, Folsom Lake, and San
17 Luis Reservoir. However, as discussed under Section 15.3.1, *Methods for Analysis*, these changes in
18 SWP/CVP reservoir elevations are caused by sea level rise, climate change, and operation of the
19 alternative. It is not possible to specifically define the exact extent of the changes due to
20 implementation of the action alternative using these model simulation results. Thus, the precise
21 contributions of sea level rise and climate change to the total differences between Existing
22 Conditions and Alternative 1A cannot be isolated in this comparison. Please refer to the comparison
23 of the No Action Alternative (2060) to Alternative 1A (2060) for a discussion of the potential effects
24 on end-of-September reservoir and lake elevations attributable to operation of Alternative 1A.

1 **Table 15-12a. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-of September Elevations below**
 2 **Recreation Thresholds) for BDCP Alternatives**

BDCP Alternative	Recreation Threshold ^a									
	Years ^b	Trinity Lake			Shasta Lake			Lake Oroville		
		<2,270 ft elevation			<967 ft elevation			<700 ft elevation		
	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)	
Existing Condition (CEQA)	21			17			17			
No Action (2060)	43	22		29	12		32	15		
Alternative 1A-C (2060)	41	20	-2	27	10	-2	18	1	-14	
Alternative 2 A-C (2060)	43	22	0	29	12	0	29	12	-3	
Alternative 3 (2060)	41	20	-2	27	10	-2	18	1	-14	
Alternative 4 (2060)										
Scenario H1	40	19	-3	22	5	-7	23	6	-9	
Scenario H2	38	17	-5	25	8	-4	24	7	-8	
Scenario H3	41	20	-2	28	11	-1	29	12	-3	
Scenario H4	40	19	-3	29	12	0	35	18	3	
Alternative 5 (2060)	43	22	0	29	12	0	26	9	-6	
Alternative 6 A-C (2060)	33	12	-10	24	7	-5	22	5	-10	
Alternative 7 (2060)	39	18	-4	27	10	-2	18	1	-14	
Alternative 8 (2060)	34	13	-9	25	8	-4	32	15	0	
Alternative 9 (2060)	39	18	-4	28	11	-1	35	18	3	

^a Recreation thresholds selected for the analysis represent the reservoir surface water elevation at which recreation opportunities become diminished due to restricted access to boat ramps, exposure of previously submerged islands or shoals that affect boater safety, and shoreline degradation.

^b The number of years out of the 82 simulated when the September end-of-month elevation is less than the recreation elevation threshold for the selected BDCP alternative scenario. An elevation less than the recreation threshold indicates occurrences during which recreation opportunities may be diminished (see note a, above).

^c The change values are the number of years of the simulated conditions that the selected alternative differs from the comparison condition (i.e., the Existing Condition or No Action 2060). A positive change would indicate more years with reduced recreation opportunities.

3
4

1 **Table 15-12b. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-of September Elevations below**
 2 **Recreation Thresholds) for BDCP Alternatives**

BDCP Alternative	Recreation Threshold ^a								
	Folsom Lake			New Melones Lake			San Luis Reservoir		
	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (CEQA/NEPA)
Existing Condition (CEQA)	22			9			3		
No Action (2060)	50	28		13	4		9	6	
Alternative 1A-C (2060)	38	16	-12	12	3	-1	15	12	6
Alternative 2 A-C (2060)	44	22	-6	13	4	0	34	31	25
Alternative 3 (2060)	41	19	-9	12	3	-1	17	14	8
Alternative 4 (2060)									
Scenario H1	41	19	-9	13	4	0	20	17	11
Scenario H2	37	15	-13	12	3	-1	47	44	38
Scenario H3	44	22	-6	13	4	0	37	34	28
Scenario H4	47	25	-3	12	3	-1	55	52	46
Alternative 5 (2060)	48	26	-2	12	3	-1	31	28	22
Alternative 6 A-C (2060)	43	21	-7	12	3	-1	67	64	58
Alternative 7 (2060)	51	29	1	13	4	0	48	45	39
Alternative 8 (2060)	49	27	-1	13	4	0	76	73	67
Alternative 9 (2060)	45	23	-5	12	3	-1	29	26	20

^a Recreation thresholds selected for the analysis represent the reservoir surface water elevation at which recreation opportunities become diminished due to restricted access to boat ramps, exposure of previously submerged islands or shoals that affect boater safety, and shoreline degradation.

^b The number of years out of the 82 simulated when the September end-of-month elevation is less than the recreation elevation threshold for the selected BDCP alternative scenario. An elevation less than the recreation threshold indicates occurrences during which recreation opportunities may be diminished (see note a, above).

^c The change values are the number of years of the simulated conditions that the selected alternative differs from the comparison condition (i.e., the Existing Condition or No Action 2060). A positive change indicates more years with reduced recreation opportunities relative to the comparison condition. A negative change indicates fewer years with reduced recreation opportunities relative to the comparison condition.

3

1 **No Action Alternative (2060) Compared to Alternative 1A (2060)**

2 The comparison of Alternative 1A (2060) to the No Action Alternative (2060) condition most closely
3 represents changes in reservoir elevations that may occur as a result of operation of the alternative
4 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
5 *Methodology*). As shown in Table 15-12a and Table 15-12b, operation of Alternative 1A would result
6 in changes in the frequency with which the end-of-September reservoir levels at Trinity Lake, Shasta
7 Lake, Lake Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels
8 identified as water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
9 the CALSIM II modeling results indicate that reservoir levels under Alternative 1A operations would
10 fall below the individual reservoir thresholds less frequently than under No Action Alternative
11 (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity Lake,
12 Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake, and would be considered beneficial
13 effects of Alternative 1A operations. Operation of Alternative 1A would not adversely affect water-
14 dependent or water-enhanced recreation at these reservoirs. Overall, these conditions represent
15 improved recreation conditions under operation of Alternative 1A because there would be fewer
16 years in which end-of-September reservoir levels would fall below the recreation thresholds thus
17 indicating better boating opportunities, when compared to No Action Alternative (2060) conditions.

18 The modeling for San Luis Reservoir indicates there could be up to 6 additional years which the
19 reservoir level would fall below the reservoir boating threshold at the end of September for the
20 Dinosaur Point boat launch. This is a less than 10% change and would not result in a substantial
21 reduction in recreation opportunities or experiences. In addition, at the Basalt boat launch, which is
22 accessible to elevation 340 feet, operations under Alternative 1A would result in only one additional
23 year for which reservoir elevations would fall below the recreation threshold relative to the No
24 Action Alternative (2060) condition. This is also a less than 10% change and would not be
25 considered a substantial reduction in recreation opportunities. Shoreline fishing would still be
26 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
27 would be available. These changes would not be adverse.

28 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
29 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
30 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
31 Alternative 1A (2060) operations would fall below the individual reservoir thresholds less
32 frequently than under No Action Alternative (2060). These changes in reservoir and lake elevations
33 would result in a less-than-significant impact on recreation opportunities and experiences at Trinity
34 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be
35 fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No
36 Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on
37 recreation opportunities and experiences. Operation of Alternative 1A would not substantially affect
38 water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the
39 modeling indicates that reservoir levels could exceed the recreation threshold up to 6 additional
40 years under Alternative 1A operations relative to the No Action Alternative (2060) condition. This is
41 a less than 10% change and is not considered a substantial reduction in recreation opportunities or
42 experiences at this reservoir. Overall, these conditions represent improved recreation conditions
43 under operation of Alternative 1A because there would be fewer years in which end-of-September
44 reservoir levels would fall below the recreation thresholds thus indicating better boating

1 opportunities, when compared to No Action Alternative (2060) conditions. No mitigation is
2 required.

3 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
4 **Result of Maintenance of the Proposed Water Conveyance Facilities**

5 **NEPA Effects:** Intake maintenance, such as painting, cleaning, making repairs, conducting biofouling
6 prevention, conducting corrosion prevention, and maintaining equipment could have a minor effect
7 on boat passage and navigation in the Sacramento River. Repair efforts requiring barges and divers,
8 as well as activities to remove debris and sediment, could cause a temporary impediment to boat
9 movement and result in slowing of Sacramento River boat traffic in the immediate vicinity of the
10 affected intake structure and reduce opportunities for waterskiing, wakeboarding, or tubing in the
11 immediate vicinity of the intake structures. However, boat passage and navigation on the river
12 would still be possible around any barges or other maintenance equipment and these effects would
13 be expected to be short-term (2 years or less). In addition, the areas around the proposed intake
14 locations are not usually used for waterskiing, wakeboarding, or tubing, and many miles of the
15 Sacramento River would still be usable for these activities during periodic maintenance events.

16 Maintenance of intake facilities would result in periodic temporary but not substantial adverse
17 effects on boat passage and water-based recreational activities. Any effects would be short-term and
18 intermittent. Other facility maintenance activities would occur on land and would not affect boat
19 passage and navigation. Implementation of the environmental commitment to provide notification
20 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
21 *Commitments*) would reduce these effects. These effects are not considered adverse.

22 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
23 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
24 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
25 environmental commitment to provide notification of construction and maintenance activities in
26 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
27 Intake maintenance impacts on recreation would be considered less than significant because
28 impacts, if any, on public access or public use of established recreation facilities would last for 2
29 years or less. Mitigation is not required.

30 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
31 **Result of Maintenance of the Proposed Water Conveyance Facilities**

32 Conveyance facility maintenance may include painting, landscaping, equipment replacement, and
33 mechanical repairs that would be short-term and intermittent and would not affect recreation
34 opportunities. Maintenance activities for these facilities would be conducted within the individual
35 facility right-of-way, which does not include any recreation facilities or recreation use areas. In
36 addition, there would be no public recreation use of the new facilities. Maintenance would not result
37 in any significant noise that would affect nearby recreational opportunities. Therefore, there would
38 be no effects on recreation opportunities as a result of maintenance of the proposed water
39 conveyance facilities.

40 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
41 would not result in any changes to land-based recreational opportunities. Therefore, there would be
42 no impact. Mitigation is not required.

1 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of** 2 **Implementing Conservation Measures 2-21**

3 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation measures
4 as part of Alternative 1A could have effects related to recreational fishing that are similar in nature
5 to those discussed above for construction, and operation and maintenance of proposed water
6 conveyance facilities. Although similar in nature, the potential intensity of any effects would likely
7 be substantially lower because the nature of the activities associated with implementing the
8 conservation measures would be different—less heavy construction equipment would be required
9 and the restoration actions would be implemented over a longer time frame than CM1. Potential
10 effects from implementation of the conservation measures would be dispersed over a larger area
11 and would generally involve substantially fewer construction and operation effects associated with
12 built facilities. Additionally, overall, the habitat restoration and enhancement conservation
13 measures would be expected to result in long-term benefits to aquatic species. Additional discussion
14 related to the individual conservation measures is provided below.

15 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
16 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
17 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
18 improvements and flow management facilities, would be implemented in four phases starting with
19 plan implementation and continuing to approximately 2063. CM2 would reduce migratory delays
20 and loss of adult salmon, steelhead, and sturgeon at Fremont Weir and other structures; enhance
21 rearing habitat for Sacramento River Basin salmonids; enhance spawning and rearing habitat for
22 Sacramento splittail; and improve food sources for delta smelt downstream of the bypass. To
23 achieve this, CM2 includes modifications to the Yolo Bypass that, in balance with existing uses,
24 would benefit covered fish by increasing the frequency, duration, and magnitude of floodplain
25 inundation and improving fish passage.

26 Yolo Bypass fishery enhancement would be achieved with site-specific projects to construct fish
27 passage improvements and facilities to introduce and manage additional flows for seasonal
28 floodplain habitat. Prior to construction for each project, the preparatory actions would include
29 interagency coordination, feasibility evaluations, site or easement acquisition, modifications to
30 agricultural practices, development of site-specific plans, and environmental compliance.

31 The YBFEP would propose a balance between uses of the Yolo Bypass such as flood protection,
32 agriculture, endangered terrestrial species habitat, fisheries habitat, the Yolo Natural Heritage
33 Program, and managed wetlands habitat as described in existing state and federal land management
34 plans associated with the Yolo Bypass Wildlife Area and existing conservation easements on private
35 land.

36 Noise and the physical footprint associated with CM2 physical modifications would temporarily
37 affect the quality and access of fishing opportunities in the affected areas. The maximum extent of
38 inundation in the Yolo Bypass would not increase from current conditions, but the frequency and
39 duration of inundation events would increase. This modification in operations would have an
40 adverse affect on onshore fishing opportunities resulting from reduced access to the popular deeper
41 channels due to an increased floodplain footprint in the Yolo Bypass Wildlife Area. Two inundation
42 targets have been proposed, which would attempt to inundate 7,000-10,000 acres from November
43 to May, or 17,000 acres from December through February, every year for 50 years. This
44 conservation measure was designed, in part, to improve habitat for covered fish species, including

1 Chinook salmon, green and white sturgeon, and steelhead. These habitat improvement elements
2 would lead to increased populations of targeted fish species, which over time, could have a
3 beneficial effect on recreational fishing opportunities. Non-native fish populations may be reduced.
4 Thus, to the extent that access is available to anglers, the fishing experience for native sport species
5 benefiting from this measure would improve based on hypothetical higher catch rates.
6 Environmental commitments would be available to reduce the effects of inundation on fishing
7 opportunities.

8 CM4 would provide for the restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
9 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
10 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. The
11 extent of restored tidal habitat includes a contiguous habitat gradient encompassing restored
12 shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal marsh plain habitat, and
13 adjoining transitional upland habitat. Areas to be restored would be modified by breaching and
14 lowering levees, constructing new or modified levees to protect adjacent areas from flooding,
15 connecting remnant sloughs or channels to improve circulation, and modifying ground elevations to
16 reduce effects of subsidence. Tidal habitat restoration activities would lead to temporary decreases
17 in boat and onshore fishing opportunities and quality due to the physical footprint, noise, odors, and
18 other conditions created by site preparation and earthwork activities, including channel and bank
19 modification in restoration areas. Tidal habitat restoration could permanently disrupt existing
20 points of fishing access, eliminating recreational opportunities. Depending on the extent of
21 recreational access granted to the public in new tidal habitat areas, however, this measure could
22 also support expanded opportunity for shore-based and boat fishing. This conservation measure
23 was designed, in part, to improve habitat for covered fish species, including Chinook salmon, green
24 and white sturgeon, river and Pacific lamprey, and steelhead. CM4 would improve fish habitat which
25 would be expected to lead to increased populations of targeted fish species, which over time, would
26 benefit fishing experience associated with these and other target species that benefit from restored
27 tidal habitat.

28 Another guiding principle in the design of CM4 is the limitation of environmental conditions that
29 favor nonnative predator fish species, including striped bass. Predator removal measures would be
30 highly localized and would not appreciably decrease Delta-wide abundance of predatory game fish
31 (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2). The recreational experience
32 associated with fishing for these species would not be expected to be substantially reduced. On
33 balance, it is anticipated that CM4 would have a minor positive effect on the fishing experience in the
34 Delta region.

35 CM5 provides for the restoration of 1,000 acres of seasonally inundated floodplain habitat within
36 the Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
37 floodplain restoration could occur along channels in many locations in the north, east, and/or south
38 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
39 most promising opportunities for large-scale restoration are in the south Delta along the San
40 Joaquin, Old, and Middle Rivers channels. While temporary earthwork and site preparation
41 measures could temporarily limit recreational access and interfere with the quality of fishing in
42 restoration areas, this measure would result in an increase in boat fishing opportunities as a result
43 of improvements in riparian habitat for a number of fish species and increased areas for boat
44 navigation. Similar improvements may also exist for onshore fishing, though current points of access
45 may be eliminated following implementation of restoration activities.

1 Within the first 40 years of Plan implementation, a total of 10,000 acres of seasonally inundated
2 floodplain would be restored under Alternative 1A. Seasonally inundated floodplain restoration
3 could occur along channels in many locations in the north, east, and/or south Delta. These
4 restoration measures would result in a further increase in onshore and boat fishing opportunities
5 due to improvements in riparian habitat for fish; however, existing points of access may be modified
6 or disrupted.

7 CM6 would create benches on the outboard side of levees or create setback levees. Site preparation
8 and earthwork associated with the construction of these areas and potential access restrictions
9 would lead to temporary or permanent decreases in boat and onshore fishing quality and
10 opportunities. However, CM6 was designed, in part, to improve habitat for covered fish species,
11 including Chinook salmon, sturgeon, and steelhead. CM6 would improve the fishing experience
12 associated with these and other target species that benefit from enhanced channel margin habitat.
13 Another guiding principle in the design of this measure is the limitation of environmental conditions
14 that favor nonnative predator fish species, including striped bass. The recreational experience
15 associated with fishing for these species would be reduced by this measure. After 20 years of
16 implementation, the BDCP would cumulatively enhance 10 miles of channel margin habitat. After 30
17 years, this measure would cumulatively enhance 20 miles of channel margin. This measure would
18 modify channel geometry and restore riparian, marsh, and mudflat habitats along existing levees. On
19 balance, it is anticipated that because of these habitat improvements and expected increase in
20 targeted fish populations, this measure would make a minor improvement to the fishing experience
21 in the Delta region.

22 CM7 would restore 1,100 acres of riparian habitat in the first 15 years and up to 5,000 acres in the
23 late long-term. Areas chosen for implementation of this measure would be associated with
24 restoration and enhancement activities associated with CM4, CM5, and CM6. Restoration of riparian
25 habitat would support fish habitat by increasing the input of organic material and by increasing the
26 extent of shaded riverine aquatic (SRA) cover. By year 40 of implementation, the BDCP would
27 cumulatively restore 5,000 acres of riparian habitat. While construction activities associated with
28 this component may temporarily or permanently restrict some access for anglers and create
29 temporary conditions less favorable for fishing activities, this measure would improve fish habitat,
30 which would be expected to result in higher populations of targeted species and lead to an enhanced
31 fishing experience.

32 CM11 would provide beneficial effects on fishing opportunities by allowing recreation to occur on
33 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
34 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
35 4, Section 4.2.3.9.2 *Recreation*). The reserve system would update one boating facility, as well as a
36 new boat launch facility within the footprint of the North Delta diversion facilities.

37 CM12 would minimize adverse effects of methylmercury on covered fish species, including white
38 sturgeon and North American green sturgeon, and Sacramento splittail. This measure, if successful
39 in reducing predation caused as a byproduct of methylmercury and improving fish health, would
40 support an enhanced fishing experience for onshore and boat-based anglers.

41 CM13 would control nonnative aquatic vegetation including Brazilian waterweed, water hyacinth,
42 and other nonnative submerged and floating aquatic vegetation in BDCP tidal habitat restoration
43 areas. Site-specific conditions and the intended goal would dictate the specific method of removal.
44 This measure is hypothesized to reduce predation mortality on covered species (juvenile salmon,

1 steelhead, and splittail) by reducing habitat for nonnative predatory fish and by increasing turbidity
2 levels. Increased turbidity could also support delta and longfin smelt foraging. Control of nonnative
3 aquatic vegetation could also support access to additional rearing habitat for covered species, as
4 well as increased food availability stemming from greater light levels for phytoplankton growth.
5 Operations associated with vegetation control, particularly mechanical removal, would
6 intermittently and temporarily affect the quality of fishing. However, this measure would increase
7 opportunities for onshore and boat fishing for species that are hampered by the presence of
8 excessive nonnative vegetation. While these activities would reduce the fishing experience related to
9 nonnative predatory fish, overall these efforts would not appreciably reduce Delta-wide abundances
10 of predatory game fish (i.e., largemouth bass, striped bass) and populations would not be
11 diminished to the extent that fishing opportunities would be adversely affected (refer to Chapter 11,
12 *Fish and Aquatic Resources*, Section 11.3.4.2).

13 CM14 would maintain dissolved oxygen (DO) levels above levels that impair covered fish species in
14 the Stockton Deep Water Ship Channel when covered species are present. The BDCP would operate
15 and maintain an oxygen aeration facility in the Stockton Deep Water Ship Channel to increase DO
16 concentrations. By improving conditions for covered and game fish species, this measure would
17 increase opportunities for onshore and boat fishing activities.

18 CM15 would reduce local effects of predators on covered fished species by conducting predator
19 control in areas with high predator density. Predator *hot spots* would be identified and control
20 methods would be adopted including the removal of predator hiding spots, modification of channel
21 geometry, targeted removal of predators, and other focused methods as dictated by site-specific
22 conditions and the intended outcome or goal. Preference for which hot spots to address would be
23 given to areas of high overlap with covered fish species, such as migratory routes or spawning and
24 rearing habitats. Predator control would decrease opportunities for onshore and boat fishing for
25 species targeted for removal but would improve fishing opportunities for game species benefiting
26 from reduced predation. If implementation includes a relaxation of regulations relating to bag limits
27 or size restrictions associated with predatory species, this measure would carry a beneficial effect
28 for anglers targeting these species as well. Overall, as for other CMs targeting predator species, these
29 efforts would not appreciably reduce Delta-wide abundances of predatory game fish such that
30 recreational fishing would be adversely affected (refer to Chapter 11, *Fish and Aquatic Resources*,
31 Section 11.3.4.2).

32 CM16 involves nonphysical fish barriers at the junction of channels with low survival of
33 outmigrating juvenile salmonids to deter fish from entering these channels. Nonphysical fish barrier
34 placement locations would include the Head of Old River, the Delta Cross Channel, and Georgiana
35 Slough, and could possibly include Turner Cut, Columbia Cut, the Delta-Mendota Canal intake, and
36 Clifton Court Forebay. Installation of these barriers could temporarily limit fishing activities by
37 creating noise and necessitating a physical footprint in existing fishing areas. This measure would
38 decrease opportunities for onshore and boat fishing in some channels but would support overall
39 native fish populations, resulting in a mixed, but minimal, effect on fishing opportunities across the
40 Delta region.

41 To address the illegal harvest of covered species across the study area, under CM17, the BDCP
42 Implementation Office would contribute funds directly to the CDFW Delta-Bay Enhanced
43 Enforcement Program to hire and equip additional staff to improve enforcement against poaching of
44 covered species. The program currently has a 10-warden squad; the BDCP would provide funds to
45 hire and equip 23 additional staff, including 17 game wardens and 6 supervisory and administrative

1 staff, to increase enforcement of fishing regulations. While this measure would curb illegal fishing
2 activities and could result in greater regulatory burdens for law-abiding anglers as a result of
3 increased inspection frequency, it would increase opportunities for a wider number of individuals
4 through the enforcement of bag limits.

5 CM18 would establish new conservation propagation programs and expand the existing program for
6 delta and longfin smelt. This measure would include development of a delta and longfin smelt
7 conservation hatchery by USFWS. The specifications and operations of this facility have not been
8 developed. The final selection of a location for the facility will involve additional environmental
9 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
10 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20).
11 One site is northwest of the city limits and could be used for a supplementation production facility.
12 This site is not near any existing well-established recreation sites or opportunities and is
13 approximately 1 mile from the Sacramento River such that future construction and operation
14 activities would not be expected to affect water-based recreation opportunities and experiences.
15 The other site is a former Army Reserve on the west river bank, south of the city limits, that would
16 be developed as a genetic refuge and research facility. Construction at this site could affect
17 recreation activities and experiences at the Delta Marina Yacht Harbor, immediately north of the
18 site, and boating (including boat fishing) on the Sacramento River, depending on noise levels and the
19 degree of visual disturbances. Additional permitting and environmental documentation would be
20 needed to implement this conservation measure once facility designs and funding are available.
21 Overall, implementation of CM18 would not be expected to have an adverse effect on fishing
22 opportunities because construction of the facility would be anticipated to last 2 years or less (short
23 term) and operation of the facility would not be expected to affect recreational fishing.

24 Under CM19, the BDCP Implementation Office would provide a mechanism for implementing
25 stormwater treatment measures that would result in decreased discharge of contaminants to the
26 Delta. These measures would be focused on urban areas and would fund local government projects
27 to reduce pollutant discharges in stormwater. This conservation measure is intended to reduce the
28 amount of pollution in stormwater runoff entering Delta waterways. These efforts would benefit
29 aquatic species, including sport fish populations, in the study area. There would be no adverse effect
30 on recreational fishing.

31 Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive
32 Species Program designed to implement actions to prevent the introduction of new aquatic invasive
33 species and reduce the spread of existing aquatic invasive species via recreational watercraft,
34 trailers, and other mobile recreational equipment used in aquatic environments in the study area.
35 The program would consist of two primary elements targeting recreational boaters: education and
36 outreach, and watercraft inspection. Education and outreach printed materials and interpretive
37 displays would provide information regarding the presence and range of existing aquatic invasive
38 species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive
39 species spreading within the study area, and the risk of new aquatic invasive species introductions.
40 The watercraft inspection would involve development and implementation of a comprehensive
41 inspection program. This type of program involves screening interviews at the point of entry; a
42 comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk
43 during the screening interview; decontamination and/or quarantine or exclusion of watercraft,
44 trailers, and equipment that are not clean, drained, and dry; and optional vessel certification. These
45 efforts would benefit aquatic species, including sport fish populations, in the study area. Although

1 there could be a marginal effect on the recreation experience if boaters are delayed at the boat
2 launch, it is expected that there would be no adverse effect on recreational fishing.

3 Under CM21, the BDCP proponents would provide funding for actions that would minimize the
4 potential for entrainment of covered fish associated with operation of nonproject diversions and
5 also to improve Delta ecosystem health by reducing the diversion of plankton and other nutritional
6 resources into nonproject diversions, thereby benefiting all covered fishes. The number and size of
7 the diversions that would be eliminated are not precisely known because the affected parcels have
8 not yet been identified and moreover, some existing diversions may be remediated before being
9 incorporated into the BDCP preserve system. Unscreened diversions may be handled through
10 removal of individual diversions that have relatively large effects on covered fish species;
11 consolidation of multiple unscreened diversions to a single or fewer screened diversions placed in
12 lower quality habitat; relocation of diversions with substantial effects on covered species from high
13 quality to lower quality habitat, in conjunction with screening; reconfiguration and screening of
14 individual diversions in high quality habitat to take advantage of small-scale distribution patterns
15 and behavior of covered fish species relative to the location of individual diversions in the channel;
16 voluntary alteration of the daily and seasonal timing of diversion operation; or other methods may
17 be implemented if the technical team determines it to be appropriate. Implementation of this
18 measure would likely involve some in-water construction at some sites. These activities would be
19 highly localized and of short duration and would not be expected to result in adverse effects on
20 recreational fishing in the study area. Mitigation measures and environmental commitments would
21 be available to reduce the effects of construction on recreation opportunities and experiences in the
22 study area.

23 During the implementation stage, construction activity associated with conservation measures could
24 result in adverse effects on recreation by temporarily or permanently limiting access to fishing sites
25 and disturbing fish habitat. However, the conservation measures are expected to result in a long-
26 term beneficial effect on recreation by enhancing aquatic habitat and fish abundance in the study
27 area.

28 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
29 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
30 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
31 controlling illegal harvest of covered species, and expanding boat launch facilities. During the
32 implementation stage, these measures could result in impacts on fishing opportunities by
33 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
34 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
35 onshore fishing opportunities. These impacts would be considered less than significant because the
36 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
37 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
38 Plan(Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
39 and although these CMs would result in highly localized reductions of predatory species, overall,
40 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
41 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2). Construction of
42 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
43 recreational fishing. The potential impact on covered and non-covered sport fish species from
44 construction activities would be considered less than significant because the BDCP would include
45 environmental commitments to prevent water quality effects include environmental training;
46 implementation of stormwater pollution prevention plans, erosion and sediment control plans,

1 hazardous materials management plans, and spill prevention, containment, and countermeasure
 2 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
 3 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
 4 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
 5 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
 6 implementation of the other conservation measures. Because construction of the conservation
 7 measure component facilities would be less intense and of shorter duration than construction of
 8 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 9 the construction-related impacts on recreational fishing associated with the other conservation
 10 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 11 will undergo additional environmental review and permitting which will include identification of
 12 site-specific measures to further protect resources.

13 Environmental commitments that will reduce construction-related impacts on recreation include a
 14 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 15 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 16 REC-3, above). In addition, a number of mitigation measures will address construction-related
 17 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 18 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 19 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 20 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 21 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 22 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 23 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.2). Mitigation measures NOI-1a
 24 and NOI-1b will address construction-related noise concerns (see additional discussion under
 25 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.2). Finally, should
 26 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 27 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 28 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2).

29 In the long term, the impact on fishing opportunities would be considered beneficial because the
 30 conservation measures are intended to enhance aquatic habitat and fish abundance.

31 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 32 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 33 **Transmission Lines and Underground Transmission Lines Where Feasible**

34 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 35 Alternative 1A, Impact AES-1.

36 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 37 **Sensitive Receptors**

38 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
21 **Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
25 **to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
33 **Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 12 **of Pile Driving and Other Construction-Related Underwater Noise**

13 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 14 Alternative 1A, Impact AQUA-1.

15 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 16 **and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 20 **as a Result of Implementing Conservation Measures 2–21**

21 **NEPA Effects:** This assessment evaluates BDCP conservation measures related to habitat restoration
 22 and enhancement efforts and those designed to reduce other stressors, describing their potential
 23 effects on boating recreation in the study area. Because the details surrounding the location and
 24 implementation of many of these measures are under development, these topics are addressed at a
 25 programmatic level. CM17, Illegal Harvest Reduction, is an enforcement funding measure; CM19,
 26 Urban Stormwater Treatment, would reduce pollutant discharges in stormwater—these measures
 27 would not affect recreational boating opportunities and are not discussed in this analysis.

28 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
 29 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
 30 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
 31 improvements and flow management facilities, would be implemented in four phases starting with
 32 plan implementation and continuing to approximately 2063. Boats are not allowed in the Yolo
 33 Bypass Wildlife Area, so construction activities associated with the physical modifications for this
 34 measure would not affect boating opportunities. The maximum extent of inundation in the Yolo
 35 Bypass would not increase from current conditions, but the frequency and duration of inundation
 36 events would increase. This measure would not affect opportunities for boating-related activities as
 37 a result of longer inundation periods.

1 CM4 provides for the restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
2 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
3 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
4 early long-term, BDCP implementation would provide for the cumulative restoration of 25,975 acres
5 of freshwater and brackish tidal habitat in the BDCP ROAs under all the action alternatives. In the
6 late long-term, a cumulative 65,000 acres of freshwater and brackish tidal habitat throughout the
7 ROAs would be restored. The extent of restored tidal habitat includes a contiguous habitat gradient
8 encompassing restored shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal marsh
9 plain habitat, and adjoining transitional upland habitat. Areas to be restored would be modified by
10 breaching and lowering levees, constructing new or modified levees to protect adjacent areas from
11 flooding, connecting remnant sloughs or channels to improve circulation, and modifying ground
12 elevations to reduce effects of subsidence. CM4 would lead to temporary decreases in boat-related
13 recreation opportunities as a result of noise and other conditions associated with channel and bank
14 modification activities in restoration areas. Following completion of restoration, CM4 would support
15 expanded opportunities for boating in reconnected and dredged sloughs.

16 CM5 provides for restoration of 1,000 acres of seasonally inundated floodplain habitat within the
17 Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
18 floodplain restoration could occur along channels in many locations in the north, east, and/or south
19 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
20 most promising opportunities for large-scale restoration are in the south Delta along the San
21 Joaquin, Old, and Middle Rivers channels. These locations offer benefits to covered fish species,
22 practicability considerations, and compatibility with potential flood management projects. While
23 site preparation and earthwork activities associated with restoration may temporarily limit some
24 boating access and lead to degraded conditions resulting from noise, odors, or visual effects, CM5
25 would result in an increase in boat-related recreation opportunities as a result of the seasonal
26 expansion of navigable areas.

27 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
28 and mudflat habitats along existing levees. At least 5 miles of habitat would be enhanced within the
29 first 10 years and up to 20 miles after 30 years. CM6 would create benches on the outboard side of
30 levees or create setback levees. Construction effects including noise, odors, and deteriorated visual
31 conditions would temporarily alter the quality of the boating experience in enhancement areas.
32 Where construction and completion of new benches would extend into existing waterways,
33 navigable areas would be slightly reduced, which would permanently affect boating-related
34 recreation. However, in cases where setback levees are constructed and channels are expanded,
35 there would be a slight increase in boating opportunities.

36 CM11 would provide beneficial effects on boating opportunities by allowing recreation to occur on
37 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
38 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
39 4, Section 4.2.3.9.2 *Recreation*). The reserve system would update one boating facility, as well as a
40 new boat launch facility within the footprint of the North Delta diversion facilities, which would
41 increase opportunities for boating within the study area.

42 CM13 would control nonnative aquatic vegetation including Brazilian waterweed, water hyacinth,
43 and other nonnative submerged and floating aquatic vegetation in BDCP tidal habitat restoration
44 areas. While aquatic vegetation removal operations could temporarily restrict or obstruct

1 navigation and reduce the quality of boating, overall the measure would increase boat passage and
2 navigation and would improve the boating experience.

3 Under CM16, nonphysical fish barriers, such as sound, air or light barriers, would be placed at the
4 head of Old River, the Delta Cross Channel, and Georgiana Slough and could possibly include Turner
5 Cut, Columbia Cut, the Delta-Mendota Canal intake, and Clifton Court Forebay. Depending on their
6 design, the construction and operation of these barriers could constrict boat passage or necessitate
7 lower speed limits, diminishing the boating experience around the barriers.

8 Implementing the conservation measures could result in an adverse effect on recreation by limiting
9 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
10 conservation measures could provide beneficial effects to recreation by expanding the extent of
11 navigable waterways available to boaters, improving and expanding boat launch facilities, and
12 removing nonnative vegetation that restricts or obstructs navigation.

13 CM18 would establish new conservation propagation programs and expand the existing program for
14 delta and longfin smelt. This measure would include development of a delta and longfin smelt
15 conservation hatchery by USFWS. The specifications and operations of this facility have not been
16 developed. The final selection of a location for the facility will involve additional environmental
17 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
18 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20).
19 One site is northwest of the city limits and could be used for a supplementation production facility.
20 This site is not near any existing well-established recreation sites or opportunities and is
21 approximately 1 mile from the Sacramento River such that future construction and operation
22 activities would not be expected to affect water-based recreation opportunities and experiences.
23 The other site is a former Army Reserve on the west river bank, south of the city limits, that would
24 be developed as a genetic refuge and research facility. Construction at this site could affect
25 recreation activities and experiences at the Delta Marina Yacht Harbor, immediately north of the
26 site, and boating on the Sacramento River, depending on noise levels and the degree of visual
27 disturbances. Overall, implementation of CM18 would not be expected to have an adverse effect on
28 recreational boating opportunities because construction of the facility would be anticipated to last 2
29 years or less (short term) and operation of the facility would not be expected to affect recreational
30 boating.

31 Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive
32 Species Program designed to implement actions to prevent the introduction of new aquatic invasive
33 species and reduce the spread of existing aquatic invasive species via recreational watercraft,
34 trailers, and other mobile recreational equipment used in aquatic environments in the study area.
35 The program would consist of two primary elements targeting recreational boaters: education and
36 outreach, and watercraft inspection. Education and outreach printed materials and interpretive
37 displays would provide information regarding the presence and range of existing aquatic invasive
38 species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive
39 species spreading within the study area, and the risk of new aquatic invasive species introductions.
40 The watercraft inspection would involve development and implementation of a comprehensive
41 inspection program. This type of program involves screening interviews at the point of entry; a
42 comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk
43 during the screening interview; decontamination and/or quarantine or exclusion of watercraft,
44 trailers, and equipment that are not clean, drained, and dry; and optional vessel certification.

1 Although there could be a marginal effect on the recreation experience if boaters are delayed at the
2 boat launch, it is expected that there would be no adverse effect on recreational boating.

3 Under CM21, the BDCP proponents would provide funding for actions that would minimize the
4 potential for entrainment of covered fish associated with operation of nonproject diversions and
5 also to improve Delta ecosystem health by reducing the diversion of plankton and other nutritional
6 resources into nonproject diversions, thereby benefiting all covered fishes. The number and size of
7 the diversions that would be eliminated are not precisely known because the affected parcels have
8 not yet been identified and moreover, some existing diversions may be remediated before being
9 incorporated into the BDCP preserve system. Unscreened diversions may be handled through
10 removal of individual diversions that have relatively large effects on covered fish species;
11 consolidation of multiple unscreened diversions to a single or fewer screened diversions placed in
12 lower quality habitat; relocation of diversions with substantial effects on covered species from high
13 quality to lower quality habitat, in conjunction with screening; reconfiguration and screening of
14 individual diversions in high quality habitat to take advantage of small-scale distribution patterns
15 and behavior of covered fish species relative to the location of individual diversions in the channel;
16 voluntary alteration of the daily and seasonal timing of diversion operation; or other methods may
17 be implemented if the technical team determines it to be appropriate. Implementation of this
18 measure would likely involve some in-water construction at some sites. These activities would be
19 highly localized and of short duration and would not result in adverse effects on recreational
20 boating in the study area.

21 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
22 some habitat restoration and enhancement measures and other conservation measures would limit
23 some opportunities for boating and boating-related recreation by reducing the extent of navigable
24 water available to boaters. Temporary effects would also stem from construction, which may limit
25 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
26 implementation. However, BDCP conservation measures would also lead to an enhanced boating
27 experience by expanding the extent of navigable waterways available to boaters, improving and
28 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
29 navigation.

30 Because these measures would not be anticipated to result in a substantial long-term disruption of
31 boating activities, this impact is considered less-than-significant for the conservation measures, with
32 the exception of CM18, discussed further below.

33 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
34 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
35 The BDCP proponents would implement environmental commitments to include a noise abatement
36 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
37 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
38 address construction-related impacts on recreational boating by reducing the degree of aesthetic
39 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
40 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
41 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
42 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
43 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
44 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.2). Mitigation measures NOI-1a
45 and NOI-1b will address construction-related noise concerns (see additional discussion under

1 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.2). Implementation of
2 these measures, as determined applicable to construction of this facility under future site-specific
3 environmental review, would reduce impacts on recreational boating to less-than-significant. No
4 additional mitigation would be required.

5 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
6 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
7 **Transmission Lines and Underground Transmission Lines Where Feasible**

8 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
11 **Sensitive Receptors**

12 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
15 **Material Area Management Plan**

16 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
17 Alternative 1A, Impact AES-1.

18 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

19 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
22 **Extent Feasible**

23 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
26 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

27 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
30 **Landscaping Plan**

31 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
34 **Construction**

35 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
36 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 24 **Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** This section considers upland recreational activities and potential effects from BDCP
 26 conservation measures geared toward the restoration and enhancement of habitat and the
 27 reduction of stressors on covered species. The activities under consideration include hunting,
 28 hiking, walking, wildlife viewing, botanical viewing, nature photography, picnicking, and sightseeing.
 29 The specific location and implementation activities associated with these measures are pending;
 30 thus, these topics are addressed at a programmatic level. Future guidelines governing the level of
 31 recreational access allowed in restored habitat areas would influence the severity of the BDCP's
 32 effects on these activities. CM17–CM21 involve enforcement, management, or other individual,
 33 localized project components that would not affect upland recreation opportunities. CM17 is an
 34 enforcement funding mechanism and would not result in a physical change to upland areas;
 35 construction under CM18, CM19, or CM21 would not affect existing upland recreation areas; and
 36 CM20 is an enforcement action primarily located at boat launches and would not affect upland
 37 recreation areas and related opportunities. These measures are not discussed further in this
 38 analysis.

1 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
2 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
3 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
4 improvements and flow management facilities, would be implemented in four phases starting with
5 plan implementation and continuing to approximately 2063. The maximum extent of inundation in
6 the Yolo Bypass would not increase from current conditions, but the frequency and duration of
7 inundation events would increase. The Yolo Bypass Wildlife Area provides opportunities for upland
8 recreational activities, including waterfowl and upland game bird hunting, hiking and walking,
9 wildlife viewing, botanical viewing, and nature photography. Changes to flood management in the
10 Yolo Bypass have the potential to result in effects on waterfowl and other recreation uses, including
11 recreational hunting, in this area (Ducks Unlimited 2012). Because the wildlife area closes during
12 periods of inundation, this measure would decrease opportunities for these activities as a result of
13 the longer inundation periods in the Yolo Bypass. Under Existing Conditions, flood-related
14 conditions contribute to Yolo Bypass hunting area closures lasting for up to 2 weeks (14 days) out of
15 the 100-day hunting season. Removal of berms and levees could also decrease recreational access in
16 the Yolo Bypass. Construction activities would also temporarily affect the quality of activities by
17 introducing noise, odors, and unattractive visual scenes into the recreational environment. Longer
18 inundation events would reduce wetland-dependent wildlife species access to food and could result
19 in impacts to upland game birds and failure of nesting birds during spring events. This may decrease
20 hunting and wildlife viewing experiences. Winter flood water levels under CM2 could be deeper
21 than Existing Conditions, waterfowl species (e.g., dabbling duck) that prefer a shallower flooded
22 seasonal wetland area could experience reduced foraging habitat. Another factor that could affect
23 waterfowl populations and related waterfowl hunting and bird watching would be spring seed
24 production loss and related decrease of food resources for these populations (Ducks Unlimited
25 2012). Hunting in the Yolo Bypass is most common in the lower elevation portions of the property;
26 thus, low levels of flooding would impact blind areas and free roam areas and reduce hunting
27 opportunities. Two inundation targets have been proposed for CM2, which would attempt to
28 inundate 7,000-10,000 acres from November to May, or 17,000 acres from December through
29 February, every year for 50 years, which could have potential effects on waterfowl and associated
30 recreational opportunities. The hunting season for waterfowl lasts from late October through
31 January, so some months would not be affected by inundation. However, CM2 would still have an
32 adverse effect on upland recreational opportunities. BDCP proponents and agencies will work with
33 CDFW to provide alternate public hunting opportunities and access and address additional
34 management costs resulting from increased inundation of the Yolo Wildlife Area resulting from
35 CM2. Additionally, environmental commitments are available to reduce the effects of inundation on
36 upland recreational opportunities.

37 CM3 provides the mechanism and guidance for land acquisition and establishment of a system of
38 conservation lands in the study area necessary to meet BDCP natural community and species habitat
39 protection objectives. This system of conservation lands would be built over the implementation
40 term of the BDCP to protect and enhance areas of existing natural communities and covered species
41 habitat, protect and maintain selected plant species with very limited distributions, provide sites
42 suitable for restoration of natural communities and covered species habitat, and provide habitat
43 connectivity among the various BDCP conservation land units in the system. This measure includes
44 8,000 acres of grassland habitat, 600 additional acres vernal pool complex, 150 acres of alkali
45 seasonal wetland complex and 46,905 acres of agricultural habitats (cultivated lands) all protected
46 under CM3; tidal habitat restored under CM4; valley/foothill riparian habitat restored under CM7;
47 vernal pool complex restored to achieve no net loss under CM9; and nontidal freshwater perennial

1 emergent wetland and nontidal perennial aquatic habitat restored under CM10. Depending on the
2 acquisition strategy implemented through this measure, recreational access for upland activities
3 could be expanded or diminished. Mechanisms that permit public access would increase
4 opportunities related to upland hunting, hiking, walking, wildlife viewing, botanical viewing, nature
5 photography, picnicking, and sightseeing. Alternatively, acquisition that would exclude public
6 recreational use would decrease opportunities for these activities.

7 CM4 provides for restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
8 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
9 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
10 late long-term, BDCP implementation would provide for the cumulative restoration of 65,000 acres
11 of freshwater and brackish tidal habitat in the BDCP ROAs under Alternative 1A. The extent of
12 restored tidal habitat includes shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal
13 marsh plain habitat, and adjoining transitional upland habitat. Areas to be restored would be
14 modified by breaching and lowering levees, constructing new or modified levees to protect adjacent
15 areas from flooding, connecting remnant sloughs or channels to improve circulation, and modifying
16 ground elevations to reduce effects of subsidence. Site preparation and earthwork associated with
17 this restoration could result in temporary closure to recreational areas and excess noise, decreasing
18 recreational quality. Additionally, some upland areas would be converted to tidal habitat as part of
19 this measure, limiting access for upland recreation activities including upland hiking and walking,
20 camping, picnicking, and nature viewing and photography. However, because transitional upland
21 habitat adjoining tidal areas would also be restored, this could also create new opportunities.
22 Furthermore, restoration actions adjacent to existing recreational areas could enhance the quality of
23 the experience in these areas.

24 CM5 provides for the restoration of 1,000 acres of seasonally inundated floodplain habitat within
25 the Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
26 floodplain restoration could occur along channels in many locations in the north, east, and/or south
27 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
28 most promising opportunities for large-scale restoration are in the south Delta along the San
29 Joaquin, Old, and Middle River channels; these locations offer benefits to covered fish species,
30 practicability considerations, and compatibility with potential flood management projects. Levee
31 removal and construction would temporarily limit access, while increased inundation of formerly
32 upland areas would temporarily and permanently limit access, diminishing opportunities for a
33 range of upland recreational activities including upland hiking, walking, camping, picnicking, upland
34 game hunting, sightseeing, wildlife and botanical viewing, and nature photography. Noise, odors,
35 and visual degradation from construction would also temporarily affect upland recreational quality.
36 However, restoration under this measure would provide additional on-water waterfowl hunting
37 opportunities and improve the quality of recreational experiences in existing and adjacent
38 recreation areas.

39 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
40 and mudflat habitats along existing levees. Under CM6 at least 5 miles of habitat would be enhanced
41 within the first 10 years and up to 20 miles after 30 years. At least 5 of the 20 miles of channel
42 margin enhancement would take place along the Sacramento River and at least 5 miles would be
43 along the San Joaquin River. The remaining 10 miles would be distributed among other fish
44 migration channels. Earthwork and site preparation associated with habitat enhancement may limit
45 access to existing upland recreational areas and degrade the recreational experience. This measure
46 would create benches on the outboard side of levees or create setback levees. Where setback levees

1 and associated enhancement activities close access to existing upland areas, associated recreational
2 opportunities such as wildlife viewing and hiking would be reduced. Where habitat enhancement
3 creates new upland areas accessible to recreationists, the opportunities for upland activities would
4 improve. In either case, habitat enhancements would improve the experience of wildlife-dependent
5 upland recreational activities from existing, adjacent recreation areas.

6 CM7 would restore 1,100 acres of riparian habitat in the first 15 years and up to 5,000 acres in the
7 late long-term. Areas chosen for implementation of this measure would be associated with
8 restoration and enhancement activities associated with CM4, CM5, and CM6. By year 40 of
9 implementation, the BDCP would cumulatively restore 5,000 acres of riparian habitat. Restoration of
10 riparian habitat would support fish habitat by increasing the input of organic material and by
11 increasing the extent of shaded riverine aquatic cover. While construction activities and access
12 restrictions associated with this component may temporarily or permanently reduce opportunities
13 for or quality of upland recreational activities, this measure would restore riparian habitat, which
14 would support increased opportunities and improved quality of upland game hunting, wildlife
15 viewing, botanical viewing, nature photography, hiking, walking, picnicking, and sightseeing.

16 Under CM8, 2,000 acres of grassland within CZ 1, CZ 8, and CZ 11 would be restored. Restoration
17 activities for this measure would be associated with tidal habitat restoration under CM4 and
18 agricultural land protection under CM3. Anticipated actions to restore grassland habitat, as
19 appropriate to site-specific conditions, would include, but not be limited to, acquiring lands, in fee
20 title or through conservation easements, with site characteristics that support restoration of high-
21 value grassland, restoring grassland by sowing native species using a variety of techniques, and
22 potentially restoring grazing grassland habitat to modify its vegetation. While earthwork and site
23 preparation of these areas could temporarily degrade recreational access and quality by introducing
24 noise and odors into the setting, restoration of grassland communities would increase opportunities
25 for upland hunting, wildlife viewing, botanical viewing, and nature photography due to
26 improvements to wildlife and native plant habitats. Restoration of natural areas under this measure
27 would also increase opportunities for upland hiking, walking, picnicking, and sightseeing.

28 Under CM9, vernal pool complex in CZ 1, CZ 8, and CZ 11 would be restored to achieve no net loss of
29 this habitat type associated with BDCP covered activities. Anticipated actions to restore vernal pool
30 complex habitat include acquiring lands, in fee-title or through conservation easement, suitable for
31 restoration of vernal pool complex habitat; restoring remnant natural vernal pool and swale
32 topography; restoring and maintaining natural hydrology; restoring and maintaining natural salt
33 and suspended clay concentrations in vernal pool water; significantly reducing or preventing the
34 deposition of substances that increase the fertility of the habitat; controlling the cover of invasive
35 nonnative plant species; adjusting livestock grazing regimes in vernal pool complexes; preventing
36 the introduction of invasive species; and hand collecting seed and vernal pool invertebrates from the
37 vicinity of the vernal pools to be restored as a source for establishment of native species. Activities
38 associated with the implementation of this measure could temporarily limit access to existing
39 recreational opportunities and create noise, detracting from the experience; however, restoration of
40 vernal pool complexes is anticipated to modestly increase opportunities for upland recreation
41 including wildlife viewing, botanical viewing, and nature photography.

42 Under CM10, 1,200 acres of nontidal freshwater marsh within CZ 2 and CZ 4 and/or CZ 5 would be
43 restored by year 40. CM10 actions would be phased with 400 acres restored by year 10, 600 by year
44 20 and the cumulative total of 1,200 acres restored by year 40. Restoration of nontidal freshwater
45 emergent wetland and nontidal perennial aquatic natural communities would provide habitat for

1 giant garter snake, western pond turtle, and other native wildlife and plant species characteristic of
 2 this habitat. Restored nontidal wetlands would also be designed and managed to support other
 3 native wildlife functions including waterfowl foraging, resting, and brood habitat and shorebird
 4 foraging and roosting habitat. Restored habitat would include preserved transitional upland habitat
 5 to provide upland habitat for giant garter snakes and western pond turtles and nesting habitat for
 6 waterfowl. While construction activities and access restrictions associated with this measure may
 7 reduce some upland recreational opportunities and create temporary construction effects from
 8 activities producing noise or odors, improvements in wildlife and native plant habitats associated
 9 with the measure would increase the quality of upland hunting, wildlife viewing, botanical viewing,
 10 and nature photography in and adjacent to restored areas.

11 Implementation of CM11 would provide beneficial effects on recreation opportunities by allowing
 12 recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system, consisting
 13 of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural community types
 14 (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than
 15 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead facilities and one
 16 updated boating facility, as well as a new boat launch facility within the footprint of the North Delta
 17 diversion facilities. This measure is expected to increase upland recreational opportunities by
 18 permitting hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, and equestrian
 19 use, as well as a potential for limited hunting opportunities.

20 Implementing the conservation measures could result in an adverse effect on recreation
 21 opportunities by reducing the extent of upland recreation sites and activities available to hiking,
 22 nature photography, or other similar activity. However, implementation of the measures would also
 23 restore or enhance new potential sites for upland recreation thereby improving the quality of
 24 recreational opportunities.

25 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 26 conservation measures would temporarily limit opportunities for upland recreational activities
 27 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 28 construction activities would also temporarily compromise the quality of upland recreation in and
 29 around these areas. Additionally, it is possible that current areas of upland recreation would be
 30 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 31 activities. These impacts on upland recreational opportunities would be considered less than
 32 significant because the BDCP would include environmental commitments that would require BDCP
 33 proponents to consult with CDFW to expand wildlife viewing, and hunting opportunities at the Yolo
 34 Wildlife Area and other locations, as described in Recommendation DP R14 of the Delta Plan
 35 (Appendix 3B, *Environmental Commitments*). Near-term implementation would also restore or
 36 enhance new potential sites for upland recreation and the measure would improve the quality of
 37 existing recreational opportunities adjacent to areas modified by the conservation measures. These
 38 measures would not be anticipated to result in a substantial long-term disruption of upland
 39 recreational activities; thus, this impact is considered less than significant.

40 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 41 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 42 **Addressing Recreation Resources**

43 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 44 CM21 could result in the potential for incompatibilities with plans and policies related to protecting

1 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 2 provide guidance for recreation resource issues as overviewed in Section 17.2, *Regulatory Setting*.
 3 This overview of plan and policy compatibility evaluates whether Alternative 1A is compatible or
 4 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 5 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 6 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 7 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 8 physical effects of Alternative 1A on recreation resources is addressed in Impacts REC-1 through
 9 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.4.3.2, and Chapter 17, *Aesthetics*
 10 *and Visual Resources*, Section 17.3.3.2. The following is a summary of compatibility evaluations
 11 related to recreation resources for plans and policies relevant to the BDCP.

- 12 ● *The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta*
 13 *and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General*
 14 *Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National*
 15 *Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation*
 16 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
 17 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
 18 resources and promote a range of opportunities to visitors to these areas. Construction and
 19 operation of the proposed water conveyance facilities and other conservation measures would
 20 not affect recreation opportunities in these areas and would be compatible with these plans.
- 21 ● The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
 22 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
 23 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
 24 all focused on the protection of resources, including recreation resources, within the Delta.
 25 These plans have policies, objectives, or goals intended to protect and enhance existing
 26 recreation and encourage development of new local and regional opportunities. Constructing
 27 the proposed conveyance facilities would result in long term disruption to existing established
 28 recreation areas in the study area and change the nature of the recreation setting. The proposed
 29 water conveyance elements could be considered incompatible with measures to protect existing
 30 recreation opportunities in the study area.
- 31 ● The Delta Protection Act, the Delta Protection Commission's *Great California Delta Trail System*,
 32 and the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all
 33 promote development of a regional trail system providing a continuous regional recreational
 34 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
 35 regional and local efforts to design proposed restoration areas to be compatible with and
 36 complement the goals of creating a regional trail network and where feasible to adapt
 37 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 38 ● Regional plans and those geared toward the management of specific areas, including the *Stone*
 39 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
 40 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*
 41 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
 42 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
 43 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
 44 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
 45 may create disruptions related to facility and restoration improvements. Proposed restoration
 46 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be

1 compatible with and complement the current management direction for these areas and would
 2 be required to adapt restoration proposals to meet current policy established for managing
 3 these areas.

- 4 ● The BDCP would be constructed and operate in compliance with regulations related to boat
 5 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
 6 Department of Boating and Waterways), and federal (including the U.S. Coast Guard) boating
 7 law enforcement. The alternative would be compatible with California State Land Commission
 8 regulations related to recreational piers or marinas.
- 9 ● EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
 10 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
 11 alternative.
- 12 ● Alternative 1A would result in the construction of permanent and temporary features associated
 13 with the proposed water conveyance facility across land governed by the general plans of
 14 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
 15 policies related to the protection of recreation resources and encourage the development of new
 16 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
 17 recognize the Delta as an area of international importance and as a major recreational resource
 18 of these counties. Construction activities that disrupt and degrade recreation opportunities in
 19 the study area would be incompatible with policies designed to protect recreation resources,
 20 including those intended to protect open space and natural areas and those that discourage
 21 development of public facilities and infrastructure unless it is related to agriculture, natural
 22 resources and open space, and has recreational value.

23 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 24 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 25 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 26 the alternative with relevant plans and polices.

27 **15.3.3.3 Alternative 1B—Dual Conveyance with East Alignment and** 28 **Intakes 1–5 (15,000 cfs; Operational Scenario A)**

29 Table 15-13 lists the recreation sites and areas that may be affected by Alternative 1B (Mapbook
 30 Figure 15-2). Specific effects on recreation areas or sites are discussed below.

31 **Table 15-13. Recreation Sites Potentially Affected by Construction of Alternative 1B**

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
Clarksburg Marina	Potential borrow and/or spoils area between Intakes 1 and 2	Noise and visual disturbances	Ongoing; up to 5–6 years (long term)
Clarksburg Boat Launch	Intake 3, access roads, and transmission lines	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Stone Lakes NWR (public use areas and private lands)	Potential borrow area east of Intake 1; canal, siphon and related work area; potential borrow and/or spoil area east of canal; Dierssen Road bridge, right-of-way, and work area; and Twin Cities Road bridge, right-of-way, and work area; tunnel work areas; and transmission lines	Permanent: canal and related structures; Temporary: noise and visual disturbances	Ongoing; up to 7 years (long term)

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
Cosumnes River Preserve (private lands) (tunnel siphon under Lost Slough to Mokelumne River)	Canal, tunnel work areas; tunnel siphon (subsurface); transmission lines; tunnel work area; RTM area; concrete batch plant; and fuel station	Noise and visual disturbances	Ongoing: up to 5 years (long term)
White Slough Wildlife Area—Pond 6	Canal, West Woodbridge Road bridge, bridge work area, and bridge right-of-way; temporary transmission line; and potential spoil area	Noise and visual disturbance	Ongoing: from about 1 year (short term) up to 6 years (long term)
Woodbridge Ecological Preserve, North Unit	Siphon work area (at Hog Slough), canal, West Woodbridge Road bridge, bridge work area; and temporary transmission line	Noise and visual disturbance	Ongoing: from about 1 year (short term) up to 6 years (long term)
Woodbridge Ecological Preserve, South Unit	West Woodbridge Road bridge, bridge work area, bridge right of way; canal; potential borrow and/or spoil area; siphon work area (at Sycamore Slough)	Temporary: noise and visual disturbance	Ongoing: from about 1 year (short term) up to 6 years (long term)
The Reserve at Spanos Park Golf Course	Potential borrow and/or spoil area	Noise	Ongoing: up to 4 years (long term)
Paradise Point Marina (Disappointment Slough)	Canal; siphon and siphon work areas	Noise and visual disturbances	Ongoing: about 5 years (long term)
Weber Point Yacht Club (check position)	Potential borrow and/or spoil area	Noise and visual disturbances	Ongoing: up to 3 years (long term)
Windmill Cove Resort & Marina)	Potential borrow and/or spoil area near San Joaquin tunnel siphon and work areas	Noise and visual disturbances	Ongoing: up to 4 years (long term)
Buckley Cove: Marina West Yacht Club, Buckley Cove Boat Launch, River Point Landing, Ladd's Marina, Stockton Sailing Club and Buckley Cove Park	Potential borrow and/or spoils area	Noise and visual disturbances	Ongoing: up to 4 years (long term)
Clifton Court Forebay	Byron Tract Forebay, control structures and associated work areas	Noise and visual disruptions	Forebay and control structures: Up to 4 years (long term)
Clifton Court Forebay	Byron Tract Forebay canal approach structures	Noise	Up to 1 year (short term)

Sources: GIS data layers available from DWR: CPAD, Green Info Network, 2011; USFWS Boundaries, USFWS 2012; Recreation Areas, AECOM/ICF 2012; Recreation Facilities, AECOM/ICF 2012.

Note: Construction duration information is approximate and subject to further revision.

1 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
2 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
3 **Proposed Water Conveyance Facilities**

4 **NEPA Effects:** Alternative 1B conveyance facilities include elements that would be permanently
5 located in three existing recreation areas: Stone Lakes NWR, Cosumnes River Preserve, and White
6 Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure 15-2).

7 In the Stone Lakes NWR, a portion of the canal, a siphon under Snodgrass Slough, two bridges and
8 associated rights-of-way, potential borrow and/or spoil area, and related temporary work areas are
9 proposed. The proposed facilities would be south of Lambert Road in a portion of the Stone Lakes
10 NWR that consists primarily of private land within the approved refuge boundary that is part of the
11 cooperative wildlife management area, but is considered nonrefuge land. Temporary work areas
12 would be returned to preconstruction conditions. There are no public recreation facilities in this
13 area of the Stone Lakes NWR (U.S. Fish and Wildlife Service 2007a).

14 In the Cosumnes River Preserve, a portion of the tunnel siphon would be located beneath an area
15 within the preserve (Table 15-13 and Mapbook 15-2). All work would be underground and would
16 not permanently displace any recreation facilities or lands within the preserve. No recreational
17 opportunities would be permanently displaced, disrupted, or relocated by placement of the tunnel at
18 this location.

19 In the Pond 6 portion of White Slough Wildlife Area, a portion of the W. Woodbridge Road bridge
20 right-of-way area would be along the southwestern corner of the property. The bridge right-of-way
21 would not permanently displace any existing recreational facilities.

22 Alternative 1B would not result in the permanent location of water conveyance facilities that would
23 cause adverse effects due to permanent displacement of an existing well-established public use or
24 private commercial recreation facility available for public access. Effects on recreation related to
25 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
26 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.3, and Chapter 23, *Noise*, Section 23.4.3.3,
27 for additional discussion of these topics.

28 **CEQA Conclusion:** Alternative 1B conveyance facilities include elements that would be permanently
29 located in three existing recreation areas: Stone Lakes NWR, Cosumnes River Preserve, and White
30 Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure 15-2). However, placement of these
31 structures would not result in permanent displacement of any well-established public use or private
32 commercial facility available for public access. Therefore, impacts are considered less than
33 significant. No mitigation is required.

34 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
35 **as a Result of Constructing the Proposed Water Conveyance Facilities**

36 **NEPA Effects:** A total of 18 recreation sites are within the construction impact area under
37 Alternative 1B (Table 15-13 and Mapbook Figure 15-2). Adverse effects on recreation may include
38 restricted access to a recreation facility or use of an area; degraded recreation opportunities and
39 experiences as a result of construction noise or changes to the visual setting; or other conflict with
40 construction that could adversely affect the ability of visitors to participate in recreational activities
41 at the site or area. If these effects were to occur, visitors may choose to visit different recreation
42 areas or marinas during the construction period. Specific effects that could occur at each of the sites

1 are discussed below. Also see Chapters 12, *Terrestrial and Biological Resources*, 17, *Socioeconomics*,
2 19, *Transportation*, and 23, *Noise* for additional detail related to waterfowl/wildlife,
3 aesthetics/visual resources, transportation, and noise, respectively.

4 **Clarksburg Marina**

5 Clarksburg Marina is a small marina on the Sacramento River with eight berths. It is on the west
6 bank of the river across from a potential borrow and/or spoils area between Intakes 1 and 2. On-
7 water and vehicular access to the marina and use of the marina's boating facilities would not be
8 affected by land-based construction on the other side of the river. Boating opportunities would still
9 be feasible at the marina during construction across the river. Use of the spoils/borrow area could
10 last for 5–6 years and take place primarily Monday through Friday for up to 24 hours per day.
11 Although marina access and boating opportunities would be maintained, construction would likely
12 generate noise and visual setting disruptions that could adversely affect recreation at and in the
13 vicinity of the marina.

14 **Clarksburg Boat Launch (Fishing Access)**

15 Potential effects on recreation at the Clarksburg Boat Launch (fishing access) would be similar to
16 those described under Alternative 1A, Impact REC-2. Recreation use at the boat launch/fishing
17 access site and up or downstream of Intake 3 would be affected by noise and visual setting
18 disruptions associated with construction of the intakes and related facilities. Construction would
19 last about 4 years with construction of the intake and related facilities primarily ongoing Monday
20 through Friday for up to 24 hours each day. Dewatering in the vicinity of Intake 3 also would be
21 ongoing 7 days a week for 24 hours per day throughout excavation construction to provide a dry
22 workspace.

23 **Stone Lakes National Wildlife Refuge**

24 As discussed under Impact REC-1, a portion of Stone Lakes NWR within the construction footprint
25 consists primarily of private land within the approved refuge boundary that is part of the
26 cooperative wildlife management area but is considered nonrefuge land. No public recreation
27 facilities are located in or planned for this area of the NWR (U.S. Fish and Wildlife Service 2007a).

28 Public access lands within Stone Lakes NWR that would be affected by construction (primarily
29 noise) are part of the core public use areas and include the Beach Lake and North Stone Lake Units
30 of the NWR. These two units are open to the public two Saturdays a month for hiking, wildlife
31 viewing, and interpretation activities, including docent-led seasonal wetland hikes. Environmental
32 education also occurs in the Beach Lake Unit, as well as guided wildlife viewing and interpretation
33 paddle trips on Lower Beach Lake and the Walk on the Wild Side Festival.

34 Because of the proximity of the alignment and associated construction work areas and borrow/spoil
35 areas, there could be effects on wildlife viewing and environmental education opportunities.
36 Construction would take place primarily Monday through Friday for up to 24 hours per day and last
37 up to 7 years in this area. If construction activities were to make these two units of the NWR less
38 hospitable for wildlife, then there would be temporary effects on wildlife viewing and some
39 environmental education opportunities within the NWR (those that depend on the presence of
40 wildlife). Hiking, interpretation, and some environmental education opportunities would still be
41 feasible within the NWR; however, the recreation experience of refuge visitors may be affected by
42 construction noise, resulting in reduced opportunities for wildlife viewing and visual disruptions. As

1 discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3, mitigation would be
2 available to address effects on nesting birds and waterfowl populations and greater sandhill crane
3 near construction areas. In addition, over the longer term of the action alternatives, implementation
4 of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
5 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
6 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
7 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
8 benefit sandhill crane and other species. Implementation of CM11 would provide beneficial effects
9 on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands
10 in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed
11 wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*).
12 The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4
13 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat
14 launch facility within the footprint of the North Delta diversion facilities. Permitted activities will
15 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
16 hunting, fishing, and boating, depending on the location.

17 ***Cosumnes River Preserve***

18 The Cosumnes River Preserve provides opportunities for fishing, hiking, paddling, wildlife viewing,
19 and environmental education. A few specially designated areas have also been set aside for limited
20 hunting. Fishing is allowed only from a boat, in the river. Although the construction footprint
21 traverses a portion of the Cosumnes River Preserve (McCormack-Williamson tract) west of
22 Interstate 5, this portion of the alignment includes a tunnel component with no surface disturbance.
23 A canal component of the alignment and associated construction would be immediately north of this
24 portion of the Cosumnes River Preserve and Snodgrass Slough. Because of the proximity of the
25 construction activities construction noise could have an effect on wildlife viewing and
26 environmental education opportunities. The recreation experience of refuge visitors may also be
27 adversely affected by construction activities because of noise disturbance. As discussed in Chapter
28 12, *Terrestrial Biological Resources*, Section 12.3.3.3, mitigation would be available to address effects
29 on nesting birds and waterfowl populations and greater sandhill crane near construction areas. In
30 addition, over the longer term of the action alternatives, implementation of CM3 and CM11 will
31 result in protection and enhancement of at least 8,100 acres of managed wetlands (see BDCP
32 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
33 suitable habitat conditions for covered species and native biodiversity, including benefiting
34 migratory waterfowl. Under CM3, the protection of cultivated lands will also benefit sandhill crane
35 and other species. As described above in the Stone Lakes National Wildlife section, implementation
36 of CM11 would provide beneficial effects on recreation opportunities by allowing recreation to
37 occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will
38 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
39 hunting, fishing, and boating.

40 ***White Slough Wildlife Area—Pond 6***

41 Effects on White Slough Wildlife Area would be similar to the adverse effects previously described
42 for the Alternative 1B, Impact REC-1, above. Only the Pond 6 portion of the White Slough Wildlife
43 Area is included within the construction impact area. Access to Pond 6 would be maintained from
44 Woodbridge Road or a detour. Fishing and hiking opportunities could be affected by canal, siphon,
45 and bridge construction from noise and visual setting disturbances. Construction of the canal and

1 siphon would last up to 5 years; use of the potential borrow and/or spoil area could last from 4 to 6
2 years; bridge construction and related road work would last up to 1 year. Construction would take
3 place primarily Monday through Friday for up to 24 hours per day. During this time wildlife viewing
4 and hunting opportunities at this pond could be adversely affected. Other ponds within the White
5 Slough Wildlife Area would be outside of the noise and visual impact areas and would remain
6 available for recreation. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3,
7 mitigation would be available to address effects on nesting birds and waterfowl populations and
8 greater sandhill crane near construction areas. In addition, over the longer term of the action
9 alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least
10 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal
11 MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and
12 native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
13 cultivated lands will also benefit sandhill crane and other species.

14 **Woodbridge Ecological Reserve**

15 Both the North and the South Units of the Woodbridge Ecological Reserve (also known as the
16 Isenberg Sandhill Crane Reserve) are within the construction impact area. The North Unit, north of
17 Woodbridge Road, is east of the canal alignment and could be affected primarily from construction
18 noise associated with the siphon and siphon work area at Hog Slough, the canal, the West
19 Woodbridge Road bridge and bridge work area, temporary transmission line, and potential borrow
20 and/or spoil area south of the preserve on the east side of the canal. Visitors can access this unit
21 only on a docent-led sandhill crane tour between October and February. Construction noise could
22 affect wildlife viewing opportunities in this unit. Construction of the West Woodbridge Road bridge
23 would be short-term, lasting up to 1 year. Other construction activities would last from 4 to 6 years.
24 Construction would take place year-round, primarily Monday through Friday, for up to 24 hours per
25 day. In areas where dewatering is needed to provide a dry workspace, it would be ongoing 7 days a
26 week for 24 hours per day. Construction during sandhill crane viewing season (October through
27 February) could adversely affect wildlife viewing opportunities at the site (to the point of
28 prohibiting use)The area south of Woodbridge Road, called the South Unit, would be immediately
29 west of a temporary potential borrow and/or spoil area. The South Unit is open to the public year-
30 round and contains interpretive panels and a view platform for watching sandhill cranes. Similar to
31 the White Slough Wildlife Area, opportunities for wildlife viewing would likely be unavailable in the
32 South Unit because construction noise and activities close to the reserve would likely make the area
33 temporarily less hospitable for wildlife, limiting wildlife viewing activities in areas near
34 construction.

35 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3, implementation of
36 AMMs would minimize the potential effects on greater sandhill crane. Mitigation measure BIO-75
37 would be available to address effects on sandhill crane habitat and the related effects on
38 recreational wildlife viewing opportunities. In addition, over the longer term of the action
39 alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least
40 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal
41 MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and
42 native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
43 cultivated lands will also benefit sandhill crane and other species. As described above in the Stone
44 Lakes National Wildlife section, implementation of CM11 would provide beneficial effects on
45 recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in

1 the BDCP reserve system. Permitted activities will include hiking, wildlife viewing, docent-led
2 wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

3 Visitors to both units of the Woodbridge Ecological Reserve would likely be able to see and hear
4 nearby construction activities. Construction noise and the resulting reduced opportunities for
5 wildlife viewing could affect the recreation setting in the vicinity of construction activities and
6 degrade the recreation experience of visitors.

7 ***The Reserve at Spanos Park Golf Course***

8 The Reserve at Spanos Park Golf Course is east of a temporary potential borrow and/or spoil area.
9 Access to the golf course would be maintained using West Eight Mile Road or a detour. There may be
10 additional truck traffic on Eight Mile Road during construction. Golfing opportunities would remain
11 available although, golfers on the west side of the course may be able to both see and hear
12 construction in the borrow/spoil area. Thus, construction could have a temporary negative effect on
13 the recreation setting and golfers' recreation experiences. Use of the potential borrow/spoil area
14 would last for up to 4 years with construction primarily Monday through Friday for up to 24 hours
15 each day.

16 ***Paradise Point Marina***

17 The Paradise Point Marina is located along Bishop Cut and Disappointment Slough east of the canal
18 alignment, siphon at Disappointment Slough, and siphon work areas. Vehicular access to the marina
19 would be maintained using Rio Blanco Road or a detour. On-water access to the marina would also
20 be maintained, and use of the marina's boating facilities would not be affected by canal and
21 temporary siphon work area activities. Boating and picnicking opportunities would still be feasible
22 at the marina during canal construction; however, the recreation experience of marina users may be
23 adversely affected by construction activities. Construction of the canal, siphon, and use of the related
24 work areas would last up to 5 years. Construction would take place primarily Monday through
25 Friday for up to 24 hours each day. Recreation at the marina would be adversely affected by noise
26 and visual setting disturbances.

27 ***Weber Point Yacht Club***

28 The facilities for the Weber Point Yacht Club are on the northeast side of Hog Island along the San
29 Joaquin River. The yacht club facilities are just outside of the impact area across the river from a
30 potential borrow and/or spoil area. On-water access to the club's facilities would not be adversely
31 affected by construction. There is no vehicular access to the club site. Use of the club's boating
32 facilities would not be adversely affected by land-based construction of the borrow/spoil area on
33 the other side of the San Joaquin River. Boating opportunities would still be feasible at the club site
34 during construction of the borrow/spoil area across the river; however, the recreation experience of
35 club members when on the water in the immediate vicinity north of Hog Island may be adversely
36 affected by construction. Club members may be able to hear or see construction activities at the
37 borrow/spoil area. Construction could temporarily negatively affect the recreation setting for club
38 members and thus their recreation experiences.

39 ***Windmill Cove Resort & Marina***

40 Windmill Cove Resort & Marina, located just off of the San Joaquin River south of Fourteenmile
41 Slough, includes 25 berths and a launch ramp and provides camping and picnicking opportunities
42 (Appendix 15A, *Privately Owned Recreation Facilities, by County*). The marina is east of a temporary

1 borrow/spoil area associated with the tunnel siphon that would be installed under the San Joaquin
 2 River and a related work area. Vehicular access to the marina would be maintained using Windmill
 3 Cove Road or a detour. There may be additional truck traffic on Windmill Cove Road during
 4 construction. On-water access to the marina would also be maintained, and use of the marina's
 5 boating facilities would not be affected by land-based construction activities. Construction and use
 6 of the potential borrow and/or spoils area in the vicinity of the San Joaquin River tunnel
 7 construction would last up to 4 years with construction ongoing primarily Monday through Friday
 8 for up to 24 hours each day. Boating, picnicking, and camping opportunities would still be available
 9 at the marina during construction at the adjacent borrow/spoil area; however, the recreation
 10 experience of marina users may be adversely affected by construction activities.

11 Because of the height of the levee near the marina, it is unlikely that the borrow/spoil area would be
 12 visible to marina users. However, marina users may be able to hear construction activity noise,
 13 which could temporarily negatively affect the recreation setting and their recreation experiences at
 14 the marina.

15 ***Buckley Cove: Marina West Yacht Club, Buckley Cove Boat Launch, River Point Landing Marina Resort,***
 16 ***Ladd's Marina, Stockton Sailing Club, and Buckley Cove Park***

17 A number of boating facilities are located at Buckley Cove: the Marina West Yacht Club, Buckley
 18 Cove Boat Launch, River Point Landing Marina Resort, Ladd's Marina, the Stockton Sailing Club, and
 19 Buckley Cove Park are on or near the San Joaquin River (Deep Water Ship Channel) and fall within
 20 the construction impact area associated with a large borrow and/or spoils area east and across the
 21 channel from these sites. The River Point Landing Marina provides 160 berths, a ramp, and picnic
 22 facilities. Adjacent to the marina is the Stockton Sailing Club, which provides 288 berths (Appendix
 23 15A, *Privately Owned Recreation Facilities, by County*). Ladd's Marina provides 146 berths. Vehicular
 24 access to these sites would be maintained using Buckley Cove Way. On-water access to the sites
 25 would also be maintained, and use of the boating facilities at all sites would not be adversely
 26 affected by construction use of the borrow and/or spoil area. Boating and picnicking opportunities
 27 would still be feasible at the marina and park, and boating would still be feasible at the sailing club
 28 during construction at the temporary work area; however, the recreation experience of marina
 29 users may be adversely affected by construction activities. Construction use of the borrow and/or
 30 spoil area would be ongoing for up to 4 years and would take place primarily Monday through
 31 Friday for up to 24 hours per day.

32 ***Clifton Court Forebay***

33 Clifton Court Forebay recreation is described under Alternative 1A, Impact REC-2. As described for
 34 Alternative 1A, under Alternative 1B, access to the forebay would be maintained using Clifton Court
 35 Road or a detour. Construction of the Byron Tract forebay, control structures, and use of related
 36 potential borrow and/or spoils area would take up to 4 years (long term); installation of
 37 transmission lines would take up to 2 years (short term). Construction would primarily occur
 38 Monday through Friday for up to 24 hours per day. Construction noise could deter fish and wildlife
 39 during and after construction periods, affecting fishing and other recreational opportunities. The
 40 opportunities for visitors who use the southern part of the forebay would be affected the most
 41 because of its proximity to the proposed construction areas. Construction of the intermediate
 42 pumping plant canal approach segments would occur at a later time than the forebay and control
 43 structures—up to 3 years later—and would last for up to 1 year. The effects of this construction
 44 would be less than the initial forebay construction but could have similar short-term effects on

1 recreation at the southern extent of the Clifton Court Forebay. Construction during waterfowl
 2 hunting season would potentially adversely affect recreational hunting to the degree that use is
 3 temporarily degraded. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3,
 4 mitigation would be available to address the effect on nesting birds and waterfowl populations near
 5 construction areas. In addition, over the longer term of the action alternatives, implementation of
 6 CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
 7 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
 8 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
 9 including benefiting migratory waterfowl, and benefitting recreationists by increasing wildlife
 10 viewing opportunities. Under CM3, the protection of cultivated lands will also benefit sandhill crane
 11 and other species. As described above in the Stone Lakes National Wildlife section, implementation
 12 of CM11 would provide beneficial effects on recreation opportunities by allowing recreation to
 13 occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will
 14 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
 15 hunting, fishing, and boating.

16 The construction areas for the new facilities would likely not be visible from the main public forebay
 17 access point; however, visitors at the southern part of the forebay would be able to see the
 18 construction areas, which could affect the recreation setting and detract from their recreation
 19 experiences. Construction noise and the resulting reduced opportunities for fishing or hunting could
 20 also adversely affect the ambient recreation setting in the vicinity of construction activities and
 21 degrade the recreation experience.

22 ***Other Recreation Opportunities***

23 *On-Water Recreation*

24 Cliff's Marina is upstream of Intake 1 construction area. Similarly, Lazy M Marina and Rivers End
 25 Marina & Boat Storage sites are not within the construction impact area for the Byron Tract Forebay
 26 and related facilities near Clifton Court Forebay. Although these facilities and other marinas or
 27 fishing sites fall outside of the impact area for noise, the overall recreation experience upstream or
 28 downstream of these sites may fall within the noise impact area and could experience diminished
 29 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
 30 over the course of intake installation. Overall, construction activities associated with the proposed
 31 water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work
 32 would primarily occur Monday through Friday for up to 24 hours per day. In-river construction
 33 would be further limited primarily to June 1 through October 31 each year. Although dewatering
 34 would take place 7 days a week for 24 hours per day, it would not result in adverse noise effects.
 35 Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the
 36 vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish,
 37 causing recreationists to experience a changed recreation setting.

38 *Campgrounds*

39 Nighttime construction activities would require the use of bright lights that would negatively affect
 40 nighttime views of and from the work area. This would affect any overnight camping at the
 41 recreation sites and areas discussed above, although day use areas that close at sunset would not be
 42 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
 43 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.3,

1 another nighttime effect on recreation would be construction noise levels that could adversely affect
2 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
3 construction could be infrequent and intermittent, but would adversely affect camping sites.
4 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
5 NOI-1b would be available to address these effects.

6 **Summary**

7 Construction of Alternative 1B intakes and water conveyance facilities would result in disruption to
8 recreational opportunities that would last from 1 to 5 years. Indirect effects on recreation
9 experiences may occur as a result of impaired access, construction noise, or negative visual effects
10 associated with construction. Although construction may occur year-round and last up to 9 years,
11 construction in the vicinity of identified recreation facilities would last from 1 to 5 years and in-river
12 construction would be primarily limited to June 1 through October 31 each year.

13 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
14 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
15 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
16 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
17 measures, environmental commitments, and conservation measures would provide several benefits
18 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
19 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
20 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
21 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
22 degradation associated with accidental spills, runoff and sedimentation, and dust could have
23 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
24 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
25 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
26 crane, would be implemented by the BDCP proponents where determined necessary for all covered
27 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
28 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
29 *Commitments*, DWR would implement an environmental commitment that would dispose of and
30 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
31 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
32 of the action alternatives, implementation of CM3 and CM11 will result in protection and
33 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
34 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
35 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
36 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
37 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
38 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
39 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
40 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
41 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
42 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
43 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
44 bicycling, equestrian use, hunting, fishing, and boating.

1 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.3, identifies a number of mitigation
2 measures that would be available to address construction-related visual effects on sensitive
3 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
4 visual barriers between construction work areas and sensitive receptors such as recreation areas
5 (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and
6 receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects
7 associated with changes to the landscape/visual setting from construction and the presence of new
8 water conveyance features. These include developing and implementing a spoil/borrow and RTM
9 area management plan (AES-1c), restoring barge loading facility sites once they are
10 decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent
11 feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-
12 1f), and implementing best management practices to implement a project landscaping plan (AES-
13 1g). DWR would also make a commitment to enhance the visual character of the area by creating
14 new wildlife viewing sites and enhancing interest in the construction site by constructing viewing
15 areas and displaying information about the project, which may attract people who may use the
16 recreation facilities to the construction site as part of the visit.

17 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
18 proponents will work with the California Department of Parks and Recreation to help insure the
19 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
20 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
21 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
22 helping to fund or construct elements of the American Discovery Trail and the potential conversion
23 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
24 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
25 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
26 proposal. The BDCP project proponents will also work with DPR to determine if some of the
27 constructed elements of CM1 could incorporate elements of the DPR's proposal.

28 As described in Chapter 19, *Transportation*, Section 19.3.3.3, Mitigation Measure TRANS-1a would
29 involve preparation of site-specific construction traffic management plans that would address
30 potential public access routes and provide construction information notification to local residents
31 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
32 of access to affected recreation areas as an environmental commitment. Where construction
33 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
34 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
35 construction sites. These would be designed to be safe, pleasant and would integrate with
36 opportunities to view the construction site as an additional area of interest. These physical facilities
37 would be combined with public information, including sidewalk wayfinding information that would
38 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
39 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
40 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
41 congested roadway segments.

42 Chapter 23, *Noise*, Section 23.4.3.3, discusses that construction noise effects could be addressed
43 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
44 implementation of a complaint/response tracking program (NOI-1b), and an environmental
45 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
46 addition, specific noise-generating activities near recreation areas would be scheduled to the extent

1 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
 2 viewing the aesthetic amenities of the area.

3 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
 4 2 would ensure continued access to existing recreation experiences. The Delta offers many
 5 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
 6 all of which would continue to be available for recreationists. However, due to the length of time that
 7 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
 8 related to temporary disruption of existing recreational activities at facilities within the impact area
 9 would be adverse.

10 **CEQA Conclusion:** Construction of Alternative 1B intakes and related water conveyance facilities
 11 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 12 years) impacts on well-established recreational opportunities and experiences in the study area
 13 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 14 impacts include reduced wildlife viewing opportunities at the Woodbridge Ecological Reserve.
 15 These impacts would be temporary, but may occur year-round and would occur over the long-term.
 16 Mitigation measures, environmental commitments, and AMMs would reduce these construction-
 17 related impacts by implementing measures to protect or compensate for effects on wildlife habitat
 18 and species; minimize the extent of changes to the visual setting, including nighttime light sources;
 19 manage construction-related traffic; and implement noise reduction and complaint tracking
 20 measures. However, the level of impact would not be reduced to less than significant because even
 21 though mitigation measures and environmental commitments would reduce the impacts on wildlife,
 22 visual setting, transportation, and noise conditions that could detract from the recreation
 23 experience. Due to the dispersed effects on the recreation experience across the Delta, it is not
 24 certain the mitigation would reduce the level of these impacts to less than significant in all instances
 25 such that there would be no reduction of recreational opportunities or experiences over the entire
 26 study area. Therefore, these impacts are considered significant and unavoidable. However, the
 27 impacts related to construction of the intakes would be less than significant.

28 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

29 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 30 1A.

31 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 32 Disturbance of Nesting Birds**

33 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 34 Alternative 1A, Impact BIO-75.

35 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to 36 Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New 37 Transmission Lines and Underground Transmission Lines Where Feasible**

38 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
25 **Residents**

26 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
29 **Construction**

30 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
33 **to Prevent Light Spill from Truck Headlights toward Residences**

34 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
35 Alternative 1A, Impact AES-4.

1 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 2 **Plan**

3 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 6 **Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 10 **Agreements to Enhance Capacity of Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 14 **Construction**

15 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

16 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 17 **Tracking Program**

18 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

19 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 20 **Result of Constructing the Proposed Water Conveyance Facilities**

21 **NEPA Effects:** Changes to boat passage and navigation, including obstructions to boat passage and
 22 boat traffic delays, would occur during the construction of Alternative 1B. Temporary channel
 23 closures may also be required that could impede boat movement. Construction of intakes and
 24 siphons would include the installation of cofferdams in the waterways and the use of barges, barge-
 25 mounted cranes, or other large waterborne equipment. Piers or temporary barge unloading facilities
 26 could also be located at the intake sites, spoil storage areas, or tunnel vent and shaft work areas.
 27 Construction equipment, such as barges and dredges, could obstruct boat passage or cause
 28 congestion in high traffic areas, as could the placement of cofferdams or barge unloading facilities.
 29 Channel obstructions and potential congestion may pose navigational and safety hazards to boaters.
 30 Reduced boat speed limits could cause further boat traffic delays in the vicinity of the construction
 31 sites.

32 **Intakes**

33 The proposed locations of the intakes for Alternative 1B are the same as those described for
 34 Alternative 1A. Effects on boat passage and navigation would be the same as those described in
 35 Alternative 1A, Impact REC-3 above.

36 Direct adverse effects on boat passage and navigation on the Sacramento River would result from
 37 construction of the intakes. Effects would include obstruction and delays to boat passage and
 38 navigation as a result of channel obstructions to compliance with temporary speed zones. However,

1 boat passage volume along the corridor of the Sacramento River where intakes are proposed is low.
2 Water-based recreational activities such as water skiing, wakeboarding, or tubing are also low. In
3 addition, there would be sufficient width in the channel to allow boat passage, with minor delays
4 related to construction speed zones. Site-specific safety features, including determination of the
5 speed-restriction zone would be developed under the Mitigation Measure TRANS-1a that involves
6 the BDCP proponents developing and implementing site-specific construction traffic management
7 plans, including waterway navigation elements. Within the speed-restricted zones around the intake
8 areas, high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be
9 eliminated. Mitigation Measure TRANS-1a also involves providing notification of construction
10 activities in waterways to ensure information about construction site location(s), construction
11 schedules, and identification of no-wake zone and/or detours is posted at Delta marinas and public
12 launch ramps. Although there is sufficient width in the channel to allow boat passage, boaters could
13 experience minor delays related to construction speed zones. However, this could still result in
14 effects on boat navigation and related boating recreation (waterskiing, wakeboarding, tubing),
15 which would be considered adverse because, although temporary, the effects would be long-term,
16 lasting more than 2 years.

17 ***Temporary Barge Unloading Facilities***

18 Alternative 1B includes a temporary barge unloading facility to be built on Fourteenmile Slough, at
19 the junction of the slough and the San Joaquin River (Mapbook Figure 15-2). The facility would be
20 used to transfer pipeline construction equipment and materials to and from construction sites and
21 would be removed after construction was completed. Construction of the facilities may require
22 partial channel closures and use of equipment within the waterways. The facility would occupy
23 about 1,000 feet of the west bank of the slough. The slough is about 150 feet wide at this location.
24 Therefore, the barge facility and barge operations would occupy a substantial portion of the slough,
25 constricting or preventing boat passage. However, the slough splits around an in-channel island at
26 this location. The similarly sized channel on the east side of the in-channel island provides an
27 alternate route for boaters to use in moving between the San Joaquin River and Fourteenmile
28 Slough. The alternate route around the in-channel island would add less than 2,000 feet to the travel
29 distance. Therefore, boaters would have the ability to avoid the barge facility, and effects on boat
30 passage would be minor and temporary, lasting approximately 5 years. Construction of temporary
31 barge unloading facilities would result in adverse effects to boat passage and navigation including
32 the creation of obstructions to boat passage and associated boat traffic delays, temporary partial
33 channel closures that could impede boat movement and eliminate recreational opportunities. In
34 waterways where water skiing, wakeboarding, and tubing occur, recreation opportunities in the
35 vicinity of the barge unloading facilities would be eliminated during construction. These effects
36 would be reduced with the implementation of Mitigation Measure TRANS-1a that involves the BDCP
37 proponents developing and implementing site-specific construction traffic management plans,
38 including waterway navigation elements and providing notification of construction activities in
39 waterways to ensure information about construction site location(s), construction schedules, and
40 identification of no-wake zone and/or detours is posted at Delta marinas and public launch ramps.

41 ***Siphons***

42 Construction of the seven siphons associated with Alternative 1B would result in temporary
43 obstruction of boat passage and may also cause boat traffic delays or navigation hazards to boaters.
44 The siphons would cross seven navigable waterways.

- 1 • Stone Lakes Drain
- 2 • Beaver Slough
- 3 • Hog Slough
- 4 • Sycamore Slough
- 5 • White Slough
- 6 • Middle River
- 7 • Disappointment Slough

8 Culvert siphons would be constructed using cofferdams and open cut-and-cover construction
 9 methods with conventional cast-in-place concrete structures. For most siphons, a bypass channel
 10 would be constructed to redirect the water away from the work area. For wider sloughs or where
 11 other restrictions exist, culvert siphons could be constructed in two or three phases, each phase
 12 lasting up to 1 year, depending on construction permit conditions. In each phase, a temporary
 13 cofferdam surrounding the work area would be installed that would occupy as much as one-half the
 14 width of the waterway.

15 Four of the seven navigable waterways to be crossed by a siphon (Stone Lakes Drain, Beaver Slough,
 16 Hog Slough, and Sycamore Slough) are on narrow, dead-end sloughs and within approximately 1
 17 mile of the easternmost limit to navigation. The siphon under White Slough would be about 3 miles
 18 from the nearest marina facility, and the location does not appear to be a boat traffic thoroughfare
 19 given its relatively remote location in relation to waterways.

20 Boat traffic volume in the vicinity of these five siphons is expected to be low, and most waterway use
 21 is likely limited to anglers. The construction of siphons would temporarily impede boat movement
 22 on these waterways; however, because the waterways provide access to dead-end sloughs or do not
 23 support large boat traffic volumes, the temporary impediment on these waterways would not
 24 substantially alter boat movement in the Delta.

25 Boat traffic volume on Middle River in the vicinity of the siphon crossing has been observed to be
 26 low because of the narrow and shallow character of the waterway channel (California Department of
 27 Water Resources and Bureau of Reclamation 2005). Boat traffic volume in the vicinity of the
 28 Disappointment Slough siphon may be high at times because of the slough's proximity to Paradise
 29 Point Marina, which provides more than 200 boat berths and a boat ramp. However, boaters may
 30 also choose to bypass the siphon construction site by using other waterways in the vicinity, such as
 31 Bishop Cut and Fourteenmile Slough. The construction of siphons would temporarily obstruct boat
 32 movement on these waterways; however, because the waterways do not support large boat traffic
 33 volumes and alternative navigational routes are available, the temporary impediment on these
 34 waterways would not substantially alter boat movement in the Delta.

35 Although boats would not be able to use the portion of the waterway where construction of the
 36 siphons was occurring, the use of each of these waterways for recreational navigation would be
 37 allowed to continue during construction.

38 Changes to boat passage and navigation on the Sacramento River in the vicinity of the intakes, barge
 39 unloading facilities and the siphons would result in adverse direct and indirect effects on
 40 recreational navigation in the affected waterways. Direct effects would result from the creation of
 41 obstructions to boat passage and associated boat traffic delays and temporary channel closures that

1 could impede boat movement. Changes to boat passage would also result in effects on recreational
2 navigation and water-based recreation activities such as wakeboarding, waterskiing, and tubing.
3 Although there may be short delays in boat passage, access to the affected waterways would be
4 maintained. The sloughs where siphons would cross do not support large boat traffic volumes and
5 construction activities would not result in substantial adverse effects. However, because boat
6 passage and navigation would be disrupted, effects are considered adverse. Mitigation Measure
7 TRANS-1a would be available to reduce effects to marine navigation by development and
8 implementation of site-specific construction traffic management plans, including specific measures
9 related to management of barges and stipulations to notify the commercial and leisure boating
10 community of proposed barge operations in the waterways. Additionally, BDCP proponents would
11 contribute funds for the construction of new recreation opportunities as well as for the protection of
12 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
13 proponents would also assist in funding the expansion of state recreation areas in the Delta as
14 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
15 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
16 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
17 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
18 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
19 recreational opportunities within the project area by providing a recreational opportunity
20 downstream/upstream in the same area for the same regional recreational users. These
21 commitments are further described in Appendix 3B, *Environmental Commitments*.

22 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
23 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
24 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
25 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
26 Agriculture Research Service, University of California Cooperative Extension Weed Research and
27 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
28 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
29 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
30 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
31 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
32 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
33 Enhanced ability to control these invasive vegetation would lead to increased recreation
34 opportunities which would compensate for the loss of recreational opportunities within the project
35 area by providing a recreational opportunity downstream/upstream in the same area for the same
36 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
37 *Commitments*.

38 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
39 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
40 proponents would also ensure through various outreach methods that recreationists were aware of
41 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
42 Cut). Nonetheless, effects on waterskiing, wakeboarding or tubing opportunities would last
43 approximately 5 years (long-term) and would be considered adverse because of the reduced
44 recreation opportunity and experiences expected to exist near construction activity.

45 **CEQA Conclusion:** Alternative 1B would result in significant impacts on boat passage and navigation
46 in the Sacramento River and other waterways within the Delta where intakes, temporary barge

1 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
 2 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
 3 would also result in temporary impacts on wakeboarding, waterskiing, and tubing because of
 4 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
 5 marine navigation by development and implementation of site-specific construction traffic
 6 management plans, including specific measures related to management of barges and stipulations to
 7 notify the commercial and leisure boating communities of proposed barge operations in the
 8 waterways. While the environmental commitments would reduce impacts on water-based
 9 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
 10 opportunities for those eliminated during construction, these impacts would be long-term and
 11 therefore considered significant and unavoidable.

12 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management** 13 **Plan**

14 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 15 Impact TRANS-1.

16 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a** 17 **Result of Constructing the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Overall, the effect on recreational fishing in the study area would be as described
 19 under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section
 20 11.3.4.3, Sacramento River and Delta region fish populations would not be affected by changes to
 21 localized water quality conditions, underwater noise, fish stranding or other physical disturbances,
 22 or reduced habitat areas such that recreational fishing opportunities would be substantially reduced
 23 during construction. BDCP environmental commitments to prevent water quality effects include
 24 environmental training; implementation of stormwater pollution prevention plans, erosion and
 25 sediment control plans, hazardous materials management plans, and spill prevention, containment,
 26 and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations
 27 plan (Appendix 3B, *Environmental Commitments*). RTM would be removed from RTM storage areas
 28 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
 29 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
 30 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
 31 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
 32 driving. Although fish populations likely would not be affected to the degree that fishing
 33 opportunities would be substantially reduced, construction conditions would introduce noise and
 34 visual disturbances that would affect the recreation experience for anglers.

35 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
 36 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
 37 setting disruptions could distract from the recreation experience including on weekends. Siphons
 38 are proposed across Beaver, Sycamore, and Hog Sloughs, which are heavily used fishing areas. Fish
 39 and anglers may avoid this area because of construction activities. This may cause greater use of
 40 alternate fishing areas and result in a degraded fishing experience for anglers. However, Mitigation
 41 Measures NOI-1a and NOI-1b would address construction noise effects. Additionally, specific noise-
 42 generating activities near recreation areas would be scheduled to the extent possible so as to avoid
 43 effects on passive recreation activities on-shore fishing. Mitigation measures would also be available
 44 to address construction-related visual effects on sensitive receptors from vegetation removal for

1 transmission lines and access routes (AES-1a), provision of visual barriers between construction
 2 work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations
 3 away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures
 4 to address longer term visual effects associated with changes to the landscape/visual setting from
 5 construction and the presence of new water conveyance features. These include developing and
 6 implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading
 7 facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all
 8 structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon
 9 removal of facilities (AES-1f), and implementing best management practices to implement a project
 10 landscaping plan (AES-1g). Overall, construction of the proposed water conveyance facilities would
 11 not degrade the fishing experience for boat and on-shore fishing locations. Additionally, anglers
 12 could move to other locations along the Sacramento River and throughout the Delta region and REC-
 13 2 would provide anglers with alternative bank fishing access sites further removed from areas
 14 affected by construction. This effect would not be adverse.

15 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 16 construction activities would be considered less than significant because the BDCP would include
 17 environmental commitments to prevent water quality effects include environmental training;
 18 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 19 hazardous materials management plans, and spill prevention, containment, and countermeasure
 20 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 21 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 22 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 23 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 24 that there would be no long-term reduction of local fishing opportunities and experiences. This
 25 impact would be less than significant.

26 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

27 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 28 1A.

29 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 30 **of Pile Driving and Other Construction-Related Underwater Noise**

31 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 32 Alternative 1A, Impact AQUA-1.

33 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 34 **and Other Construction-Related Underwater Noise**

35 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 36 Alternative 1A, Impact AQUA-1.

37 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 38 **Construction**

39 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 5 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 6 **Transmission Lines and Underground Transmission Lines Where Feasible**

7 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 10 **Sensitive Receptors**

11 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 14 **Material Area Management Plan**

15 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

18 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 21 **Extent Feasible**

22 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 25 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

26 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 29 **Landscaping Plan**

30 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 33 **Result of the Operation of the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** Operation of Alternative 1B may result in changes in entrainment, spawning, rearing
 35 and migration. However, in general, effects on (non-covered) fish species that are popular for

1 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 2 recreational fishing. While there are some significant impacts to specific non-covered species, as
 3 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.3, they are typically limited to
 4 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 5 would not result in a substantial long-term reduction in recreational fishing opportunities.

6 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 7 operation of Alternative 1B would be considered less than significant because any impacts to fish
 8 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 9 would not impact the species population of any popular sportfishing species overall.

10 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial** 11 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-** 12 **of-Delta Reservoirs**

13 **NEPA Effects:** Alternative 1B would have the same operational scenario as Alternative 1A, and as
 14 shown in Table 15-12a and Table 15-12b, Alternative 1B would result in the same changes as
 15 discussed under Alternative 1A. Also see Chapter 3, *Description of Alternatives*, Section 3.6.4.2, for
 16 detailed information on the operational scenarios, and Appendix 5A, *Modeling Methodology*, for an
 17 explanation of the CALSIM II model and assumptions.

18 **Existing Conditions (CEQA Baseline) Compared to Alternative 1B (2060)**

19 As shown in Table 15-12a and Table 15-12b, under Alternative 1B there would be from 1 to 20
 20 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 21 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 22 Trinity Lake, Shasta Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under
 23 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
 24 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
 25 the exact extent of the changes due to implementation of the action alternative using these model
 26 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
 27 differences between Existing Conditions and Alternative 1B cannot be isolated in this comparison.
 28 Please refer to the comparison of the No Action Alternative (2060) to Alternative 1B (2060) for a
 29 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
 30 operation of Alternative 1B.

31 **No Action Alternative (2060) Compared to Alternative 1B (LLT-2060)**

32 The comparison of Alternative 1B (2060) to the No Action Alternative (2060) condition most closely
 33 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 34 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
 35 *Methodology*). Operation of Alternative 1B would result in changes in the frequency with which the
 36 end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, New
 37 Melones Lake, and San Luis Reservoir would fall below levels identified as important water-
 38 dependent recreation thresholds (Table 15-12a and Table 15-12b). In all but one instance (San Luis
 39 Reservoir), the CALSIM II modeling results indicate that reservoir levels under Alternative 1B
 40 operations would fall below the individual reservoir thresholds less frequently than under No
 41 Action Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at
 42 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake, and would be
 43 considered beneficial effects of Alternative 1B operations. Operation of Alternative 1B would not

1 adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these
2 conditions represent improved recreation conditions under operation of Alternative 1B because
3 there would be fewer years in which end-of-September reservoir levels would fall below the
4 recreation thresholds thus indicating better boating opportunities, when compared to No Action
5 Alternative (2060) conditions.

6 The modeling for San Luis Reservoir indicates there could be up to 6 additional years which the
7 reservoir level would fall below the reservoir boating threshold at the end of September for the
8 Dinosaur Point boat launch. This is a less than 10% change and would not result in a substantial
9 reduction in recreation opportunities or experiences. In addition, at the Basalt boat launch, which is
10 accessible to elevation 340 feet, operations under Alternative 1B would result in only one additional
11 year for which reservoir elevations would fall below the recreation threshold relative to the No
12 Action Alternative (2060) condition. This is also a less than 10% change and would not be
13 considered a substantial reduction in recreation opportunities. Shoreline fishing would still be
14 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
15 would be available. These changes would not be adverse.

16 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
17 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
18 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
19 Alternative 1B (2060) operations would fall below the individual reservoir thresholds less
20 frequently than under No Action Alternative (2060). These changes in reservoir and lake elevations
21 would result in a less-than-significant impact on recreation opportunities and experiences at Trinity
22 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be
23 fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No
24 Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on
25 recreation opportunities and experiences. Operation of Alternative 1B would not substantially affect
26 water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the
27 modeling indicates that reservoir levels could exceed the recreation threshold up to 6 additional
28 years under Alternative 1B operations relative to the No Action Alternative (2060) condition. This is
29 a less than 10% change and is not considered a substantial reduction in recreation opportunities or
30 experiences at this reservoir. Overall, these conditions represent improved recreation conditions
31 under operation of Alternative 1B because there would be fewer years in which end-of-September
32 reservoir levels would fall below the recreation thresholds thus indicating better boating
33 opportunities, when compared to No Action Alternative (2060) conditions. No mitigation is
34 required.

35 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 36 **Result of Maintenance of the Proposed Water Conveyance Facilities**

37 **NEPA Effects:** Effects of maintenance activities under Alternative 1B would be the same as described
38 for Alternative 1A, Impact REC-7, and would result in periodic temporary but not substantial
39 adverse effects on boat passage and water-based recreational activities. Any effects would be short-
40 term (2 years or less) and intermittent. Other facility maintenance activities would occur on land
41 and would not affect boat passage and navigation. Implementation of the environmental
42 commitment to provide notification of construction and maintenance activities in waterways
43 (Appendix 3B, *Environmental Commitments*) would reduce these effects. Effects on boat passage and
44 navigation resulting from the maintenance of intake facilities would be short-term and intermittent
45 and would not be considered adverse.

1 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 2 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
 3 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
 4 environmental commitment to provide notification of construction and maintenance activities in
 5 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
 6 Intake maintenance impacts on recreation would be considered less-than-significant because
 7 impacts, if any, on public access or public use of established recreation facilities would last for 2
 8 years or less. Mitigation is not required.

9 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
 10 **Result of Maintenance of the Proposed Water Conveyance Facilities**

11 **NEPA Effects:** Maintenance activities for the proposed water conveyance facilities would not affect
 12 recreation opportunities because maintenance would take place within the individual facility right-
 13 of-way. The right-of-way under Alternative 1B includes the Stone Lakes NWR, White Slough Wildlife
 14 Area, and Cosumnes River Preserve; however, the lands in the Stone Lakes NWR and Cosumnes
 15 River Preserve in the right-of-way are not used for recreation, so there would be no effects on
 16 recreation opportunities. In the White Slough Wildlife Area (Pond 6) there would be a bridge right-
 17 of-way; facility maintenance activities would be restricted to roadway maintenance and would not
 18 affect recreation opportunities in the wildlife area. There would be no substantial long-term change
 19 to recreation opportunities as a result of maintenance of conveyance facilities; maintenance
 20 activities would be short-term and intermittent. There would be no adverse effects.

21 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 22 would not result in any changes to land-based recreational opportunities. Therefore, there would be
 23 no impact. Mitigation is not required.

24 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 25 **Implementing Conservation Measures 2–21**

26 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation measures
 27 as part of Alternative 1B could have effects related to recreational fishing that are similar in nature
 28 to those discussed above for construction, and operation and maintenance of proposed water
 29 conveyance facilities. Although similar in nature, the potential intensity of any effects would likely
 30 be substantially lower because the nature of the activities associated with implementing the
 31 conservation measures would be different—less heavy construction equipment would be required
 32 and the restoration actions would be implemented over a longer time frame than CM1. Potential
 33 effects from implementation of the conservation measures would be dispersed over a larger area
 34 and would generally involve substantially fewer construction and operation effects associated with
 35 built facilities. Additionally, overall, the habitat restoration and enhancement conservation
 36 measures would be expected to result in long-term benefits to aquatic species. Additional discussion
 37 related to the individual conservation measures is provided below.

38 With regards to fishing opportunities, effects of implementing the conservation measures under
 39 Alternative 1B would be similar to those described for Alternative 1A. CM2–CM21 would be
 40 expected to improve fishing opportunities in the study area although some effect on fishing
 41 opportunities could take place during implementation of the conservation measures. Overall,
 42 implementing the proposed conservation measures would be expected to provide beneficial effects
 43 on aquatic habitat and fish abundance thereby improving fishing opportunities.

1 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
2 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
3 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
4 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
5 implementation stage, these measures could result in impacts on fishing opportunities by
6 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
7 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
8 onshore fishing opportunities. These impacts would be considered less than significant because the
9 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
10 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
11 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
12 and although these CMs would result in highly localized reductions of predatory species, overall,
13 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
14 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.3). Construction of
15 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
16 recreational fishing. The potential impact on covered and non-covered sport fish species from
17 construction activities would be considered less than significant because the BDCP would include
18 environmental commitments to prevent water quality effects include environmental training;
19 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
20 hazardous materials management plans, and spill prevention, containment, and countermeasure
21 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
22 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
23 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
24 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
25 implementation of the other conservation measures. Because construction of the conservation
26 measure component facilities would be less intense and of shorter duration than construction of
27 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
28 the construction-related impacts on recreational fishing associated with the other conservation
29 measures to a less-than-significant level. Further, the individual facilities or conservation elements
30 will undergo additional environmental review and permitting which will include identification of
31 site-specific measures to further protect resources.

32 Environmental commitments that will reduce construction-related impacts on recreation include a
33 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
34 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
35 REC-3, above). In addition, a number of mitigation measures will address construction-related
36 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
37 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
38 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
39 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
40 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
41 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
42 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.3). Mitigation measures NOI-1a
43 and NOI-1b will address construction-related noise concerns (see additional discussion under
44 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.3). Finally, should
45 construction of conservation measure facilities require pile-driving, mitigation measures to protect
46 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
47 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.3).

1 In the long term, the impact on fishing opportunities would be considered beneficial because the
2 conservation measures are intended to enhance aquatic habitat and fish abundance.

3 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
4 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
5 **Transmission Lines and Underground Transmission Lines Where Feasible**

6 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
9 **Sensitive Receptors**

10 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
13 **Material Area Management Plan**

14 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

17 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
20 **Extent Feasible**

21 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
24 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

25 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
28 **Landscaping Plan**

29 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
32 **Construction**

33 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 24 **of Pile Driving and Other Construction-Related Underwater Noise**

25 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 26 Alternative 1A, Impact AQUA-1.

27 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 28 **and Other Construction-Related Underwater Noise**

29 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 30 Alternative 1A, Impact AQUA-1.

31 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 32 **as a Result of Implementing Conservation Measures 2–21**

33 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 34 conservation measures under Alternative 1B would be similar to those described for Alternative 1A.
 35 Implementing the conservation measures could result in an adverse effect on recreation by limiting

1 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
2 conservation measures could provide beneficial effects to recreation by expanding the extent of
3 navigable waterways available to boaters, improving and expanding boat launch facilities, and
4 removing nonnative vegetation that restricts or obstructs navigation.

5 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
6 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
7 BDCP proponents would implement environmental commitments to include a noise abatement plan
8 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
9 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
10 available to address construction-related effects on recreational boating by reducing the degree of
11 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
12 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
13 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
14 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
15 and transportation safety and access conditions of the marina (see additional discussion under
16 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.3).
17 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
18 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
19 *Noise*, Section 23.4.3.3).

20 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
21 some habitat restoration and enhancement measures and other conservation measures would limit
22 some opportunities for boating and boating-related recreation by reducing the extent of navigable
23 water available to boaters. Temporary effects would also stem from construction, which may limit
24 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
25 implementation. However, BDCP conservation measures would also lead to an enhanced boating
26 experience by expanding the extent of navigable waterways available to boaters, improving and
27 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
28 navigation. CM11 would also provide beneficial effects on boating opportunities by improving and
29 expanding boating facilities within the study area. Because these measures would not be anticipated
30 to result in a substantial long-term disruption of boating activities, this impact is considered less
31 than significant for the conservation measures, with the exception of CM18, discussed further below.

32 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
33 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
34 The BDCP proponents would implement environmental commitments to include a noise abatement
35 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
36 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
37 address construction-related impacts on recreational boating by reducing the degree of aesthetic
38 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
39 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
40 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
41 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
42 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
43 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.3). Mitigation measures NOI-1a
44 and NOI-1b will address construction-related noise concerns (see additional discussion under
45 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.3). Implementation of
46 these measures, as determined applicable to construction of this facility under future site-specific

1 environmental review, would reduce impacts on recreational boating to less than significant. No
2 additional mitigation would be required.

3 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
4 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
5 **Transmission Lines and Underground Transmission Lines Where Feasible**

6 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
9 **Sensitive Receptors**

10 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
13 **Material Area Management Plan**

14 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

17 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
20 **Extent Feasible**

21 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
24 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

25 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
28 **Landscaping Plan**

29 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
32 **Construction**

33 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 24 **Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** Implementing the conservation measures under Alternative 1B would have similar
 26 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.
 27 Implementing the conservation measures could result in an adverse effect on recreation
 28 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 29 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 30 suitable for hiking, nature photography, or other similar activity. However, environmental
 31 commitments would reduce these effects, and implementation of the measures would restore or
 32 enhance new potential sites for upland recreation thereby improving the quality of recreational
 33 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 34 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 35 mechanism and would not result in a physical change to upland areas; construction under CM18,
 36 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 37 action primarily located at boat launches and would not affect upland recreation areas and related
 38 opportunities. These measures are not discussed further in this analysis.

1 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 2 conservation measures would temporarily limit opportunities for upland recreational activities
 3 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 4 construction activities would also temporarily compromise the quality of upland recreation in and
 5 around these areas. Additionally, it is possible that current areas of upland recreation would be
 6 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 7 activities. These impacts on upland recreational opportunities would be considered less than
 8 significant because the BDCP would include environmental commitments that would require BDCP
 9 proponents to work with DFW to provide alternate public hunting opportunities and access and
 10 address additional management costs resulting from increased inundation of the Yolo Wildlife Area
 11 resulting from CM2, as described in Recommendation DP R14 of the Delta Plan (Appendix 3B,
 12 *Environmental Commitments*). Near-term implementation would also restore or enhance new
 13 potential sites for upland recreation and the measure would improve the quality of existing
 14 recreational opportunities adjacent to areas modified by the conservation measures. These
 15 measures would not be anticipated to result in a substantial long-term disruption of upland
 16 recreational activities; thus, this impact is considered less than significant.

17 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 18 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 19 **Addressing Recreation Resources**

20 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 21 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 22 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 23 provide guidance for recreation resource issues as overviewed in *Section 17.2, Regulatory Setting*.
 24 This overview of plan and policy compatibility evaluates whether Alternative 1B is compatible or
 25 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 26 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 27 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 28 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 29 physical effects of Alternative 1B on recreation resources is addressed in Impacts REC-1 through
 30 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.4.3.3, and Chapter 17, *Aesthetics*
 31 *and Visual Resources*, Section 17.3.3.3. The following is a summary of compatibility evaluations
 32 related to recreation resources for plans and policies relevant to the BDCP.

- 33 ● *The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta*
 34 *and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General*
 35 *Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National*
 36 *Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation*
 37 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
 38 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
 39 resources and promote a range of opportunities to visitors to these areas. Construction and
 40 operation of the proposed water conveyance facilities and other conservation measures would
 41 not affect recreation opportunities in these areas and would be compatible with these plans.
- 42 ● *The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), Delta*
 43 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
 44 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
 45 all focused on the protection of resources, including recreation resources, within the Delta.

1 These plans have policies, objectives, or goals intended to protect and enhance existing
2 recreation and encourage development of new local and regional opportunities. Constructing
3 the proposed conveyance facilities would result in long term disruption to existing established
4 recreation areas in the study area and change the nature of the recreation setting. The proposed
5 water conveyance elements could be considered incompatible with measures to protect existing
6 recreation opportunities in the study area.

- 7 ● The Delta Protection Act, the Delta Protection Commission's *Great California Delta Trail System*,
8 and the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all
9 promote development of a regional trail system providing a continuous regional recreational
10 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
11 regional and local efforts to design proposed restoration areas to be compatible with and
12 complement the goals of creating a regional trail network and where feasible to adapt
13 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 14 ● Regional plans and those geared toward the management of specific areas, including the *Stone*
15 *Lakes National Wildlife Refuge CCP*, *Cosumnes River Preserve Management Plan*, *Brannan Island*
16 *and Franks Tract State Recreation Areas General Plan*, *Yolo Bypass Wildlife Area Land*
17 *Management Plan*, *the Yolo County General Plan*, *Lower Sherman Island Wildlife Area Land*
18 *Management Plan*, *San Francisco Bay Plan*, *Suisun Marsh Protection Plan*, and *Solano County*
19 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
20 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
21 may create disruptions related to facility and restoration improvements. Proposed restoration
22 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
23 compatible with and complement the current management direction for these areas and would
24 be required to adapt restoration proposals to meet current policy established for managing
25 these areas.
- 26 ● The BDCP would be constructed and operate in compliance with regulations related to boat
27 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
28 Department of Boating and Waterways), and federal (including the U.S. Coast Guard) boating
29 law enforcement. The alternative would be compatible with California State Land Commission
30 regulations related to recreational piers or marinas.
- 31 ● EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
32 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
33 alternative.
- 34 ● Alternative 1B would result in the construction of permanent and temporary features associated
35 with the proposed water conveyance facility across land governed by the general plans of
36 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
37 policies related to the protection of recreation resources and encourage the development of new
38 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
39 recognize the Delta as an area of international importance and as a major recreational resource
40 of these counties. Construction activities that disrupt and degrade recreation opportunities in
41 the study area would be incompatible with policies designed to protect recreation resources,
42 including those intended to protect open space and natural areas and those that discourage
43 development of public facilities and infrastructure unless it is related to agriculture, natural
44 resources and open space, and has recreational value.

CEQA Conclusion: The incompatibilities identified in the analysis indicate the potential for a physical consequence to the environment. The physical effects are discussed in impacts REC-1 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of the alternative with relevant plans and polices.

15.3.3.4 Alternative 1C—Dual Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario A)

Table 15-14 lists the recreation sites and areas that may be affected by Alternative 1C (Mapbook Figure 15-3). Specific effects on recreation areas or sites are discussed below.

Table 15-14. Recreation Sites Potentially Affected during Construction of Alternative 1C

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
Clarksburg Boat Launch	Intake 3; borrow and/or spoil site; temporary transmission lines	Noise and visual disturbances	Up to 6 years
Arrowhead Harbor Marina	Siphon at Miner Slough; siphon work area; canal; temporary transmission line	Noise and visual disturbances	Up to 4 years
Miner Slough Wildlife Area	Reusable tunnel material area	Noise and visual disturbances	Up to 6 years
Hidden Harbor Marina	Tunnel; tunnel ventilation / access shaft; temporary transmission line	Noise and visual disturbances	Up to 2 years
Delta Protection Lands, Grand Island	Tunnel; safe haven work area; barge unloading facility	Noise and visual disturbances	Up to 6 years
Twitchell Island	Tunnel; tunnel ventilation / access shaft; safe haven work area; temporary transmission line	Noise and visual disturbances	Up to 3 years
Franks Tract State Recreation Area	Tunnel; safe haven work area; temporary access road; temporary transmission line; temporary concrete batch plant	Noise and visual disturbances	Up to 2 years
Summer Lake Community Park	Tunnel work area; canal; temporary transmission line	Noise disturbance	Up to 6 years
Sycamore Drive Park	Tunnel work area; canal; siphon work area	Noise and visual disturbances	Up to 6 years
Clifton Court Forebay	Canal; Byron Tract Forebay; railroad work area; siphon; siphon work area; bridge; spoil area.	Noise and visual disturbances; access	Up to 4 years
Clifton Court Forebay	Control structures work area	Noise and visual disturbances	Up to 1 year
Lazy M Marina	Spoil site; siphon; siphon work area; railroad work area; Byron Tract Forebay	Noise and visual disturbances; access	Up to 3 years

Sources: GIS data layers available from DWR: CPAD, Green Info Network, 2011; USFWS Boundaries, USFWS 2012; Recreation Areas, AECOM/ICF 2012; Recreation Facilities, AECOM/ICF 2012.

Note: Construction duration information is approximate and subject to further revision.

10

1 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
 2 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
 3 **Proposed Water Conveyance Facilities**

4 **NEPA Effects:** Alternative 1C includes locating a tunnel segment of the west alignment,
 5 ventilation/access shaft, permanent access road to the tunnel shaft on Twitchell Island. The tunnel
 6 would run north to south, essentially through the middle of the island. A temporary work area
 7 would be located in the southernmost portion of the island adjacent to the proposed tunnel
 8 alignment. A temporary access road and temporary transmission line would also be installed for use
 9 during construction (up to 2 years). This temporary work area (safe haven area) and areas
 10 associated with the temporary access road and power-related features would be returned to pre-
 11 construction conditions. Twitchell Island is included in CDFW's Delta Island Hunting Program, a
 12 late-season hunt for pheasants and waterfowl on state-owned lands on Twitchell and Sherman
 13 Islands (California Department of Fish and Game 2009a). Both the canal alignment (tunnel portion)
 14 and a vent shaft would run underground through the hunting area (Table 15-14 and Mapbook
 15 Figure 15-3).

16 Permanently locating the tunnel, ventilation/access shaft, and permanent access road on Twitchell
 17 Island would not result in adverse effects on hunting or recreational opportunities on Twitchell
 18 Island postconstruction. Temporary effects that may occur as a result of construction are discussed
 19 under Impact REC-2, below.

20 **CEQA Conclusion:** Alternative 1C conveyance facilities involve the tunnel, ventilation/access shaft,
 21 and permanent access road on Twitchell Island and would not result in adverse effects on hunting or
 22 recreational opportunities (Table 15-14 and Mapbook Figure 15-3). The alternative would not result
 23 in the permanent displacement of any public use or private commercial recreation facility available
 24 for public access. Therefore, impacts are considered less than significant. No mitigation is required.

25 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 26 **as a Result of Constructing the Proposed Water Conveyance Facilities**

27 **NEPA Effects:** A total of 11 recreation sites are within the potential impact area under Alternative 1C
 28 (Table 15-14 and Mapbook Figure 15-3). Adverse effects on recreation may include restricted access
 29 to a recreation facility or use of an area; degraded recreation opportunities and experiences as a
 30 result of construction noise or changes to the visual setting; or other conflict with construction that
 31 could adversely affect the ability of visitors to participate in recreational activities at the site or area.
 32 If these effects were to occur, visitors may choose to visit different recreation areas or marinas
 33 during the construction period. Effects specific to each area are described below. Also see Chapter
 34 12, Terrestrial Biological Resources, Section 12.3.3.4, Chapter 17, *Aesthetics and Visual Resources*,
 35 Section 17.3.3.4, Chapter 19, *Transportation*, Section 19.3.3.4, and Chapter 23, *Noise*, Section
 36 23.4.3.4, for additional detail related to waterfowl/wildlife, aesthetics/visual resources,
 37 transportation, and noise, respectively.

38 **Clarksburg Boat Launch (Fishing Access)**

39 The Clarksburg Boat Launch is north of Intake W3 site and within the impact area for the intake and
 40 related facilities, including a large potential borrow and/or spoils area that would be just west of
 41 County Road E9. In addition, a permanent access road would extend from County Road E9, southeast
 42 of the boat launch area, and a temporary transmission line would be installed along the county road,
 43 also west of the boat launch area. Construction would last up to 6 years and would primarily occur

1 Monday through Friday for up to 24 hours per day. Dewatering in the vicinity of Intake 3 also would
2 be ongoing 7 days a week for 24 hours per day throughout excavation construction to provide a dry
3 workspace. Construction of the intake would occur in the Sacramento River and on the west side of
4 the river. Access to the Clarksburg Boat Launch site would be maintained using County Road E9 or a
5 detour; access is not expected to be a concern because there is sufficient distance upstream to allow
6 for continued use of the boating access facilities. However, construction noise could adversely affect
7 fishing opportunities by making the site less desirable for fishing. On-water access to the site, as well
8 as use of the boat ramp, would not be affected by activities downstream, upstream, or across the
9 river.

10 Construction activities (transmission line, access road, and borrow/spoils area) would be visible
11 from the site, although most of the Intake W3 site lies south of a bend in the river and may be out of
12 view from onshore. In addition, construction noise from the intake, access road, temporary
13 transmission lines, and borrow/spoils area could negatively affect the recreation setting and thus
14 could affect the recreation experience of visitors participating in picnicking, boat launching, or
15 fishing at the site.

16 ***Arrowhead Harbor Marina***

17 Arrowhead Harbor Marina is located at the junction of Miner and Duck Sloughs. Construction north
18 and east of the marina would include the canal, a siphon under Miner Slough, temporary
19 transmission lines, and a permanent access road. Construction would last up to 4 years and would
20 primarily occur Monday through Friday for up to 24 hours per day. Dewatering would likely be
21 needed along the canal alignment possibly in the vicinity of the marina, and would be ongoing 7 days
22 a week for 24 hours per day throughout excavation construction to provide a dry workspace.
23 Arrowhead Harbor has 76 berths, a ramp, and picnic facilities. Vehicular access to the marina would
24 be maintained using Holland Road or a detour. Traffic levels on Holland Road may increase because
25 of construction. On-water access to the marina would also be maintained, and use of the marina's
26 boating facilities would not be affected by construction. Boating and picnicking opportunities would
27 still be available at the marina during construction. Construction in Miner Slough may not be fully
28 visible from the marina, although the boating experience for visitors to the marina would be affected
29 by construction that would occur immediately east of the marina and along the slough. Construction
30 near this marina would be temporary, but would result in long-term adverse effects on the
31 recreation setting and recreation experiences at the marina and areas up and downstream Miner
32 and Duck Sloughs.

33 ***Miner Slough Wildlife Area***

34 The Miner Slough Wildlife Area provides bird watching, wildlife viewing, fishing and waterfowl
35 hunting opportunities. Construction activities at a RTM area across the slough and east of the site
36 would generate elevated noise and visual setting disruptions for visitors to this area (which is only
37 accessible by boat). Construction would last up to 6 years and would primarily occur Monday
38 through Friday for up to 24 hours per day. Construction noise and activities could adversely affect
39 hunting and wildlife viewing opportunities. The construction noise could result in reduced
40 opportunities for wildlife viewing and visual disruptions, degrading the recreation experience of
41 visitors' at the wildlife area and on the water in the immediate vicinity of construction. As discussed
42 in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.4, mitigation would be available to
43 address effects on nesting birds and waterfowl populations. In addition, over the longer term of the
44 action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of

1 at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*,
2 Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species
3 and native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
4 cultivated lands will also benefit sandhill crane and other species. Implementation of CM11 would
5 provide beneficial effects on recreation opportunities by allowing recreation to occur on
6 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
7 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
8 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
9 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
10 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
11 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
12 bicycling, equestrian use, hunting, fishing, and boating, depending on the location.

13 ***Hidden Harbor Marina***

14 Hidden Harbor Marina is an all-sailboat facility located at the junction of Cache and Steamboat
15 Sloughs, just west of the canal alignment. Related construction activities which would occur north
16 and east of the marina include a tunnel ventilation and access shaft, a permanent access road, and a
17 temporary transmission line. Construction would last up to 2 years and would primarily occur
18 Monday through Friday for up to 24 hours per day. Vehicular access to the marina would be
19 maintained using SR 84 or a detour. Traffic levels on SR 84 may increase because of construction
20 On-water access to the marina would also be maintained, and use of the marina's boating facilities
21 would not be affected by construction. Boating opportunities would still be available at the marina
22 during canal tunnel construction; however, the recreation experiences of marina users may be
23 affected by construction and noise. Construction activities in Steamboat Slough would not be visible
24 to marina users. Marina users may be able to hear construction noise, however, which could
25 temporarily affect the recreation setting and their recreation experiences at the marina. Because
26 construction of these facilities would last 2 years or less, this is considered a short-term effect.

27 ***Delta Protection Lands***

28 These lands on the southern tip of Grand Island between Steamboat Sough and the Sacramento
29 River are designated Natural Reserve open space in the *Sacramento County General Plan*
30 (Sacramento County 2011). The area is considered an important natural area supporting marsh and
31 riparian habitat. Although there are no formal or designated recreation facilities, recreationists
32 visiting the area, especially on the southeastern side near the Sacramento River temporary barge
33 unloading facility, could be exposed to elevated noise for the duration of construction use of the
34 barge which is anticipated to last up to 6 years. Construction would primarily occur Monday through
35 Friday, for up to 24 hours per day.

36 ***Twitchell Island***

37 Alternative 1C conveyance facilities, including the canal alignment (tunnel portion would run from
38 north to south through Twitchell Island. Related construction would include a tunnel
39 ventilation/access shaft, a permanent road to the access shaft, a temporary work area (safe haven
40 area), a permanent access road to the tunnel shaft, and temporary transmission line. Construction
41 would last up to 3 years and would primarily occur Monday through Friday for up to 24 hours per
42 day. Twitchell Island is part of CDFW's Delta Island Hunting Program, a late-season hunt for
43 pheasants and waterfowl (California Department of Fish and Game 2009a). These lands are

1 available through the cooperation of DWR and CDFW does not have any management authority over
2 these lands. As a result, hunting opportunities may vary from year to year depending on DWR
3 projects and the management and cropping patterns of tenant farmers (California Department of
4 Fish and Game 2009a).

5 Access to the area would be maintained using existing roads or detours. Construction noise and
6 activities could adversely affect hunting opportunities, depending on the timing of construction
7 although only a small portion of the island would be affected. As discussed in Chapter 12, *Terrestrial*
8 *Biological Resources*, Section 12.3.3.4, mitigation would be available to address effects on nesting
9 birds and waterfowl populations. In addition, over the longer term of the action alternatives,
10 implementation of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres
11 of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1,
12 Objective MWNC1.1) that will provide suitable habitat conditions for covered species and native
13 biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of cultivated
14 lands will also benefit sandhill crane and other species. As described above in the Miner Slough
15 Wildlife Area section, implementation of CM11 would provide beneficial effects on recreation
16 opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP
17 reserve system. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and
18 botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

19 ***Franks Tract State Recreation Area***

20 Alternative 1C tunnel conveyance facility would run from north to south through the western
21 portion of the Franks Tract State Recreation Area. Related construction activities north of Franks
22 Tract State Recreation Area include tunnel access shaft construction, a temporary concrete batch
23 plant, and temporary transmission line. South of Franks Tract State Recreation Area construction
24 activities include a temporary safe haven work area, temporary access road, and a temporary
25 transmission line. Construction would last up to 2 years and would primarily occur Monday through
26 Friday for up to 24 hours per day. Franks Tract State Recreation Area, with most of its acreage
27 underwater, is only accessible by water. Because of its limited access and fluctuating water levels,
28 recreational use is by anglers and waterfowl hunters. Recreation activities such as boating and
29 waterskiing also occur within the Franks Tract State Recreation Area. Boat access to the area
30 would be maintained. Construction noise and activities could adversely affect hunting opportunities
31 and the recreation experiences of hunters and anglers. Generally, the nature of construction in this
32 area is less than in other parts of the alignment and anglers could relocate a short distance even to
33 other areas within the recreation area. There would be little effect on boaters and waterskiing.

34 ***Sycamore Drive Park and Lakewood Drive Community Parks***

35 Sycamore Drive (0.26 acre) and Lakewood Drive (0.58 acre) parks in the Summer Lake community
36 in Oakley, provide localized recreation amenities including lawn areas, picnic tables, playground,
37 and barbeque areas. Construction of the canal and use of a tunnel work area and a siphon work area
38 in the immediate vicinity of these parks would adversely affect neighborhood recreation
39 opportunities. Construction would last up to 6 years and primarily would occur Monday through
40 Friday for up to 24 hours per day. Vehicular access to the parks within the neighborhood would not
41 be affected. Recreation experiences of park users would be adversely affected primarily by
42 construction noise. Construction areas would likely not be highly visible from either park area
43 because of earthen berms that separate the community from adjacent land uses on the southwest.

1 **Clifton Court Forebay**

2 Clifton Court Forebay offers public fishing and hunting access from Lindeman Road on the west side
3 of the forebay. There are no recreation facilities at the forebay; motorized boating, camping, and
4 swimming are not allowed. Most fishing and hunting use at the forebay likely occurs along the west
5 and south areas of the forebay, although some visitors walk or ride a bike around the forebay to
6 reach other fishing and hunting locations.

7 Access to the forebay would be maintained using Clifton Court Road or a detour. Construction would
8 take up to 5 years and would primarily occur Monday through Friday for up to 24 hours per day.
9 Construction noise could deter fish and wildlife during and after construction periods, affecting
10 fishing and other recreational opportunities. The opportunities for visitors who use the southern
11 part of the forebay would be affected the most because of its proximity to the proposed construction
12 areas. Construction during waterfowl hunting season would adversely affect recreational hunting
13 (i.e., when hunting is permitted on Wednesdays) to the degree that use is temporarily degraded.
14 Effects on weekend hunting (permitted on Saturdays and Sundays) could be less because
15 construction equipment would not be operating. As discussed in Chapter 12, *Terrestrial Biological*
16 *Resources*, Section 12.3.3.4, mitigation would be available to address the effect on nesting birds and
17 waterfowl populations near construction areas. In addition, over the longer term of the action
18 alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least
19 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal
20 MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and
21 native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
22 cultivated lands will also benefit sandhill crane and other species. As described above in the Miner
23 Slough Wildlife Area section, implementation of CM11 would provide beneficial effects on recreation
24 opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP
25 reserve system. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and
26 botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

27 The construction areas for the new facilities would likely not be visible from the main public forebay
28 access point; however, visitors at the southern part of the forebay would be able to see the
29 construction areas, which could affect the recreation setting and detract from their recreation
30 experiences. Construction noise and the resulting reduced opportunities for fishing or hunting could
31 also adversely affect the ambient recreation setting in the vicinity of construction activities and
32 degrade the recreation experience.

33 The overall recreation experience for boaters or bank fishermen in the vicinity of construction areas
34 would be diminished because of elevated noise levels and visual setting disruptions.

35 **Lazy M Marina**

36 Lazy M Marina is a private marina on Italian Slough west of Clifton Court Forebay. The marina is
37 located southwest of the proposed Byron Tract Forebay, west and northwest of a spoil site, siphon,
38 siphon work area, and east of a work area. Construction would last up to 3 years and would
39 primarily occur Monday through Friday for up to 24 hours per day. Vehicular access to the site
40 would be maintained by using Clifton Court Road or a detour. Water access to the marina may be
41 affected during siphon and transmission line construction activities which would occur east of the
42 marina. Siphon and transmission line construction activities require crossing Italian Slough. Marina
43 users coming to and leaving the marina may experience delays as a result of in-slough construction

1 activities. The recreation experience of marina users would be adversely affected by construction
2 activities and noise.

3 ***Other Recreation Opportunities***

4 *On-Water Recreation*

5 Cliff's Marina is upstream of Intake W1 construction area and Clarksburg Marina falls between the
6 construction impact area for Intakes W1 and W2. Similarly, Rivers End Marina & Boat Storage is not
7 within the immediate construction impact area for the Byron Tract Forebay and related facilities
8 near Clifton Court Forebay. Although these and other marinas or fishing sites fall outside of the
9 impact area for noise and visual disruption, the overall recreation experience for boaters or
10 fishermen in the vicinity of construction areas would be diminished because of the elevated noise
11 levels as well as visual setting disruptions. In addition, recreation activities, fishing or boating,
12 within the Fisherman's Cut between Bradford Island and Webb Tract would be disrupted by
13 activities associated with tunnel placement including a concrete batch plant. Overall, construction
14 activities associated with the proposed water conveyance facilities would range from 1 year to up to
15 5 years depending on the site. Work would primarily occur Monday through Friday for up to 24
16 hours per day. In-river construction would be further limited primarily to June 1 through October 31
17 each year. Although dewatering would take place 7 days a week for 24 hours per day, it would not
18 result in adverse noise effects. Weekday construction would reduce the amount of fish and other
19 wildlife in recreation areas in the vicinity of the intakes, resulting in decreased recreation
20 opportunities related to wildlife and fish, causing recreationists to experience a changed recreation
21 setting.

22 *Campgrounds*

23 Nighttime construction activities would require the use of bright lights that would negatively affect
24 nighttime views of and from the work area. This would affect any overnight camping at the
25 recreation sites and areas discussed above, although day use areas that close at sunset would not be
26 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
27 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.4,
28 another nighttime effect on recreation would be construction noise levels that could adversely affect
29 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
30 construction could be infrequent and intermittent, but would adversely affect camping sites.
31 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
32 NOI-1b would be available to address these effects.

33 ***Summary***

34 Construction of Alternative 1C intakes and water conveyance facilities would result in disruption to
35 recreational opportunities that would last from 1 to 5 years. Indirect effects on recreation
36 experiences may occur as a result of impaired access, construction noise, or negative visual effects
37 associated with construction. Although construction may occur year-round and last up to 9 years,
38 construction in the vicinity of identified recreation facilities would last from 1 to 5 years and in-river
39 construction would be primarily limited to June 1 through October 31 each year.

40 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
41 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
42 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could

1 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
2 measures, environmental commitments, and conservation measures would provide several benefits
3 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
4 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
5 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
6 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
7 degradation associated with accidental spills, runoff and sedimentation, and dust could have
8 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
9 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
10 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
11 crane, would be implemented by the BDCP proponents where determined necessary for all covered
12 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
13 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
14 *Commitments*, DWR would implement an environmental commitment that would dispose of and
15 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
16 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
17 of the action alternatives, implementation of CM3 and CM11 will result in protection and
18 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
19 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
20 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
21 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
22 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
23 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
24 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
25 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
26 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
27 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
28 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
29 bicycling, equestrian use, hunting, fishing, and boating.

30 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.4, identifies a number of mitigation
31 measures that would be available to address construction-related visual effects on sensitive
32 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
33 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
34 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
35 addition, the chapter identifies measures to address longer term visual effects associated with
36 changes to the landscape/visual setting from construction and the presence of new water
37 conveyance features. These include developing and implementing a spoil/borrow and RTM area
38 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
39 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
40 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
41 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
42 would also make a commitment to enhance the visual character of the area by creating new wildlife
43 viewing sites and enhancing interest in the construction site by constructing viewing areas and
44 displaying information about the project, which may attract people who may use the recreation
45 facilities to the construction site as part of the visit.

1 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
2 proponents will work with the California Department of Parks and Recreation to help insure the
3 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
4 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
5 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
6 helping to fund or construct elements of the American Discovery Trail and the potential conversion
7 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
8 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
9 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
10 proposal. The BDCP project proponents will also work with DPR to determine if some of the
11 constructed elements of CM1 could incorporate elements of the DPR's proposal.

12 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
13 involve preparation of site-specific construction traffic management plans that would address
14 potential public access routes and provide construction information notification to local residents
15 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
16 of access to affected recreation areas as an environmental commitment. Where construction
17 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
18 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
19 construction sites. These would be designed to be safe, pleasant and would integrate with
20 opportunities to view the construction site as an additional area of interest. These physical facilities
21 would be combined with public information, including sidewalk wayfinding information that would
22 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
23 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
24 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
25 congested roadway segments.

26 Chapter 23, *Noise*, Section 23.4.3.4, discusses that construction noise effects could be addressed
27 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
28 implementation of a complaint/response tracking program (NOI-1b), and an environmental
29 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
30 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
31 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
32 viewing the aesthetic amenities of the area.

33 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
34 2 would ensure continued access to existing recreation experiences. The Delta offers many
35 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
36 all of which would continue to be available for recreationists. However, due to the length of time that
37 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
38 related to temporary disruption of existing recreational activities at facilities within the impact area
39 would be adverse.

40 **CEQA Conclusion:** Construction of Alternative 1C intakes and related water conveyance facilities
41 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
42 years) impacts on well-established recreational opportunities and experiences in the study area
43 because of access, noise, and visual setting disruptions that would result in loss of public use. These
44 impacts would be temporary, but may occur year-round and would occur over the long-term.
45 Mitigation measures, environmental commitments, and AMMs would reduce these construction-

1 related impacts by implementing measures to protect or compensate for effects on wildlife habitat
2 and species; minimize the extent of changes to the visual setting, including nighttime light sources;
3 manage construction-related traffic; and implement noise reduction and complaint tracking
4 measures. However, the level of impact would not be reduced to less than significant because even
5 though mitigation measures and environmental commitments would reduce impacts on wildlife,
6 visual setting, transportation, and noise conditions that could detract from the recreation
7 experience, due to the dispersed effects on the recreation experience across the Delta, it is not
8 certain the mitigation would reduce the level of these impacts to less than significant in all instances
9 such that there would be no reduction of recreational opportunities or experiences over the entire
10 study area. Therefore, these impacts are considered significant and unavoidable. However, the
11 impacts related to construction of the intakes would be less than significant.

12 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

13 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
14 1A.

15 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 16 **Disturbance of Nesting Birds**

17 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
18 Alternative 1A, Impact BIO-75.

19 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 20 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 21 **Transmission Lines and Underground Transmission Lines Where Feasible**

22 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and** 25 **Sensitive Receptors**

26 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel** 29 **Material Area Management Plan**

30 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

33 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
14 **Residents**

15 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
18 **Construction**

19 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
22 **to Prevent Light Spill from Truck Headlights toward Residences**

23 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-4.

25 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
26 **Plan**

27 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
30 **Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 12 **Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
 14 waterways in the study area, including obstructions to boat passage and boat traffic delays, would
 15 occur during the construction of Alternative 1C. Construction of intakes and siphons would include
 16 the installation of cofferdams in the waterways and the use of barges, barge-mounted cranes, or
 17 other large waterborne equipment. Piers or temporary barge unloading facilities could also be
 18 located at the intake sites. Construction equipment, such as barges and dredges, could obstruct boat
 19 passage or cause congestion, as could the placement of cofferdams or barge unloading facilities.
 20 Channel obstructions and potential congestion may pose navigational and safety hazards to boaters.
 21 Reduced boat speed limits could delay boat traffic in the vicinity of the construction sites.

22 **Intakes**

23 Construction of the five Sacramento River intakes associated with Alternative 1C would result in
 24 temporary obstructions to boat passage and navigation and boat traffic delays in this reach of the
 25 Sacramento River. The planned locations of the intakes are generally the same as those proposed for
 26 Alternative 1A, as described previously, with the exception that intake facilities would be
 27 constructed on the west side of the river rather than the east side. As described in the discussion of
 28 Alternative 1A, Impact REC-3, the Sacramento River would remain navigable during construction;
 29 most of the river channel would remain open to passage. Site-specific safety features, including
 30 determination of the temporary speed-restriction zones would be developed under the Mitigation
 31 Measure TRANS-1a that involves the BDCP proponents developing and implementing site-specific
 32 construction traffic management plans, including waterway navigation elements. Within the speed-
 33 restricted zones around the intake areas, high-speed recreation (e.g., waterskiing, wakeboarding,
 34 and tubing) would effectively be eliminated. Mitigation Measure TRANS-1a also involves providing
 35 notification of construction activities in waterways to ensure information about construction site
 36 location(s), construction schedules, and identification of no-wake zone and/or detours is posted at
 37 Delta marinas and public launch ramps. Although there is sufficient width in the channel to allow
 38 boat passage, boaters could experience minor delays related to construction speed zones. However,
 39 this could still result in effects on boat navigation and related boating recreation (waterskiing,
 40 wakeboarding, tubing), which would be considered adverse because, although temporary, the
 41 effects would be long-term, lasting more than 2 years.

1 **Siphons**

2 Construction of the four siphons associated with Alternative 1C would result in temporary
3 obstruction of boat passage and may also cause boat traffic delays or navigation hazards to boaters.
4 The siphons would cross four navigable waterways.

- 5 ● Elk Slough
- 6 ● Miner Slough
- 7 ● Rock Slough
- 8 ● Italian Slough

9 Culvert siphons would be constructed as culvert structures using cofferdams and open cut-and-
10 cover construction methods with conventional cast-in-place concrete structures. For most siphons, a
11 bypass channel would be constructed to redirect water away from the work area. For larger sloughs
12 or where other restrictions exist, culvert siphons could be constructed in two or three phases, each
13 phase lasting up to 1 year, depending on construction permit conditions. In each phase, a temporary
14 cofferdam would be installed that would occupy as much as one-half of the width of the waterway.

15 The siphon across Elk Slough is located about 2.6 miles upstream from where Elk Slough joins Sutter
16 Slough. Elk Slough is a narrow, winding waterway with no recreation facilities. Upstream, passage to
17 Elk Slough is blocked by the Sacramento River levee road; therefore, boats can enter the slough only
18 from the downstream end.

19 The siphon location on Rock Slough is near the west end of the slough, where the slough meets the
20 Contra Costa Canal and boat navigation ends.

21 Boat traffic volume in the vicinity of these two siphons is expected to be low, and most waterway
22 use is likely by anglers. Effects on boat passage and navigation at the siphon locations on Elk Slough
23 and Rock Slough would be minor.

24 The siphon location on Miner Slough is 2 miles west of where the waterway meets Sutter Slough and
25 5.3 miles upstream from where the waterway meets Cache Slough. Arrowhead Harbor Marina, with
26 76 boat berths, is a quarter-mile west of the siphon site. The siphon location on Italian Slough is
27 located about one-third of a mile east of the west end of the slough, where navigation ends and
28 where the Lazy M Marina is located, and about 2.5 miles west of the slough's junction with Old River.
29 The marina provides about 35 berths, substantial dry storage, and a boat ramp and is likely the
30 source of most boat traffic on Italian Slough.

31 Boat traffic volume in the vicinity of the siphons on Miner and Italian Sloughs may be high at times
32 because of the proximity of these marinas. Because boat traffic would be confined to a limited
33 portion of the channel by the cofferdams, increased boat traffic congestion is likely to occur during
34 peak use times (primarily summer weekends). However, boaters may choose to bypass the siphon
35 construction site on Miner Slough by using the reach between the marina and Cache Slough.
36 Although boats would not be able to use the portion of the waterway where construction was
37 occurring, the use of each of these waterways for recreational navigation would be allowed to
38 continue during construction.

1 **Temporary Barge Unloading Facilities**

2 Alternative 1C includes two barge unloading facilities to be built on Cache Slough and the
3 Sacramento River (Mapbook Figure 15-3). Construction and use of these facilities could also result
4 in temporary effects on boat passage and navigation. The facilities would be used to transfer
5 pipeline construction equipment and materials to and from construction sites and would be
6 removed after construction was completed. Construction of the facilities may require partial channel
7 closures and use of equipment within the waterways. The adverse effects from the construction of
8 the barge unloading facilities would be temporary, lasting approximately 5 years.

9 The Cache Slough barge facility would occupy about 1,200 feet of the east bank of the slough, just
10 south of the junction with Miner Slough and the Sacramento River Deep Water Ship Channel. The
11 slough is about 650 feet wide at this location. Therefore, even if the barge facility and barge
12 operations at this location occupied a substantial portion of the river, several hundred feet of
13 unimpeded channel width would remain, and there would be little effect on boat passage. Also, boat
14 traffic volume is likely low at this location, although some traffic moving between Miner Slough and
15 Arrowhead Marina (located about 5 miles north on Miner Slough) and Cache Slough or the
16 Sacramento River (3 miles to the south) would be expected.

17 The Sacramento River barge facility would be about 0.5 mile east of (upstream from) the river's
18 junction with Cache Slough and would occupy about 500 feet of the south riverbank. The river
19 channel is about 700 feet wide at this location. Therefore, even if the barge facility and barge
20 operations at this location occupied a substantial portion of the river, several hundred feet of
21 unimpeded channel width would remain. However, peak boat traffic volume is likely to be high at
22 this location. Viera's Resort, with 160 boat berths and a boat launch, and Long Island, with about 50
23 private homes with docks, are within 1 mile upstream. The City of Rio Vista, with two boat launches
24 and a marina, is 2 miles downstream. Because boat traffic would be confined to a limited portion of
25 the channel by the barge facility and barge unloading operations, increased boat traffic congestion
26 may occur during peak use times (primarily summer weekends).

27 Alternative 1C would result in the creation of obstructions to boat passage causing boat traffic
28 delays and impediments to boat movement. Overall, effects on temporary alteration of recreational
29 navigation would be considered adverse. Mitigation Measure TRANS-1a would be available to
30 reduce effects to marine navigation by development and implementation of site-specific
31 construction traffic management plans, including specific measures related to management of
32 barges and stipulations to notify the commercial and leisure boating communities of proposed barge
33 operations in the waterways. Additionally, BDCP proponents would contribute funds for the
34 construction of new recreation opportunities as well as for the protection of existing recreation
35 opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would
36 also assist in funding the expansion of state recreation areas in the Delta as described in
37 Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for the reopening
38 of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and
39 potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract,
40 and south Delta. The funds will be transferred prior to, or concurrent with, commencement of
41 construction of the BDCP. This commitment serves to compensate for the loss of recreational
42 opportunities within the project area by providing a recreational opportunity
43 downstream/upstream in the same area for the same regional recreational users. These
44 commitments are further described in Appendix 3B, *Environmental Commitments*.

1 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. BDCP would
 2 contribute funds to further the DBW's aquatic weed control programs in the Delta. Enhanced ability
 3 to control these invasive vegetation would lead to increased recreation opportunities which would
 4 compensate for the loss of recreational opportunities within the project area by providing a
 5 recreational opportunity downstream/upstream in the same area for the same regional recreational
 6 users. The funds will be transferred prior to, or concurrent with, commencement of construction of
 7 the BDCP. This commitment is described in Appendix 3B, *Environmental Commitments*.

8 CM13 (*Invasive Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and
 9 other IAV throughout the Plan Area. However, the BDCP proponents would also commit to partner
 10 with existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
 11 Agriculture Research Service, University of California Cooperative Extension Weed Research and
 12 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
 13 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
 14 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
 15 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
 16 initial control efforts would occur to maximize the effectiveness of the conservation measure.

17 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
 18 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
 19 proponents would also ensure through various outreach methods that recreationists were aware of
 20 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
 21 Cut). Nonetheless, effects on waterskiing, wakeboarding or tubing opportunities would last
 22 approximately 5 years (long-term) and would be considered adverse because of the reduced
 23 recreation opportunity and experiences expected to exist near construction activity.

24 **CEQA Conclusion:** Alternative 1C would result in significant impacts on boat passage and navigation
 25 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
 26 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
 27 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
 28 would also result in temporary impacts on wakeboarding, waterskiing, and tubing because of
 29 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
 30 marine navigation by development and implementation of site-specific construction traffic
 31 management plans, including specific measures related to management of barges and stipulations to
 32 notify the commercial and leisure boating communities of proposed barge operations in the
 33 waterways. While the environmental commitments would reduce impacts on water-based
 34 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
 35 opportunities for those eliminated during construction, these impacts would be long-term and
 36 therefore, considered significant and unavoidable.

37 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management** 38 **Plan**

39 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 40 Impact TRANS-1.

1 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a** 2 **Result of Constructing the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** Overall, the effect on recreational fishing in the study area would be as described
4 under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section
5 11.3.4.4, Sacramento River and Delta region fish populations would not be affected by changes to
6 localized water quality conditions, underwater noise, fish stranding or other physical disturbances,
7 or reduced habitat areas such that recreational fishing opportunities would be substantially reduced
8 during construction. BDCP environmental commitments to prevent water quality effects include
9 environmental training; implementation of stormwater pollution prevention plans, erosion and
10 sediment control plans, hazardous materials management plans, and spill prevention, containment,
11 and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations
12 plan (Appendix 3B, *Environmental Commitments*). RTM would be removed from RTM storage areas
13 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
14 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
15 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
16 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
17 driving. Although fish populations likely would not be affected to the degree that fishing
18 opportunities would be substantially reduced, construction conditions would introduce noise and
19 visual disturbances that would affect the recreation experience for anglers.

20 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
21 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
22 setting disruptions could distract from the recreation experience including on weekends. However,
23 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
24 specific noise-generating activities near recreation areas would be scheduled to the extent possible
25 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
26 also be available to address construction-related visual effects on sensitive receptors from
27 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
28 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
29 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
30 chapter identifies measures to address longer term visual effects associated with changes to the
31 landscape/visual setting from construction and the presence of new water conveyance features.
32 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
33 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
34 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
35 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
36 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
37 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
38 locations. Additionally, anglers could move to other locations along the Sacramento River and
39 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
40 sites further removed from areas affected by construction. This effect would not be adverse.

41 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
42 construction activities would be considered less than significant because the BDCP would include
43 environmental commitments to prevent water quality effects include environmental training;
44 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
45 hazardous materials management plans, and spill prevention, containment, and countermeasure
46 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,

1 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
2 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
3 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
4 that there would be no long-term reduction of local fishing opportunities and experiences. This
5 impact would be less than significant.

6 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

7 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
8 1A.

9 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 10 **of Pile Driving and Other Construction-Related Underwater Noise**

11 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
12 Alternative 1A, Impact AQUA-1.

13 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 14 **and Other Construction-Related Underwater Noise**

15 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
16 Alternative 1A, Impact AQUA-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response** 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 24 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 25 **Transmission Lines and Underground Transmission Lines Where Feasible**

26 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and** 29 **Sensitive Receptors**

30 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel** 33 **Material Area Management Plan**

34 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
35 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Impact REC-5 Result in Long-Term Reduction of Recreational Fishing Opportunities as a
17 Result of the Operation of the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Operation of Alternative 1C may result in changes in entrainment, spawning, rearing
19 and migration. However, in general, effects on (non-covered) fish species that are popular for
20 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
21 recreational fishing. While there are some significant impacts to specific non-covered species, as
22 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.4, they are typically limited to
23 specific rivers and not the population of that species as a whole. The effect is not adverse because it
24 would not result in a substantial long-term reduction in recreational fishing opportunities

25 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
26 operation of Alternative 1C would be considered less than significant because any impacts to fish
27 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
28 would not impact the species population of any popular sportfishing species overall.

29 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial
30 Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-
31 of-Delta Reservoirs**

32 Alternative 1C would have the same operational scenario as Alternative 1A, and as shown in Table
33 15-12a and Table 15-12b, operation of Alternative 1C would result in the same changes as discussed
34 under Alternative 1A. Also see Chapter 3, *Description of Alternatives*, Section 3.6.4.2, for detailed
35 information on the operational scenarios, and Appendix 5A, *Modeling Methodology*, for an
36 explanation of the CALSIM II model and assumptions.

1 Existing Conditions (CEQA Baseline) Compared to Alternative 1C (2060)

2 As shown in Table 15-12a and Table 15-12b, under Alternative 1C there would be from 1 to 20
3 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
4 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
5 Trinity Lake, Shasta Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under
6 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
7 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
8 the exact extent of the changes due to implementation of the action alternative using these model
9 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
10 differences between Existing Conditions and Alternative 1C cannot be isolated in this comparison.
11 Please refer to the comparison of the No Action Alternative (2060) to Alternative 1C (2060) for a
12 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
13 operation of Alternative 1C.

14 No Action Alternative (2060) Compared to Alternative 1C (2060)

15 The comparison of Alternative 1C (2060) to the No Action Alternative (2060) condition most closely
16 represents changes in reservoir elevations that may occur as a result of operation of the alternative
17 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
18 *Methodology*). Operation of Alternative 1C would result in changes in the frequency with which the
19 end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, New
20 Melones Lake, and San Luis Reservoir would fall below levels identified as important water-
21 dependent recreation thresholds (Table 15-12a and Table 15-12b). In all but one instance (San Luis
22 Reservoir), the CALSIM II modeling results indicate that reservoir levels under Alternative 1C
23 operations would fall below the individual reservoir thresholds less frequently than under No
24 Action Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at
25 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake, and would be
26 considered beneficial effects of Alternative 1C operations. Operation of Alternative 1C would not
27 adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these
28 conditions represent improved recreation conditions under operation of Alternative 1C because
29 there would be fewer years in which end-of-September reservoir levels would fall below the
30 recreation thresholds thus indicating better boating opportunities, when compared to No Action
31 Alternative (2060) conditions.

32 The modeling for San Luis Reservoir indicates there could be up to 6 additional years which the
33 reservoir level would fall below the reservoir boating threshold at the end of September for the
34 Dinosaur Point boat launch. This is a less than 10% change and would not result in a substantial
35 reduction in recreation opportunities or experiences. In addition, at the Basalt boat launch, which is
36 accessible to elevation 340 feet, operations under Alternative 1C would result in only one additional
37 year for which reservoir elevations would fall below the recreation threshold relative to the No
38 Action Alternative (2060) condition. This is also a less than 10% change and would not be
39 considered a substantial reduction in recreation opportunities. Shoreline fishing would still be
40 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
41 would be available. These changes would not be adverse.

42 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
43 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
44 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to

1 Alternative 1C (2060) operations would fall below the individual reservoir thresholds less
2 frequently than under No Action Alternative (2060). These changes in reservoir and lake elevations
3 would result in a less-than-significant impact on recreation opportunities and experiences at Trinity
4 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be
5 fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No
6 Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on
7 recreation opportunities and experiences. Operation of Alternative 1C would not substantially affect
8 water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the
9 modeling indicates that reservoir levels could exceed the recreation threshold up to 6 additional
10 years under Alternative 1C operations relative to the No Action Alternative (2060) condition. This is
11 a less than 10% change and is not considered a substantial reduction in recreation opportunities or
12 experiences at this reservoir. Overall, these conditions represent improved recreation conditions
13 under operation of Alternative 1C because there would be fewer years in which end-of-September
14 reservoir levels would fall below the recreation thresholds thus indicating better boating
15 opportunities, when compared to No Action Alternative (2060) conditions. No mitigation is
16 required.

17 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 18 **Result of Maintenance of the Proposed Water Conveyance Facilities**

19 **NEPA Effects:** Intake maintenance activities, such as painting, cleaning, making repairs, conducting
20 biofouling prevention, conducting corrosion prevention, and maintaining equipment, could have a
21 minor effect on boat passage and navigation in the Sacramento River. Repair efforts requiring
22 barges and divers, as well as activities to remove debris and sediment, could cause a temporary
23 impediment to boat movement and result in slowing of Sacramento River boat traffic in the
24 immediate vicinity of the affected intake structure and reduce opportunities for waterskiing,
25 wakeboarding and tubing in the immediate vicinity of the intake structures. However, boat passage
26 and navigation on the river would still be possible around any barges or other maintenance
27 equipment and these effects would be expected to be short-term (2 years or less). In addition, the
28 areas around the proposed intakes are not usually used for waterskiing, wakeboarding and tubing,
29 and many miles of the Sacramento River would still be usable for these activities during periodic
30 maintenance events.

31 Maintenance of intake facilities would result in periodic temporary but not substantial adverse
32 effects on boat passage and water-based recreational activities. Any effects would be short-term and
33 intermittent. Other facility maintenance activities would occur on land and would not affect boat
34 passage and navigation. Implementation of the environmental commitment to provide notification
35 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
36 *Commitments*) would reduce these effects. Effects on boat passage and navigation resulting from the
37 maintenance of intake facilities would be short-term and intermittent and would not be considered
38 adverse.

39 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
40 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
41 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
42 environmental commitment to provide notification of construction and maintenance activities in
43 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
44 Intake maintenance impacts on recreation would be considered less than significant because

1 impacts, if any, on public access or public use of established recreation facilities would last for 2
2 years or less. Mitigation is not required.

3 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
4 **Result of Maintenance of the Proposed Water Conveyance Facilities**

5 **NEPA Effects:** Maintenance activities for the proposed water conveyance facilities may include
6 painting, landscaping, equipment replacement, and mechanical repairs that would be short-term
7 and intermittent and would not affect recreation opportunities because maintenance would occur
8 within the individual facility right-of-way, which does not include any recreation facilities or
9 recreation use areas. In addition, there would be no public recreation use of the new facilities.
10 Maintenance activities would not result in any significant noise that would affect nearby
11 recreational opportunities. Therefore, there would be no effect on recreation opportunities as a
12 result of maintenance of the proposed water conveyance facilities. There would be no adverse
13 effects.

14 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
15 would not result in any changes to land-based recreational opportunities. Therefore, there would be
16 no impact. Mitigation is not required.

17 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
18 **Implementing Conservation Measures 2-21**

19 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
20 components as part of Alternative 1C could have effects related to recreational fishing that are
21 similar in nature to those discussed above for construction, and operation and maintenance of
22 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
23 effects would likely be substantially lower because the nature of the activities associated with
24 implementing the conservation components would be different—less heavy construction equipment
25 would be required and the restoration actions would be implemented over a longer time frame than
26 CM1. Potential effects from implementation of the conservation components would be dispersed
27 over a larger area and would generally involve substantially fewer construction and operation
28 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
29 components would be expected to result in long-term benefits to aquatic species. Additional
30 discussion related to the individual conservation measures is provided below.

31 With regards to fishing opportunities, effects of implementing the conservation components under
32 Alternative 1C would be similar to those described for Alternative 1A. CM2–CM21 would be
33 expected to improve fishing opportunities in the Study area although some effect on fishing
34 opportunities could take place during implementation of the conservation measures. Overall,
35 implementing the proposed conservation components would be expected to provide beneficial
36 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

37 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
38 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
39 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
40 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
41 implementation stage, these measures could result in impacts on fishing opportunities by
42 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
43 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased

1 onshore fishing opportunities. These impacts would be considered less than significant because the
2 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
3 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
4 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
5 and although these CMs would result in highly localized reductions of predatory species, overall,
6 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
7 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.4). Construction of
8 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
9 recreational fishing. The potential impact on covered and non-covered sport fish species from
10 construction activities would be considered less than significant because the BDCP would include
11 environmental commitments to prevent water quality effects include environmental training;
12 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
13 hazardous materials management plans, and spill prevention, containment, and countermeasure
14 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
15 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
16 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
17 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
18 implementation of the other conservation components. Because construction of the conservation
19 measure component facilities would be less intense and of shorter duration than construction of
20 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
21 the construction-related impacts on recreational fishing associated with the other conservation
22 measures to a less-than-significant level. Further, the individual facilities or conservation elements
23 will undergo additional environmental review and permitting which will include identification of
24 site-specific measures to further protect resources.

25 Environmental commitments that will reduce construction-related impacts on recreation include a
26 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
27 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
28 REC-3, above). In addition, a number of mitigation measures will address construction-related
29 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
30 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
31 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
32 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
33 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
34 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
35 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.4). Mitigation measures NOI-1a
36 and NOI-1b will address construction-related noise concerns (see additional discussion under
37 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.4). Finally, should
38 construction of conservation measure facilities require pile-driving, mitigation measures to protect
39 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
40 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.4).

41 In the long term, the impact on fishing opportunities would be considered beneficial because the
42 conservation measures are intended to enhance aquatic habitat and fish abundance.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
30 **Construction**

31 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 24 **of Pile Driving and Other Construction-Related Underwater Noise**

25 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 26 Alternative 1A, Impact AQUA-1.

27 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 28 **and Other Construction-Related Underwater Noise**

29 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 30 Alternative 1A, Impact AQUA-1.

31 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 32 **as a Result of Implementing Conservation Measures 2–21**

33 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 34 conservation components under Alternative 1C would be similar to those described for Alternative
 35 1A. Implementing the conservation measures could result in an adverse effect on recreation by

1 limiting boating by reducing the extent of navigable waterways available to boaters. Once
2 implemented, the conservation measures could provide beneficial effects to recreation by expanding
3 the extent of navigable waterways available to boaters, improving and expanding boat launch
4 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

5 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
6 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
7 BDCP proponents would implement environmental commitments to include a noise abatement plan
8 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
9 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
10 available to address construction-related effects on recreational boating by reducing the degree of
11 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
12 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
13 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
14 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
15 and transportation safety and access conditions of the marina (see additional discussion under
16 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.4).
17 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
18 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
19 *Noise*, Section 23.4.3.4).

20 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
21 some habitat restoration and enhancement measures and other conservation measures would limit
22 some opportunities for boating and boating-related recreation by reducing the extent of navigable
23 water available to boaters. Temporary effects would also stem from construction, which may limit
24 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
25 implementation. However, BDCP conservation measures would also lead to an enhanced boating
26 experience by expanding the extent of navigable waterways available to boaters, improving and
27 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
28 navigation. Because these measures would not be anticipated to result in a substantial long-term
29 disruption of boating activities, this impact is considered less than significant for the conservation
30 measures, with the exception of CM18, discussed further below.

31 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
32 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
33 The BDCP proponents would implement environmental commitments to include a noise abatement
34 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
35 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
36 address construction-related impacts on recreational boating by reducing the degree of aesthetic
37 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
38 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
39 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
40 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
41 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
42 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.4). Mitigation measures NOI-1a
43 and NOI-1b will address construction-related noise concerns (see additional discussion under
44 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.4). Implementation of
45 these measures, as determined applicable to construction of this facility under future site-specific

1 environmental review, would reduce impacts on recreational boating to less than significant. No
2 additional mitigation would be required.

3 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
4 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
5 **Transmission Lines and Underground Transmission Lines Where Feasible**

6 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
9 **Sensitive Receptors**

10 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
13 **Material Area Management Plan**

14 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

17 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
20 **Extent Feasible**

21 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
24 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

25 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
28 **Landscaping Plan**

29 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
32 **Construction**

33 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 24 **Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** Implementing the conservation components under Alternative 1C would have similar
 26 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.
 27 Implementing the conservation measures could result in an adverse effect on recreation
 28 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 29 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 30 suitable for hiking, nature photography, or other similar activity. However, environmental
 31 commitments would reduce these effects, and implementation of the measures would also restore
 32 or enhance new potential sites for upland recreation thereby improving the quality recreational
 33 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 34 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 35 mechanism and would not result in a physical change to upland areas; construction under CM18,
 36 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 37 action primarily located at boat launches and would not affect upland recreation areas and related
 38 opportunities. These measures are not discussed further in this analysis.

1 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 2 conservation measures would temporarily limit opportunities for upland recreational activities
 3 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 4 construction activities would also temporarily compromise the quality of upland recreation in and
 5 around these areas. Additionally, it is possible that current areas of upland recreation would be
 6 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 7 activities. These impacts on upland recreational opportunities would be considered less than
 8 significant because the BDCP would include environmental commitments that would require BDCP
 9 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 10 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 11 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 12 upland recreation and the measure would improve the quality of existing recreational opportunities
 13 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 14 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 15 considered less than significant.

16 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 17 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 18 **Addressing Recreation Resources**

19 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 20 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 21 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 22 provide guidance for recreation resource issues as overviewed in *Section 17.2, Regulatory Setting*.
 23 This overview of plan and policy compatibility evaluates whether Alternative 1C is compatible or
 24 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 25 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 26 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 27 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 28 physical effects of Alternative 1C on recreation resources is addressed in Impacts REC-1 through
 29 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.4.3.4, and Chapter 17, *Aesthetics*
 30 *and Visual Resources*, Section 17.3.3.4. The following is a summary of compatibility evaluations
 31 related to recreation resources for plans and policies relevant to the BDCP.

- 32 ● *The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta*
 33 *and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General*
 34 *Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National*
 35 *Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation*
 36 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
 37 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
 38 resources and promote a range of opportunities to visitors to these areas. Construction and
 39 operation of the proposed water conveyance facilities and other conservation measures would
 40 not affect recreation opportunities in these areas and would be compatible with these plans.
- 41 ● *The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), Delta*
 42 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
 43 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
 44 all focused on the protection of resources, including recreation resources, within the Delta.
 45 These plans have policies, objectives, or goals intended to protect and enhance existing

1 recreation and encourage development of new local and regional opportunities. Constructing
 2 the proposed conveyance facilities would result in long term disruption to existing established
 3 recreation areas in the study area and change the nature of the recreation setting. The proposed
 4 water conveyance elements could be considered incompatible with measures to protect existing
 5 recreation opportunities in the study area.

- 6 ● The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
 7 and the Great California Delta Trail *Blueprint Report for Contra Costa and Solano Counties* all
 8 promote development of a regional trail system providing a continuous regional recreational
 9 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
 10 regional and local efforts to design proposed restoration areas to be compatible with and
 11 complement the goals of creating a regional trail network and where feasible to adapt
 12 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 13 ● Regional plans and those geared toward the management of specific areas, including the *Stone*
 14 *Lakes National Wildlife Refuge CCP*, *Cosumnes River Preserve Management Plan*, *Brannan Island*
 15 *and Franks Tract State Recreation Areas General Plan*, *Yolo Bypass Wildlife Area Land*
 16 *Management Plan*, *the Yolo County General Plan*, *Lower Sherman Island Wildlife Area Land*
 17 *Management Plan*, *San Francisco Bay Plan*, *Suisun Marsh Protection Plan*, and *Solano County*
 18 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
 19 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
 20 may create disruptions related to facility and restoration improvements. Proposed restoration
 21 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
 22 compatible with and complement the current management direction for these areas and would
 23 be required to adapt restoration proposals to meet current policy established for managing
 24 these areas.
- 25 ● The BDCP would be constructed and operate in compliance with regulations related to boat
 26 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
 27 Department of Boating and Waterways), and federal (including the U.S. Coast Guard) boating
 28 law enforcement. The alternative would be compatible with California State Land Commission
 29 regulations related to recreational piers or marinas.
- 30 ● EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
 31 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
 32 alternative.
- 33 ● Alternative 1C would result in the construction of permanent and temporary features associated
 34 with the proposed water conveyance facility across land governed by the general plans of
 35 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
 36 policies related to the protection of recreation resources and encourage the development of new
 37 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
 38 recognize the Delta as an area of international importance and as a major recreational resource
 39 of these counties. Construction activities that disrupt and degrade recreation opportunities in
 40 the study area would be incompatible with policies designed to protect recreation resources,
 41 including those intended to protect open space and natural areas and those that discourage
 42 development of public facilities and infrastructure unless it is related to agriculture, natural
 43 resources and open space, and has recreational value.

44 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 45 physical consequence to the environment. The physical effects are discussed in impacts REC-1

1 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
2 the alternative with relevant plans and polices.

3 **15.3.3.5 Alternative 2A—Dual Conveyance with Pipeline/Tunnel and Five** 4 **Intakes (15,000 cfs; Operational Scenario B)**

5 For the purposes of assessment of effects on recreation, Alternative 2A is the same as Alternative 1A,
6 with the following exceptions.

- 7 • Under Alternative 2A, a total of five intake facilities would be constructed and operated. Intake
8 locations are 1 through 3 in addition to either 4 and 5, or 6 and 7.
- 9 • The operations scenario for Alternative 2A differs from Alternative 1A (scenario B).
- 10 • An operable barrier would be placed at the head of Old River at the confluence with the San
11 Joaquin River.

12 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
13 Alternative 2A (Mapbook Figure 15-1). Specific effects on recreation areas or sites are discussed
14 below.

15 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private** 16 **Commercial Recreation Facility Available for Public Access as a Result of the Location of** 17 **Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Effects on recreation as a result of the post-construction location of water conveyance
19 facilities associated with Alternative 2A would be similar to those described under Alternative 1A,
20 Impact REC-1. Proposed placement of the Alternative 2A water conveyance facilities would not fall
21 within the designated boundaries or conflict with any existing public use recreation site and would
22 not result in the permanent disruption or reduction of any well-established recreation activity or
23 site, including parks, marinas, or other designated areas. Construction of Intakes 6 and 7 instead of
24 Intakes 4 and 5 would not result in any additional permanent effects on recreation sites or areas.
25 Therefore, there would be no adverse effects. Effects on recreation related to construction of the
26 water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and*
27 *Visual Resources*, Section 17.3.3.5, and Chapter 23, *Noise*, Section 23.4.3.5, for additional discussion
28 of these topics.

29 **CEQA Conclusion:** The alternative would not result in the permanent displacement of any well-
30 established public use or private commercial recreation facility available for public access.
31 Therefore, impacts are considered less than significant. No mitigation is required.

32 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences** 33 **as a Result of Constructing the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** Effects on recreation as a result of temporarily disrupting the recreation
35 opportunities and uses would be similar to those described under Alternative 1A, Impact REC-2. No
36 additional recreation sites or areas would be affected if Intakes 6 and 7 were constructed instead of
37 Intakes 4 and 5. Construction of Alternative 2A intakes and water conveyance facilities would result
38 in temporary effects related to disruption of recreational opportunities and experiences at seven
39 recreation sites in the study area during construction. Indirect effects on recreation experiences may

1 occur as a result of impaired access, construction noise, or negative visual effects associated with
2 construction.

3 ***Other Recreation Opportunities***

4 *On-Water Recreation*

5 Cliff's Marina is upstream of Intake 1 construction impact area and Clarksburg Marina falls between
6 the construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina &
7 Boat Storage sites are not within the construction impact area for the Byron Tract Forebay and
8 related facilities near Clifton Court Forebay, and there are no recreation sites within the impact area
9 for the operable barrier at the head of Old River and San Joaquin River. Although these facilities and
10 other marinas or fishing sites fall outside of the impact area for noise, the overall recreation
11 experience upstream or downstream of these sites may fall within the noise impact area and could
12 experience diminished recreation opportunities because of the elevated noise levels as well as visual
13 setting disruptions over the course of intake installation. Overall, construction activities associated
14 with the proposed water conveyance facilities would range from 1 year to up to 5 years depending
15 on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river
16 construction would be further limited primarily to June 1 through October 31 each year. Although
17 dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse
18 noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation
19 areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife
20 and fish, causing recreationists to experience a changed recreation setting.

21 *Campgrounds*

22 Nighttime construction activities would require the use of bright lights that would negatively affect
23 nighttime views of and from the work area. This would affect any overnight camping at the
24 recreation sites and areas discussed above, although day use areas that close at sunset would not be
25 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
26 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.5,
27 another nighttime effect on recreation would be construction noise levels that could adversely affect
28 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
29 construction could be infrequent and intermittent, but would adversely affect camping sites.
30 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
31 NOI-1b would be available to address these effects.

32 ***Summary***

33 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
34 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
35 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.5,
36 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.5, Chapter 19, *Transportation*, Section
37 19.3.3.5, and Chapter 23, *Noise*, Section 23.4.3.5, for additional detail related to waterfowl/wildlife,
38 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1A,
39 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
40 within the construction impact area.

41 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
42 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could

1 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
2 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
3 measures, environmental commitments, and conservation measures would provide several benefits
4 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
5 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
6 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
7 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
8 degradation associated with accidental spills, runoff and sedimentation, and dust could have
9 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
10 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
11 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
12 crane, would be implemented by the BDCP proponents where determined necessary for all covered
13 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
14 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
15 *Commitments*, DWR would implement an environmental commitment that would dispose of and
16 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
17 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
18 of the action alternatives, implementation of CM3 and CM11 will result in protection and
19 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
20 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
21 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
22 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
23 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
24 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
25 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
26 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
27 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
28 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
29 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
30 bicycling, equestrian use, hunting, fishing, and boating.

31 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.5, identifies a number of mitigation
32 measures that would be available to address construction-related visual effects on sensitive
33 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
34 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
35 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
36 addition, the chapter identifies measures to address longer term visual effects associated with
37 changes to the landscape/visual setting from construction and the presence of new water
38 conveyance features. These include developing and implementing a spoil/borrow and RTM area
39 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
40 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
41 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
42 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
43 would also make a commitment to enhance the visual character of the area by creating new wildlife
44 viewing sites and enhancing interest in the construction site by constructing viewing areas and
45 displaying information about the project, which may attract people who may use the recreation
46 facilities to the construction site as part of the visit.

1 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
2 proponents will work with the California Department of Parks and Recreation to help insure the
3 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
4 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
5 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
6 helping to fund or construct elements of the American Discovery Trail and the potential conversion
7 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
8 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
9 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
10 proposal. The BDCP project proponents will also work with DPR to determine if some of the
11 constructed elements of CM1 could incorporate elements of the DPR's proposal.

12 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
13 involve preparation of site-specific construction traffic management plans that would address
14 potential public access routes and provide construction information notification to local residents
15 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
16 of access to affected recreation areas as an environmental commitment. Where construction
17 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
18 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
19 construction sites. These would be designed to be safe, pleasant and would integrate with
20 opportunities to view the construction site as an additional area of interest. These physical facilities
21 would be combined with public information, including sidewalk wayfinding information that would
22 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
23 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
24 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
25 congested roadway segments.

26 Chapter 23, *Noise*, Section 23.4.3.5, discusses that construction noise effects could be addressed
27 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
28 implementation of a complaint/response tracking program (NOI-1b), and an environmental
29 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
30 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
31 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
32 viewing the aesthetic amenities of the area.

33 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
34 2 would ensure continued access to existing recreation experiences. The Delta offers many
35 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
36 all of which would continue to be available for recreationists. However, due to the length of time that
37 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
38 related to temporary disruption of existing recreational activities at facilities within the impact area
39 would be adverse.

40 **CEQA Conclusion:** Construction of the Alternative 2A intakes and related water conveyance facilities
41 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
42 years) impacts on well-established recreational opportunities and experiences in the study area
43 because of access, noise, and visual setting disruptions. These impacts would be temporary, but may
44 occur year-round. Mitigation measures, environmental commitments, and AMMs would reduce
45 these construction-related impacts by implementing measures to protect or compensate for effects

1 on wildlife habitat and species; minimize the extent of changes to the visual setting, including
 2 nighttime light sources; manage construction-related traffic; and implement noise reduction and
 3 complaint tracking measures. However, the level of impact would not be reduced to less than
 4 significant because even though mitigation measures and environmental commitments would
 5 reduce the impacts on wildlife, visual setting, transportation, and noise conditions that could detract
 6 from the recreation experience, due to the dispersed effects on the recreation experience across the
 7 Delta, it is not certain the mitigation would reduce the level of these impacts to less than significant
 8 in all instances such that there would be no reduction of recreational opportunities or experiences
 9 over the entire study area. Therefore, these impacts are considered significant and unavoidable.
 10 However, the impacts related to construction of the intakes would be less than significant.

11 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

12 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 13 1A.

14 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 15 **Disturbance of Nesting Birds**

16 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 17 Alternative 1A, Impact BIO-75.

18 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 19 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 20 **Transmission Lines and Underground Transmission Lines Where Feasible**

21 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and** 24 **Sensitive Receptors**

25 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel** 28 **Material Area Management Plan**

29 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

32 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the** 35 **Extent Feasible**

36 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
10 **Residents**

11 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
5 **Result of Constructing the Proposed Water Conveyance Facilities**

6 **NEPA Effects:** Effects on recreation as a result of temporarily altering recreation navigation during
7 construction of intakes and barge unloading facilities would be similar to those described under
8 Alternative 1A, Impact REC-3. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not
9 result in substantially different effects on recreational navigation. Alternative 2A also would involve
10 construction and operation of an operable barrier at the head of Old River (Mapbook Figure 15-1).

11 Direct effects on boat passage and navigation on the Sacramento River would result from
12 construction of the intakes. Effects could include reduced access and delays to boat passage and
13 navigation related to the narrower available river width and temporary speed zones. However, boat
14 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
15 Water-based recreational activities such as waterskiing, wakeboarding, or tubing are also low. In
16 addition, there is sufficient width in the channel to allow boat passage, with minor delays related to
17 construction speed zones. These effects on boat passage and navigation would be reduced with the
18 implementation of mitigation measure TRANS-1a that involves the BDCP proponents developing
19 and implementing site-specific construction traffic management plans, including waterway
20 navigation elements and providing notification of construction activities in waterways to ensure
21 information about construction site location(s), construction schedules, and identification of no-
22 wake zone and/or detours is posted at Delta marinas and public launch ramps. Nonetheless, these
23 effects would be long-term, lasting approximately 5 years and would be considered adverse because
24 of the reduced recreation opportunity and experiences expected to exist near construction activity.

25 Construction of the six temporary barge unloading facilities would result in adverse effects on boat
26 passage and navigation on waterways in the study area, including the creation of obstructions to
27 boat passage and associated boat traffic delays and temporary partial channel closures that could
28 impede boat movement and eliminate recreational opportunities. In waterways where waterskiing,
29 wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading
30 facilities would be eliminated during construction. Construction of the operable barrier at the head
31 of Old River would have only short-term effects on recreational boating access on Old River. The
32 barrier would have a boat lock that would restore boating access once construction is complete.

33 Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by
34 development and implementation of site-specific construction traffic management plans, including
35 specific measures related to management of barges and stipulations to notify the commercial and
36 leisure boating communities of proposed barge operations in the waterways. Additionally, BDCP
37 proponents would contribute funds for the construction of new recreation opportunities as well as
38 for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the
39 Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in
40 the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds
41 could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-
42 Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin,
43 the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent
44 with, commencement of construction of the BDCP. This commitment serves to compensate for the

1 loss of recreational opportunities within the project area by providing a recreational opportunity
2 downstream/upstream in the same area for the same regional recreational users. These
3 commitments are further described in Appendix 3B, *Environmental Commitments*.

4 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
5 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
6 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
7 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
8 Agriculture Research Service, University of California Cooperative Extension Weed Research and
9 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
10 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
11 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
12 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
13 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
14 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
15 Enhanced ability to control these invasive vegetation would lead to increased recreation
16 opportunities which would compensate for the loss of recreational opportunities within the project
17 area by providing a recreational opportunity downstream/upstream in the same area for the same
18 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
19 *Commitments*.

20 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
21 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
22 proponents would also ensure through various outreach methods that recreationists were aware of
23 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
24 Cut). The barge unloading facilities would be removed after construction is complete and the
25 operable barrier will include a boat lock to permit boat passage once construction is complete.
26 Construction of the operable barrier would last for 2 years (short-term) and would not result in
27 long-term reduction of recreation opportunities. This component would not result in adverse effects
28 on recreational navigation. Construction-related effects on recreational navigation in the vicinity of
29 the barge unloading facilities would last up to 5 years (long-term) and would be considered adverse
30 because of the reduced recreation opportunity and experiences expected to exist near construction
31 activity.

32 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
33 construction of the intakes, temporary barge unloading facilities, and the operable barrier at the
34 head of Old River. Impacts from intake and barge unloading facilities would last approximately 5
35 years and include obstruction and delays to boat passage and navigation as a result of channel
36 obstructions in addition to compliance with temporary speed zones. Temporary channel closures
37 could impede boat movement and eliminate recreational opportunities. In waterways where
38 waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated during
39 construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
40 development and implementation of site-specific construction traffic management plans, including
41 specific measures related to management of barges and stipulations to notify the commercial and
42 leisure boating communities of proposed construction and barge operations in the waterways.
43 While the environmental commitments would reduce impacts on water-based recreation (water-
44 skiing, wakeboarding, tubing) in these areas by creating alternative recreation opportunities for
45 those eliminated during construction, these impacts would be long-term and considered significant
46 and unavoidable. Construction of the operable barrier would last for 2 years (short-term) and would

1 not result in long-term reduction of recreation opportunities. This would be a less-than-significant
2 impact on recreational navigation on Old River.

3 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
4 **Plan**

5 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
6 Impact TRANS-1.

7 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
8 **Result of Constructing the Proposed Water Conveyance Facilities**

9 Effects on recreational fishing under Alternative 2A would be similar to those described under
10 Alternative 1A, Impact REC-4. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not
11 be expected to result in substantially different effects on recreational fishing, although immediate
12 local effects on any informal bank fishing that occurs near the intake sites could be shifted.

13 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5, Sacramento River and Delta
14 region fish populations would not be affected by changes to localized water quality conditions,
15 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
16 recreational fishing opportunities would be substantially reduced during construction. BDCP
17 environmental commitments to prevent water quality effects include environmental training;
18 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
19 hazardous materials management plans, and spill prevention, containment, and countermeasure
20 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
21 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
22 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
23 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
24 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
25 avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish
26 populations likely would not be affected to the degree that fishing opportunities would be
27 substantially reduced, construction conditions would introduce noise and visual disturbances that
28 would affect the recreation experience for anglers.

29 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
30 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
31 setting disruptions could distract from the recreation experience including on weekends. However,
32 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
33 specific noise-generating activities near recreation areas would be scheduled to the extent possible
34 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
35 also be available to address construction-related visual effects on sensitive receptors from
36 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
37 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
38 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
39 chapter identifies measures to address longer term visual effects associated with changes to the
40 landscape/visual setting from construction and the presence of new water conveyance features.
41 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
42 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
43 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants

1 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
 2 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
 3 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
 4 locations. Additionally, anglers could move to other locations along the Sacramento River and
 5 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
 6 sites further removed from areas affected by construction. This effect would not be adverse.

7 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 8 construction activities would be considered less than significant because the BDCP would include
 9 environmental commitments to prevent water quality effects include environmental training;
 10 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 11 hazardous materials management plans, and spill prevention, containment, and countermeasure
 12 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 13 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 14 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 15 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 16 that there would be no long-term reduction of local fishing opportunities and experiences. This
 17 impact would be less than significant.

18 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

19 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 20 1A.

21 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 22 of Pile Driving and Other Construction-Related Underwater Noise**

23 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 24 Alternative 1A, Impact AQUA-1.

25 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving 26 and Other Construction-Related Underwater Noise**

27 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 28 Alternative 1A, Impact AQUA-1.

29 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during 30 Construction**

31 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

32 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response 33 Tracking Program**

34 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 30 **Result of the Operation of the Proposed Water Conveyance Facilities**

31 **NEPA Effects:** Operation of Alternative 2A may result in changes in entrainment, spawning, rearing
 32 and migration. However, in general, effects on (non-covered) fish species that are popular for
 33 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 34 recreational fishing. While there are some significant impacts to specific non-covered species, as
 35 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5, they are typically limited to

1 specific rivers and not the population of that species as a whole. The effect is not adverse because it
2 would not result in a substantial long-term reduction in recreational fishing opportunities

3 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
4 operation of Alternative 2A would be considered less than significant because any impacts to fish
5 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
6 would not impact the species population of any popular sportfishing species overall.

7 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial** 8 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-** 9 **of-Delta Reservoirs**

10 **NEPA Effects:** Operation of Alternative 2A would result in changes in the frequency with which the
11 end-of-September reservoir levels at study area reservoirs fall below levels identified as water-
12 dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No Action
13 Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a and
14 Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of Alternatives*,
15 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *Modeling*
16 *Methodology*, for an explanation of the CALSIM II model and assumptions.

17 **Existing Conditions (CEQA Baseline) Compared to Alternative 2A (2060)**

18 As shown in Table 15-12a and Table 15-12b, under Alternative 2A there would be from 4 to 31
19 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
20 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
21 Trinity Lake, Shasta Lake, Folsom Lake, Lake Oroville, and San Luis Reservoir. However, as discussed
22 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
23 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
24 specifically define the exact extent of the changes due to implementation of the action alternative
25 using these model simulation results. Thus, the precise contributions of sea level rise and climate
26 change to the total differences between Existing Conditions and Alternative 2A cannot be isolated in
27 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative
28 2A (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
29 attributable to operation of Alternative 2A.

30 **No Action Alternative (2060) Compared to Alternative 2A (2060)**

31 The comparison of Alternative 2A (2060) to the No Action Alternative (2060) condition most closely
32 represents changes in reservoir elevations that may occur as a result of operation of the alternative
33 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
34 *Methodology*).

35 As shown in Table 15-12a and Table 15-12b, operation of Alternative 2A would primarily result in
36 changes in the frequency with which the end of September reservoir levels at Trinity Lake, Shasta
37 Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels identified as
38 important water-dependent recreation thresholds. Changes at San Luis Reservoir show greater
39 difference when compared to the No Action Alternative (2060) than projected for the other
40 reservoirs.

1 In comparisons of Alternative 2A (2060) operations to No Action Alternative (2060), the CALSIM II
 2 modeling results indicate that reservoir levels under Alternative 2A operations would vary from one
 3 reservoir to another and that most, with the exception of San Luis Reservoir, would experience little
 4 to no change or would fall below the individual reservoir thresholds less frequently than under No
 5 Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely
 6 affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and
 7 Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall
 8 below the recreation thresholds thus indicating better boating opportunities, when compared to No
 9 Action Alternative (2060) conditions. Operation of Alternative 2A would not adversely affect water-
 10 dependent or water-enhanced recreation at these reservoirs.

11 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
 12 frequently under Alternative 2A (2060) conditions (25 years) relative to the No Action Alternative
 13 (2060) for the Dinosaur Point boat launch. However, access to the Basalt boat launch, which is
 14 available to reservoir elevation 340 feet, would not substantially change relative to the No Action
 15 Alternative (2060) (there would be three additional years below the threshold). Therefore, because
 16 the Basalt boat launch would still be available for access to the reservoir, and the change in
 17 frequency with which the recreation threshold would be exceeded at Basalt is less than 10% (8
 18 years or less), these changes in elevation at San Luis Reservoir under operation of Alternative 2A
 19 would not be adverse. Shoreline fishing would still be possible, and other recreation activities at the
 20 reservoir—picnicking, biking, hiking, and fishing—would be available. These changes would not be
 21 adverse.

22 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 23 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 24 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 25 Alternative 2A (2060) operations would fall below the individual reservoir thresholds either with
 26 the same or reduced frequency than under the No Action Alternative (2060). These changes in
 27 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
 28 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
 29 Lake Oroville and Folsom Lake, because there would be fewer years in which the lake levels fall
 30 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
 31 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
 32 Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point
 33 boat launch, access to the Basalt boat launch would not substantially change. The modeled
 34 additional three years of exceeding the recreation threshold attributable to operation of Alternative
 35 2A (2060) relative to the No Action Alternative (2060) would be less than significant because it is a
 36 less than 10% change (8 years or less). Operation of Alternative 2A would not substantially affect
 37 water-dependent or water-enhanced recreation at these reservoirs. This would be a less-than-
 38 significant impact. No mitigation is required.

39 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 40 **Result of Maintenance of the Proposed Water Conveyance Facilities**

41 **NEPA Effects:** Changes to boat passage, navigation, and water-based recreation activities as a result
 42 of maintenance of intake facilities and other structures under Alternative 2A would be similar to
 43 those described for Alternative 1A, Impact REC-7 and would result in periodic temporary but not
 44 substantial effects on boat passage and water-based recreational activities. Any effects would be
 45 short-term (less than 2 years) and intermittent. Other facility maintenance activities would occur on

1 land and would not affect boat passage and navigation. Implementation of the environmental
2 commitment to provide notification of construction and maintenance activities in waterways
3 (Appendix 3B, *Environmental Commitments*) would reduce these effects. These effects are not
4 considered adverse.

5 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
6 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
7 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
8 environmental commitment to provide notification of construction and maintenance activities in
9 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
10 Intake maintenance impacts on recreation would be considered less than significant because
11 impacts, if any, on public access or public use of established recreation facilities would last for 2
12 years or less. Mitigation is not required.

13 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a** 14 **Result of Maintenance of the Proposed Water Conveyance Facilities**

15 **NEPA Effects:** Changes to land-based recreation opportunities as a result of maintenance of
16 conveyance facilities under Alternative 2A would be similar to those described for Alternative 1A,
17 Impact REC-8. Maintenance would be short-term and intermittent and would be conducted within
18 the individual facility right-of-way, which does not include any recreation facilities or recreation use
19 areas. There would be no adverse effects on recreation opportunities as a result of maintenance of
20 the proposed water conveyance facilities.

21 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
22 would not result in any changes to land-based recreational opportunities. Therefore, there would be
23 no impact. Mitigation is not required.

24 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of** 25 **Implementing Conservation Measures 2-21**

26 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
27 components as part of Alternative 2A could have effects related to recreational fishing that are
28 similar in nature to those discussed above for construction, and operation and maintenance of
29 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
30 effects would likely be substantially lower because the nature of the activities associated with
31 implementing the conservation components would be different—less heavy construction equipment
32 would be required and the restoration actions would be implemented over a longer time frame than
33 CM1. Potential effects from implementation of the conservation components would be dispersed
34 over a larger area and would generally involve substantially fewer construction and operation
35 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
36 components would be expected to result in long-term benefits to aquatic species. Additional
37 discussion related to the individual conservation measures is provided below.

38 With regards to fishing opportunities, effects of implementing the conservation components under
39 Alternative 2A would be similar to those described for Alternative 1A. CM2–CM21 would be
40 expected to improve fishing opportunities in the study area although some effect on fishing
41 opportunities could take place during implementation of the conservation measures. Overall,
42 implementing the proposed conservation components would be expected to provide beneficial
43 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

1 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
2 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
3 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
4 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
5 implementation stage, these measures could result in impacts on fishing opportunities by
6 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
7 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
8 onshore fishing opportunities. These impacts would be considered less than significant because the
9 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
10 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
11 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
12 and although these CMs would result in highly localized reductions of predatory species, overall,
13 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
14 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5). Construction of
15 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
16 recreational fishing. The potential impact on covered and non-covered sport fish species from
17 construction activities would be considered less than significant because the BDCP would include
18 environmental commitments to prevent water quality effects include environmental training;
19 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
20 hazardous materials management plans, and spill prevention, containment, and countermeasure
21 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
22 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
23 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
24 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
25 implementation of the other conservation components. Because construction of the conservation
26 measure component facilities would be less intense and of shorter duration than construction of
27 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
28 the construction-related impacts on recreational fishing associated with the other conservation
29 measures to a less-than-significant level. Further, the individual facilities or conservation elements
30 will undergo additional environmental review and permitting which will include identification of
31 site-specific measures to further protect resources.

32 Environmental commitments that will reduce construction-related impacts on recreation include a
33 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
34 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
35 REC-3, above). In addition, a number of mitigation measures will address construction-related
36 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
37 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
38 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
39 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
40 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
41 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
42 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.5). Mitigation measures NOI-1a
43 and NOI-1b will address construction-related noise concerns (see additional discussion under
44 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.5). Finally, should
45 construction of conservation measure facilities require pile-driving, mitigation measures to protect
46 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
47 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5).

1 In the long term, the impact on fishing opportunities would be considered beneficial because the
2 conservation measures are intended to enhance aquatic habitat and fish abundance.

3 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
4 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
5 **Transmission Lines and Underground Transmission Lines Where Feasible**

6 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
9 **Sensitive Receptors**

10 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
13 **Material Area Management Plan**

14 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

17 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
20 **Extent Feasible**

21 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
24 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

25 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
28 **Landscaping Plan**

29 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
32 **Construction**

33 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 24 **of Pile Driving and Other Construction-Related Underwater Noise**

25 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 26 Alternative 1A, Impact AQUA-1.

27 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 28 **and Other Construction-Related Underwater Noise**

29 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 30 Alternative 1A, Impact AQUA-1.

31 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 32 **as a Result of Implementing Conservation Measures 2–21**

33 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 34 conservation components under Alternative 2A would be similar to those described for Alternative
 35 1A. Implementing the conservation measures could result in an adverse effect on recreation by

1 limiting boating by reducing the extent of navigable waterways available to boaters. Once
2 implemented, the conservation measures could provide beneficial effects to recreation by expanding
3 the extent of navigable waterways available to boaters, improving and expanding boat launch
4 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

5 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
6 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
7 BDCP proponents would implement environmental commitments to include a noise abatement plan
8 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
9 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
10 available to address construction-related effects on recreational boating by reducing the degree of
11 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
12 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
13 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
14 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
15 and transportation safety and access conditions of the marina (see additional discussion under
16 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.5).
17 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
18 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
19 *Noise*, Section 23.4.3.5).

20 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
21 some habitat restoration and enhancement measures and other conservation measures would limit
22 some opportunities for boating and boating-related recreation by reducing the extent of navigable
23 water available to boaters. Temporary effects would also stem from construction, which may limit
24 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
25 implementation. However, BDCP conservation measures would also lead to an enhanced boating
26 experience by expanding the extent of navigable waterways available to boaters, improving and
27 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
28 navigation. Because these measures would not be anticipated to result in a substantial long-term
29 disruption of boating activities, this impact is considered less than significant for the conservation
30 measures, with the exception of CM18, discussed further below.

31 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
32 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
33 The BDCP proponents would implement environmental commitments to include a noise abatement
34 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
35 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
36 address construction-related impacts on recreational boating by reducing the degree of aesthetic
37 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
38 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
39 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
40 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
41 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
42 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.5). Mitigation measures NOI-1a
43 and NOI-1b will address construction-related noise concerns (see additional discussion under
44 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.5). Implementation of
45 these measures, as determined applicable to construction of this facility under future site-specific

1 environmental review, would reduce impacts on recreational boating to less than significant. No
2 additional mitigation would be required.

3 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
4 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
5 **Transmission Lines and Underground Transmission Lines Where Feasible**

6 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
9 **Sensitive Receptors**

10 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
13 **Material Area Management Plan**

14 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

17 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
20 **Extent Feasible**

21 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
24 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

25 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
28 **Landscaping Plan**

29 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
32 **Construction**

33 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 24 **Result of Implementing Conservation Measures 2-21**

25 **NEPA Effects:** Implementing the conservation components under Alternative 2A would have similar
 26 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.

27 Implementing the conservation measures could result in an adverse effect on recreation
 28 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 29 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 30 suitable for hiking, nature photography, or other similar activity. However, environmental
 31 commitments would reduce these effects, and implementation of the measures would also restore
 32 or enhance new potential sites for upland recreation thereby improving the quality recreational
 33 opportunities. CM17-CM21 involve enforcement, management, or other individual, localized project
 34 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 35 mechanism and would not result in a physical change to upland areas; construction under CM18,
 36 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 37 action primarily located at boat launches and would not affect upland recreation areas and related
 38 opportunities. These measures are not discussed further in this analysis.

1 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 2 conservation measures would temporarily limit opportunities for upland recreational activities
 3 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 4 construction activities would also temporarily compromise the quality of upland recreation in and
 5 around these areas. Additionally, it is possible that current areas of upland recreation would be
 6 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 7 activities. These impacts on upland recreational opportunities would be considered less than
 8 significant because the BDCP would include environmental commitments that would require BDCP
 9 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 10 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 11 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 12 upland recreation and the measure would improve the quality of existing recreational opportunities
 13 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 14 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 15 considered less than significant.

16 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 17 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 18 **Addressing Recreation Resources**

19 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 20 Alternative 2A would generally have the same potential for incompatibilities with one or more plans
 21 and policies related to protecting and promoting recreation opportunities in the study area as
 22 described for Alternative 1A, Impact AES-12. Variation would result from two potentially different
 23 intake locations and inclusion of an operable barrier at the head of Old River. However, Intakes 6
 24 and 7 and the operable barrier would fall under the same jurisdictions as discussed under
 25 Alternative 1A, and so, overall the potential for incompatibility is the same. As described under
 26 Alternative 1A, there would be potential for the alternative to be incompatible with plans and
 27 policies related to recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-
 28 Boatwright Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource*
 29 *Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract*
 30 *State Recreation Areas General Plan*). In addition, with the exception of Solano County, the
 31 alternative may be incompatible with county general plan policies that protect visual resources in
 32 the study area.

33 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 34 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 35 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 36 the alternative with relevant plans and policies.

37 **15.3.3.6 Alternative 2B—Dual Conveyance with East Alignment and Five**
 38 **Intakes (15,000 cfs; Operational Scenario B)**

39 For the purposes of assessment of effects on recreation, Alternative 2B is the same as Alternative 1B,
 40 with the following exceptions.

- 41 ● Under Alternative 2B, a total of 5 intake facilities would be constructed and operated. Intake
 42 locations are 1 through 3 in addition to either 4 and 5, or 6 and 7.
- 43 ● Alternative 2B has a different operations scenario (scenario B).

- An operable barrier would be placed at the head of Old River at the confluence with the San Joaquin River.

Table 15-13 under Alternative 1B lists the recreation sites and areas may be affected by Alternative 2B (Mapbook Figure 15-2). Specific effects on recreation areas or sites are discussed below.

Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private Commercial Recreation Facility Available for Public Access as a Result of the Location of Proposed Water Conveyance Facilities

NEPA Effects: Effects on recreation as a result of the post-construction location of water conveyance facilities associated with Alternative 2B would be similar to those described under Alternative 1B, Impact REC-1. Proposed placement of the Alternative 2B water conveyance facilities may fall within the boundaries of Stone Lakes NWR, Cosumnes River Preserve, and White Slough Wildlife Area Pond 6; however, permanent placement of these facilities (see discussion under Alternative 1B, Impact REC-1) would not result in long-term disruption or reduction of any well-established recreation activity or site, including parks, marinas, or other designated areas. Therefore, there would be no adverse effects. Effects on recreation related to construction of the water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.6, and Chapter 23, *Noise*, Section 23.4.3.6, for additional discussion of these topics.

CEQA Conclusion: Alternative 2B would not result in the location of water conveyance facilities that would permanently displace any well-established public use or private commercial recreation facility available for public access. Therefore, impacts are considered less than significant. No mitigation is required.

Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction-related temporary disruption of existing recreational facilities under Alternative 2B would be similar to that described under Alternative 1B, Impact REC-2. No additional recreation sites or areas would be affected if Intakes 6 and 7 were constructed instead of Intakes 4 and 5. Construction of Alternative 2B intakes and water conveyance facilities would result in temporary short-term and long-term effects related to disruption of recreational opportunities and experiences at 18 recreation sites or areas in the study area. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction.

Other Recreation Opportunities

On-Water Recreation

Cliff's Marina is upstream of Intake 1 construction area. Similarly, Lazy M Marina and Rivers End Marina & Boat Storage sites are not within the construction impact area for the Byron Tract Forebay and related facilities near Clifton Court Forebay, and there are no recreation sites within the impact area for the operable barrier at the head of Old River and San Joaquin River. Although these facilities and other marinas or fishing sites fall outside of the impact area for noise, the overall recreation experience upstream or downstream of these sites may fall within the noise impact area and could experience diminished recreation opportunities because of the elevated noise levels as well as visual setting disruptions over the course of intake installation. Overall, construction activities associated

1 with the proposed water conveyance facilities would range from 1 year to up to 5 years depending
2 on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river
3 construction would be further limited primarily to June 1 through October 31 each year. Although
4 dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse
5 noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation
6 areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife
7 and fish, causing recreationists to experience a changed recreation setting.

8 *Campgrounds*

9 Nighttime construction activities would require the use of bright lights that would negatively affect
10 nighttime views of and from the work area. This would affect any overnight camping at the
11 recreation sites and areas discussed above, although day use areas that close at sunset would not be
12 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
13 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, 23.4.3.6, another
14 nighttime effect on recreation would be construction noise levels that could adversely affect
15 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
16 construction could be infrequent and intermittent, but would adversely affect camping sites.
17 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
18 NOI-1b would be available to address these effects.

19 *Summary*

20 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
21 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
22 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.6,
23 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.6, Chapter 19, *Transportation*, Section
24 19.3.3.6, and Chapter 23, *Noise*, Section 23.4.3.6, for additional detail related to waterfowl/wildlife,
25 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1B,
26 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
27 within the construction impact area. As discussed in Chapter 12, *Terrestrial Biological Resources*,
28 Section 12.3.3.2, construction could have an adverse effect on waterfowl if they were present in or
29 adjacent to work areas and could result in destruction of nests or disturbance of nesting and
30 foraging behaviors. These effects could indirectly affect recreational wildlife viewing and hunting in
31 the study area; however, mitigation measures, environmental commitments, and conservation
32 measures would provide several benefits to waterfowl habitat, which would result in increased
33 recreational opportunities. Mitigation Measure BIO-75, *Conduct preconstruction nesting bird surveys*
34 *and avoid disturbance of nesting birds*, would be available to address these effects. In addition, in
35 areas near greater sandhill crane habitat, construction-related disturbances (noise and visual),
36 installation of transmission lines, or habitat degradation associated with accidental spills, runoff and
37 sedimentation, and dust could have adverse effects on sandhill cranes and related recreational
38 viewing opportunities. These effects on sandhill crane would be minimized with BDCP AMM20
39 (Greater Sandhill Crane) and BDCP AMM31 (Noise Abatement). These measures, designed to avoid
40 and minimize effects on greater sandhill crane, would be implemented by the BDCP proponents
41 where determined necessary for all covered activities throughout the permit term. These and other
42 BDCP AMMs are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*. Also, as
43 discussed in Appendix 3B, *Environmental Commitments*, DWR would implement an environmental
44 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
45 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence

1 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
2 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
3 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
4 suitable habitat conditions for covered species and native biodiversity, including benefiting
5 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
6 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
7 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
8 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
9 community types (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*). The reserve system would
10 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
11 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
12 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
13 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

14 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.6, identifies a number of mitigation
15 measures that would be available to address construction-related visual effects on sensitive
16 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
17 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
18 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
19 addition, the chapter identifies measures to address longer term visual effects associated with
20 changes to the landscape/visual setting from construction and the presence of new water
21 conveyance features. These include developing and implementing a spoil/borrow and RTM area
22 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
23 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
24 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
25 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
26 would also make a commitment to enhance the visual character of the area by creating new wildlife
27 viewing sites and enhancing interest in the construction site by constructing viewing areas and
28 displaying information about the project, which may attract people who may use the recreation
29 facilities to the construction site as part of the visit.

30 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
31 proponents will work with the California Department of Parks and Recreation to help insure the
32 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
33 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
34 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
35 helping to fund or construct elements of the American Discovery Trail and the potential conversion
36 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
37 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
38 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
39 proposal. The BDCP project proponents will also work with DPR to determine if some of the
40 constructed elements of CM1 could incorporate elements of the DPR's proposal.

41 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
42 involve preparation of site-specific construction traffic management plans that would address
43 potential public access routes and provide construction information notification to local residents
44 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
45 of access to affected recreation areas as an environmental commitment. Where construction
46 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project

1 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
2 construction sites. These would be designed to be safe, pleasant and would integrate with
3 opportunities to view the construction site as an additional area of interest. These physical facilities
4 would be combined with public information, including sidewalk wayfinding information that would
5 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
6 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
7 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
8 congested roadway segments.

9 Chapter 23, *Noise*, Section 23.4.3.6, discusses that construction noise effects could be addressed
10 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
11 implementation of a complaint/response tracking program (NOI-1b), and an environmental
12 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
13 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
14 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
15 viewing the aesthetic amenities of the area.

16 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
17 2 would ensure continued access to existing recreation experiences. The Delta offers many
18 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
19 all of which would continue to be available for recreationists. However, due to the length of time that
20 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
21 related to temporary disruption of existing recreational activities at facilities within the impact area
22 would be adverse.

23 **CEQA Conclusion:** Construction of intakes and related water conveyance facilities would result in
24 temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2 years) impacts
25 on well-established recreational opportunities and experiences in the study area because of access,
26 noise, and visual setting disruptions that would result in loss of public use. These impacts would be
27 temporary, but may occur year-round. Mitigation measures, environmental commitments, and
28 AMMs would reduce these construction-related impacts by implementing measures to protect or
29 compensate for effects on wildlife habitat and species; minimize the extent of changes to the visual
30 setting, including nighttime light sources; manage construction-related traffic; and implement noise
31 reduction and complaint tracking measures. However, the level of impact would not be reduced to
32 less than significant because even though mitigation measures and environmental commitments
33 would reduce the impacts on wildlife, visual setting, transportation, and noise conditions that could
34 detract from the recreation experience, due to the dispersed effects on the recreation experience
35 across the Delta, it is not certain the mitigation would reduce the level of these impacts to less than
36 significant in all instances such that there would be no reduction of recreational opportunities or
37 experiences over the entire study area. Therefore, these impacts are considered significant and
38 unavoidable. However, the impacts related to construction of the intakes would be less than
39 significant.

40 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

41 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
42 1A.

1 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
2 **Disturbance of Nesting Birds**

3 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
4 Alternative 1A, Impact BIO-75.

5 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
6 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
7 **Transmission Lines and Underground Transmission Lines Where Feasible**

8 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
11 **Sensitive Receptors**

12 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
15 **Material Area Management Plan**

16 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
17 Alternative 1A, Impact AES-1.

18 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

19 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
22 **Extent Feasible**

23 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
26 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

27 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
30 **Landscaping Plan**

31 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
 2 **Residents**

3 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 6 **Construction**

7 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 10 **to Prevent Light Spill from Truck Headlights toward Residences**

11 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 14 **Plan**

15 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 18 **Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 22 **Agreements to Enhance Capacity of Congested Roadway Segments.**

23 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 24 Impact TRANS-1.

25 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 26 **Construction**

27 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 29 **Tracking Program**

30 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

31 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 32 **Result of Constructing the Proposed Water Conveyance Facilities**

33 **NEPA Effects:** Effects on recreation as a result of temporarily altering recreation navigation during
 34 construction of intakes and barge unloading facilities would be similar to those described under
 35 Alternative 1B, Impact REC-3. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not

1 result in substantially different effects on recreational navigation. Alternative 2B also would involve
2 construction and operation of an operable barrier at the head of Old River (Mapbook Figure 15-2).

3 Changes to boat passage and navigation on the Sacramento River in the vicinity of the intakes, barge
4 unloading facilities and siphons would result in adverse direct and indirect effects on recreational
5 navigation in the affected waterways. Direct effects would result from the creation of obstructions to
6 boat passage and associated boat traffic delays and temporary channel closures that could impede
7 boat movement. Changes to boat passage would also result in effects on recreational navigation and
8 water-based recreation activities such as wakeboarding, waterskiing, and tubing. Although there
9 may be short delays in boat passage, access to the affected waterways would be maintained. The
10 sloughs where siphons would cross do not support large boat traffic volumes and construction
11 activities would not result in substantial adverse effects. However, because boat passage and
12 navigation would be disrupted, effects are considered adverse. Construction of the operable barrier
13 at the head of Old River would have only short-term effects on recreational boating access on Old
14 River. The barrier would have a boat lock that would restore boating access once construction is
15 complete.

16 Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by
17 development and implementation of site-specific construction traffic management plans, including
18 specific measures related to management of barges and stipulations to notify the commercial and
19 leisure boating community of proposed barge operations in the waterways. Additionally, BDCP
20 proponents would contribute funds for the construction of new recreation opportunities as well as
21 for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the
22 Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in
23 the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds
24 could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-
25 Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin,
26 the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent
27 with, commencement of construction of the BDCP. This commitment serves to compensate for the
28 loss of recreational opportunities within the project area by providing a recreational opportunity
29 downstream/upstream in the same area for the same regional recreational users. These
30 commitments are further described in Appendix 3B, *Environmental Commitments*.

31 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
32 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
33 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
34 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
35 Agriculture Research Service, University of California Cooperative Extension Weed Research and
36 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
37 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
38 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
39 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
40 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
41 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
42 Enhanced ability to control these invasive vegetation would lead to increased recreation
43 opportunities which would compensate for the loss of recreational opportunities within the project
44 area by providing a recreational opportunity downstream/upstream in the same area for the same
45 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
46 *Commitments*.

1 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
 2 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
 3 proponents would also ensure through various outreach methods that recreationists were aware of
 4 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
 5 Cut).

6 The barge unloading facilities would be removed after construction is complete and the operable
 7 barrier will include a boat lock to permit boat passage once construction is complete. Construction
 8 of the operable barrier would last for 2 years (short-term) and would not result in long-term
 9 reduction of recreation opportunities. This component would not result in adverse effects on
 10 recreational navigation. Nonetheless, construction-related effects on recreation navigation in the
 11 vicinity of intakes and barge unloading facilities on waterskiing, wakeboarding or tubing
 12 opportunities would last approximately 5 years (long-term) and would be considered adverse
 13 because of the reduced recreation opportunity and experiences expected to exist near construction
 14 activity.

15 **CEQA Conclusion:** Construction of Alternative 2B would result in significant impacts on boat
 16 passage and navigation in the Sacramento River and other waterways within the Delta where
 17 intakes, temporary barge unloading facilities, and siphons occur. The creation of obstructions to
 18 boat passage would result in boat traffic delays and impediments to boat movement. Changes to
 19 boat passage and navigation would also result in temporary impacts on wakeboarding, waterskiing
 20 and tubing because of reduced speeds and passage impediments. Mitigation Measure TRANS-1a
 21 would reduce impacts on marine navigation by development and implementation of site-specific
 22 construction traffic management plans, including specific measures related to management of
 23 barges and stipulations to notify the commercial and leisure boating communities of proposed
 24 construction and barge operations in the waterways. While the environmental commitments would
 25 reduce impacts on water-based recreation (water-skiing, wakeboarding, tubing) in these areas by
 26 creating alternative recreation opportunities for those eliminated during construction, these
 27 impacts would be long-term and therefore considered significant and unavoidable. Construction of
 28 the operable barrier would last for 2 years (short-term) and would not result in long-term reduction
 29 of recreation opportunities. This would be a less-than-significant impact on recreational navigation
 30 on Old River.

31 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 32 **Plan**

33 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 34 Impact TRANS-1.

35 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 36 **Result of Constructing the Proposed Water Conveyance Facilities**

37 **NEPA Effects:** Effects on recreational fishing under Alternative 2B would be similar to those
 38 described under Alternative 1B, Impact REC-4. Construction of Intakes 6 and 7 instead of Intakes 4
 39 and 5 would not be expected to result in substantially different effects on recreational fishing,
 40 although immediate local effects on any informal bank fishing that occurs near the intake sites could
 41 be shifted.

42 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section, 11.3.4.6, Sacramento River and
 43 Delta region fish populations would not be affected by changes to localized water quality conditions,

1 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
2 recreational fishing opportunities would be substantially reduced during construction. BDCP
3 environmental commitments to prevent water quality effects include environmental training;
4 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
5 hazardous materials management plans, and spill prevention, containment, and countermeasure
6 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
7 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
8 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
9 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
10 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
11 avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish
12 populations likely would not be affected to the degree that fishing opportunities would be
13 substantially reduced, construction conditions would introduce noise and visual disturbances that
14 would affect the recreation experience for anglers.

15 Although construction noise would be temporary, and primarily be limited to Monday through
16 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
17 sites. Visual setting disruptions could distract from the recreation experience including on
18 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
19 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
20 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
21 measures would also be available to address construction-related visual effects on sensitive
22 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
23 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
24 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
25 addition, the chapter identifies measures to address longer term visual effects associated with
26 changes to the landscape/visual setting from construction and the presence of new water
27 conveyance features. These include developing and implementing a spoil/borrow and RTM area
28 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
29 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
30 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
31 implementing best management practices to implement a project landscaping plan (AES-1g).
32 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
33 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
34 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
35 anglers with alternative bank fishing access sites further removed from areas affected by
36 construction. This effect would not be adverse.

37 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
38 construction activities would be considered less than significant because the BDCP would include
39 environmental commitments to prevent water quality effects include environmental training;
40 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
41 hazardous materials management plans, and spill prevention, containment, and countermeasure
42 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
43 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
44 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
45 REC-2 would ensure continued access for bank fishing at established sport fishing locations such

1 that there would be no long-term reduction of local fishing opportunities and experiences. This
2 impact would be less than significant.

3 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

4 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
5 1A.

6 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
7 of Pile Driving and Other Construction-Related Underwater Noise**

8 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
9 Alternative 1A, Impact AQUA-1.

10 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving
11 and Other Construction-Related Underwater Noise**

12 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
13 Alternative 1A, Impact AQUA-1.

14 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
15 Construction**

16 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

17 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response
18 Tracking Program**

19 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to
21 Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New
22 Transmission Lines and Underground Transmission Lines Where Feasible**

23 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and
26 Sensitive Receptors**

27 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel
30 Material Area Management Plan**

31 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a
17 Result of the Operation of the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Operation of Alternative 2B may result in changes in entrainment, spawning, rearing
19 and migration. However, in general, effects on (non-covered) fish species that are popular for
20 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
21 recreational fishing. While there are some significant impacts to specific non-covered species, as
22 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.6, they are typically limited to
23 specific rivers and not the population of that species as a whole. The effect is not adverse because it
24 would not result in a substantial long-term reduction in recreational fishing opportunities

25 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
26 operation of Alternative 2B would be considered less than significant because any impacts to fish
27 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
28 would not impact the species population of any popular sportfishing species overall.

29 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial
30 Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-
31 of-Delta Reservoirs**

32 **NEPA Effects:** Alternative 2B would have the same operational scenario as Alternative 2A, and as
33 shown in Table 15-12a and Table 15-12b, Alternative 2B would result in the same changes in the
34 frequency with which the end-of-September reservoir levels at study area reservoirs fall below
35 levels identified as important water-dependent recreation thresholds relative to Existing Conditions
36 (CEQA baseline) and the No Action Alternative (2060) (alternative operations contribution [impact]
37 comparison) as discussed under Alternative 2A. Also see Chapter 3, *Description of Alternatives*,
38 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *Modeling
39 Methodology*, for an explanation of the CALSIM II model and assumptions.

Existing Conditions (CEQA Baseline) Compared to Alternative 2B (2060)

As shown in Table 15-12a and Table 15-12b, under Alternative 2B there would be from 4 to 31 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at Trinity Lake, Shasta Lake, Folsom Lake, Lake Oroville, and San Luis Reservoir. However, as discussed under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise, climate change, and operation of the alternative. It is not possible to specifically define the exact extent of the changes due to implementation of the action alternative using these model simulation results. Thus, the precise contributions of sea level rise and climate change to the total differences between Existing Conditions and Alternative 2B cannot be isolated in this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 2B (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations attributable to operation of Alternative 2B.

No Action Alternative (2060) Compared to Alternative 2B (2060)

The comparison of Alternative 2B (2060) to the No Action Alternative (2060) condition most closely represents changes in reservoir elevations that may occur as a result of operation of the alternative because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling Methodology*). As shown in Table 15-12a and Table 15-12b, operation of Alternative 2B would primarily result in changes in the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir show greater difference when compared to the No Action Alternative (2060) than projected for the other reservoirs.

In comparisons of Alternative 2B (2060) operations to No Action Alternative (2060), the CALSIM II modeling results indicate that reservoir levels under Alternative 2B operations would vary from one reservoir to another and that most, with the exception of San Luis Reservoir, would experience little to no change or would fall below the individual reservoir thresholds less frequently than under No Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall below the recreation thresholds thus indicating better boating opportunities, when compared to No Action Alternative (2060) conditions. Operation of Alternative 2B would not adversely affect water-dependent or water-enhanced recreation at these reservoirs.

At San Luis Reservoir, recreation boating opportunity in September would be reduced more frequently under Alternative 2B (2060) (25 years) relative to No Action Alternative (2060) for the Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative (2060) (there would be three additional years below the threshold). Therefore, because the Basalt boat launch would still be available for access to the reservoir, and the change in frequency with which the recreation threshold would be exceeded at Basalt is less than 10% (8 years or less), these changes in elevation at San Luis Reservoir under operation of Alternative 2B would not be adverse. Shoreline fishing would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—would be available. These changes would not be adverse.

1 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
2 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
3 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
4 Alternative 2B (2060) operations would fall below the individual reservoir thresholds either with
5 the same or reduced frequency than under the No Action Alternative (2060). These changes in
6 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
7 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
8 Lake Oroville and Folsom Lake these changes would be considered beneficial effects on recreation
9 opportunities and experiences under Alternative 2B operations because there would be fewer years
10 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
11 conditions. At San Luis Reservoir, although boating opportunity would be reduced more frequently
12 for the Dinosaur Point boat launch, access to the Basalt boat launch would not substantially change.
13 The modeled additional three years of exceeding the recreation threshold attributable to operation
14 of Alternative 2B (2060) relative to the No Action Alternative (2060) would be less than significant
15 because it is a less than 10% change (8 years or less). Operation of Alternative 2B would not
16 substantially affect water-dependent or water-enhanced recreation at these reservoirs. This would
17 be a less-than-significant impact. No mitigation is required.

18 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
19 **Result of Maintenance of the Proposed Water Conveyance Facilities**

20 **NEPA Effects:** The effects of maintenance activities on water-based recreation under Alternative 2B
21 would be similar to those described under Alternative 1A, Impact REC-7, and would result in
22 periodic temporary but not substantial effects on boat passage and water-based recreational
23 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
24 maintenance activities would occur on land and would not affect boat passage and navigation.
25 Implementation of the environmental commitment to provide notification of construction and
26 maintenance activities in waterways (Appendix 3B, *Environmental Commitments*) would reduce
27 these effects. These effects are not considered adverse.

28 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
29 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
30 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
31 environmental commitment to provide notification of construction and maintenance activities in
32 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
33 Intake maintenance impacts on recreation would be considered less than significant because
34 impacts, if any, on public access or public use of established recreation facilities would last for 2
35 years or less. Mitigation is not required.

36 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
37 **Result of Maintenance of the Proposed Water Conveyance Facilities**

38 **NEPA Effects:** The effects of maintenance activities on land-based recreation under Alternative 2B
39 would be similar to those described under Alternative 1B, Impact REC-8 and would not affect
40 recreation opportunities. The right-of-way under Alternative 2B includes the Stone Lakes NWR,
41 White Slough Wildlife Area, and Cosumnes River Preserve; however, the lands in the Stone Lakes
42 NWR and Cosumnes River Preserve in the right-of-way are not used for recreation, so there would
43 be no effects on recreation opportunities. In the White Slough Wildlife Area (Pond 6) there would be
44 a bridge right-of-way; facility maintenance activities would be restricted to roadway maintenance

1 and would not affect recreation opportunities in the wildlife area. Maintenance would be short-term
 2 and intermittent and there would be no long-term change to recreation opportunities as a result of
 3 maintenance of conveyance facilities. There would be no adverse effects.

4 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 5 would not result in any changes to land-based recreational opportunities. Therefore, there would be
 6 no impact. Mitigation is not required.

7 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 8 **Implementing Conservation Measures 2-21**

9 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
 10 components as part of Alternative 2B could have effects related to recreational fishing that are
 11 similar in nature to those discussed above for construction, and operation and maintenance of
 12 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
 13 effects would likely be substantially lower because the nature of the activities associated with
 14 implementing the conservation components would be different—less heavy construction equipment
 15 would be required and the restoration actions would be implemented over a longer time frame than
 16 CM1. Potential effects from implementation of the conservation components would be dispersed
 17 over a larger area and would generally involve substantially fewer construction and operation
 18 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
 19 components would be expected to result in long-term benefits to aquatic species. Additional
 20 discussion related to the individual conservation measures is provided below.

21 With regards to fishing opportunities, effects of implementing the conservation components under
 22 Alternative 2B would be similar to those described for Alternative 1A. CM2–CM21 would be
 23 expected to improve fishing opportunities in the study area although some effect on fishing
 24 opportunities could take place during implementation of the conservation measures. Overall,
 25 implementing the proposed conservation components would be expected to provide beneficial
 26 effects on aquatic habitat and fish abundance thereby improving fishing opportunities

27 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
 28 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
 29 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
 30 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
 31 implementation stage, these measures could result in impacts on fishing opportunities by
 32 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
 33 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
 34 onshore fishing opportunities. These impacts would be considered less than significant because the
 35 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
 36 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
 37 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
 38 and although these CMs would result in highly localized reductions of predatory species, overall,
 39 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
 40 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.6). Construction of
 41 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
 42 recreational fishing. The potential impact on covered and non-covered sport fish species from
 43 construction activities would be considered less than significant because the BDCP would include
 44 environmental commitments to prevent water quality effects include environmental training;

1 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 2 hazardous materials management plans, and spill prevention, containment, and countermeasure
 3 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
 4 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
 5 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
 6 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
 7 implementation of the other conservation components. Because construction of the conservation
 8 measure component facilities would be less intense and of shorter duration than construction of
 9 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 10 the construction-related impacts on recreational fishing associated with the other conservation
 11 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 12 will undergo additional environmental review and permitting which will include identification of
 13 site-specific measures to further protect resources.

14 Environmental commitments that will reduce construction-related impacts on recreation include a
 15 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 16 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 17 REC-3, above). In addition, a number of mitigation measures will address construction-related
 18 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 19 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 20 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 21 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 22 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 23 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 24 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.6). Mitigation measures NOI-1a
 25 and NOI-1b will address construction-related noise concerns (see additional discussion under
 26 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.6). Finally, should
 27 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 28 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 29 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.6).

30 In the long term, the impact on fishing opportunities would be considered beneficial because the
 31 conservation measures are intended to enhance aquatic habitat and fish abundance.

32 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 33 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 34 **Transmission Lines and Underground Transmission Lines Where Feasible**

35 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 38 **Sensitive Receptors**

39 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 40 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
21 **Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
25 **to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
33 **Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 12 **of Pile Driving and Other Construction-Related Underwater Noise**

13 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 14 Alternative 1A, Impact AQUA-1.

15 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 16 **and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 20 **as a Result of Implementing Conservation Measures 2–21**

21 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 22 conservation components under Alternative 2B would be similar to those described for Alternative
 23 1A. Implementing the conservation measures could result in an adverse effect on recreation by
 24 limiting boating by reducing the extent of navigable waterways available to boaters. Once
 25 implemented, the conservation measures could provide beneficial effects to recreation by expanding
 26 the extent of navigable waterways available to boaters, improving and expanding boat launch
 27 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

28 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 29 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 30 BDCP proponents would implement environmental commitments to include a noise abatement plan
 31 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 32 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 33 available to address construction-related effects on recreational boating by reducing the degree of
 34 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 35 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 36 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 37 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 38 and transportation safety and access conditions of the marina (see additional discussion under
 39 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.6).

1 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 2 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 3 *Noise*, Section 23.4.3.6).

4 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 5 some habitat restoration and enhancement measures and other conservation measures would limit
 6 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 7 water available to boaters. Temporary effects would also stem from construction, which may limit
 8 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 9 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 10 experience by expanding the extent of navigable waterways available to boaters, improving and
 11 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 12 navigation. Because these measures would not be anticipated to result in a substantial long-term
 13 disruption of boating activities, this impact is considered less than significant for the conservation
 14 measures, with the exception of CM18, discussed further below.

15 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 16 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 17 The BDCP proponents would implement environmental commitments to include a noise abatement
 18 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 19 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 20 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 21 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 22 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 23 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 24 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 25 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 26 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.6). Mitigation measures NOI-1a
 27 and NOI-1b will address construction-related noise concerns (see additional discussion under
 28 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.6). Implementation of
 29 these measures, as determined applicable to construction of this facility under future site-specific
 30 environmental review, would reduce impacts on recreational boating to less than significant. No
 31 additional mitigation would be required.

32 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 33 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 34 **Transmission Lines and Underground Transmission Lines Where Feasible**

35 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 38 **Sensitive Receptors**

39 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 40 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
21 **Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
25 **to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
33 **Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 12 **Result of Implementing Conservation Measures 2–21**

13 **NEPA Effects:** Implementing the conservation components under Alternative 2B would have similar
 14 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.
 15 Implementing the conservation measures could result in an adverse effect on recreation
 16 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 17 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 18 suitable for hiking, nature photography, or other similar activity. However, environmental
 19 commitments would reduce these effects, and implementation of the measures would also restore
 20 or enhance new potential sites for upland recreation thereby improving the quality recreational
 21 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 22 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 23 mechanism and would not result in a physical change to upland areas; construction under CM18,
 24 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 25 action primarily located at boat launches and would not affect upland recreation areas and related
 26 opportunities. These measures are not discussed further in this analysis.

27 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 28 conservation measures would temporarily limit opportunities for upland recreational activities
 29 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 30 construction activities would also temporarily compromise the quality of upland recreation in and
 31 around these areas. Additionally, it is possible that current areas of upland recreation would be
 32 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 33 activities. These impacts on upland recreational opportunities would be considered less than
 34 significant because the BDCP would include environmental commitments that would require BDCP
 35 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 36 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 37 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 38 upland recreation and the measure would improve the quality of existing recreational opportunities
 39 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 40 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 41 considered less than significant.

1 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 2 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 3 **Addressing Recreation Resources**

4 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 5 Alternative 2B would generally have the same potential for incompatibilities with one or more plans
 6 and policies related to preserving the visual quality and character of the Delta as described for
 7 Alternative 1B, Impact AES-12. Intakes 6 and 7 would be located farther south than Intakes 4 and 5,
 8 between Grand Island Road and the town of Vorden, and the operable barrier would be at the head
 9 of Old River. These features would fall under the same jurisdictions as discussed under Alternative
 10 1B, and so, overall the potential for incompatibility is the same. As described under Alternative 1B,
 11 there would be potential for the alternative to be incompatible with plans and policies related to
 12 protecting and promoting recreation opportunities in the study area (i.e., The Johnston-Baker-
 13 Andal-Boatwright Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource*
 14 *Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract*
 15 *State Recreation Areas General Plan*). In addition, with the exception of Solano County, the
 16 alternative may be incompatible with county general plan policies that protect recreation
 17 opportunities in the study area.

18 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 19 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 20 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 21 the alternative with relevant plans and policies.

22 **15.3.3.7 Alternative 2C—Dual Conveyance with West Alignment and**
 23 **Intakes W1–W5 (15,000 cfs; Operational Scenario B)**

24 For the purposes of assessment of effects on recreation, Alternative 2C is the same as Alternative 1C,
 25 with the following exception.

- 26 • The operations scenario for Alternative 2C differs from Alternative 1C (scenario B).
- 27 • An operable barrier would be placed at the head of Old River at the confluence with the San
 28 Joaquin River.

29 Table 15-14 under Alternative 1C lists the recreation sites that may be affected by Alternative 2C.

30 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
 31 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
 32 **Proposed Water Conveyance Facilities**

33 **NEPA Effects:** Alternative 2C includes locating a tunnel, ventilation/access shaft and permanent
 34 access road to the tunnel shaft on Twitchell Island, and would have the same effects as discussed
 35 under Alternative 1C, Impact REC-1. Twitchell Island is included in CDFW's Delta Island Hunting
 36 Program, a late-season hunt for pheasants and waterfowl on state-owned lands on Twitchell and
 37 Sherman Islands (California Department of Fish and Game 2009c). Both the canal alignment (tunnel
 38 portion) and a vent shaft would run underground through the hunting area (Mapbook Figure 15-3).

39 Permanently locating the tunnel, ventilation/access shaft, and permanent access road on Twitchell
 40 Island would not result in adverse effects on hunting or recreational opportunities on Twitchell
 41 Island post-construction. Temporary effects that may occur as a result of construction are noted

1 under Impact REC-2, below. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7,
2 and Chapter 23, *Noise*, Section 23.4.3.7, for additional discussion of these topics.

3 **CEQA Conclusion:** Alternative 2C would not result in the permanent displacement of any well-
4 established public use or private commercial recreation facility available for public access.
5 Therefore, impacts are considered less than significant. No mitigation is required.

6 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences** 7 **as a Result of Constructing the Proposed Water Conveyance Facilities**

8 **NEPA Effects:** Direct effects on recreation opportunities associated with construction of proposed
9 water conveyance facilities under Alternative 2C would be the same as those described under
10 Alternative 1C, Impact REC-2. Construction of Alternative 2C facilities would result in temporary
11 short-term and long-term effects related to disruption of well-established recreational opportunities
12 and experiences at recreation sites or areas in the Study area Indirect effects on recreation
13 experiences may occur as a result of impaired access, construction noise, or negative visual effects
14 associated with construction.

15 **Other Recreation Opportunities**

16 *On-Water Recreation*

17 Cliff's Marina is upstream of the Intake W1 construction area and Clarksburg Marina falls between
18 the construction impact area for Intake 1 and 2. Similarly, Rivers End Marina & Boat Storage is not
19 within the construction impact area for the Byron Tract Forebay and related facilities near Clifton
20 Court Forebay, and there are no recreation sites within the impact area for the operable barrier at
21 the head of Old River and San Joaquin River. Although these facilities and other marinas or fishing
22 sites fall outside of the impact area for noise, the overall recreation experience upstream or
23 downstream of these sites may fall within the noise impact area and could experience diminished
24 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
25 over the course of intake installation. Overall, construction activities associated with the proposed
26 water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work
27 would occur Monday through Friday for up to 24 hours per day. In-river construction would be
28 further limited primarily to June 1 through October 31 each year. Although dewatering would take
29 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
30 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
31 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
32 recreationists to experience a changed recreation setting.

33 *Campgrounds*

34 Nighttime construction activities would require the use of bright lights that would negatively affect
35 nighttime views of and from the work area. This would affect any overnight camping at the
36 recreation sites and areas discussed above, although day use areas that close at sunset would not be
37 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
38 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.7,
39 another nighttime effect on recreation would be construction noise levels that could adversely affect
40 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
41 construction could be infrequent and intermittent, but would adversely affect camping sites.

1 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
2 NOI-1b would be available to address these effects.

3 **Summary**

4 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
5 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
6 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.7,
7 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7, Chapter 19, *Transportation*, Section
8 19.3.3.7, and Chapter 23, *Noise*, Section 23.4.3.7 for additional detail related to waterfowl/wildlife,
9 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1C,
10 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
11 within the construction impact area.

12 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
13 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
14 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
15 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
16 measures, environmental commitments, and conservation measures would provide several benefits
17 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
18 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
19 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
20 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
21 degradation associated with accidental spills, runoff and sedimentation, and dust could have
22 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
23 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
24 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
25 crane, would be implemented by the BDCP proponents where determined necessary for all covered
26 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
27 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
28 *Commitments*, DWR would implement an environmental commitment that would dispose of and
29 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
30 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
31 of the action alternatives, implementation of CM3 and CM11 will result in protection and
32 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
33 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
34 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
35 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
36 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
37 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
38 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
39 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
40 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
41 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
42 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
43 bicycling, equestrian use, hunting, fishing, and boating.

44 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7, identifies a number of mitigation
45 measures that would be available to address construction-related visual effects on sensitive

1 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
2 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
3 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
4 addition, the chapter identifies measures to address longer term visual effects associated with
5 changes to the landscape/visual setting from construction and the presence of new water
6 conveyance features. These include developing and implementing a spoil/borrow and RTM area
7 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
8 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
9 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
10 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
11 would also make a commitment to enhance the visual character of the area by creating new wildlife
12 viewing sites and enhancing interest in the construction site by constructing viewing areas and
13 displaying information about the project, which may attract people who may use the recreation
14 facilities to the construction site as part of the visit.

15 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
16 proponents will work with the California Department of Parks and Recreation to help insure the
17 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
18 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
19 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
20 helping to fund or construct elements of the American Discovery Trail and the potential conversion
21 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
22 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
23 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
24 proposal. The BDCP project proponents will also work with DPR to determine if some of the
25 constructed elements of CM1 could incorporate elements of the DPR's proposal.

26 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
27 involve preparation of site-specific construction traffic management plans that would address
28 potential public access routes and provide construction information notification to local residents
29 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
30 of access to affected recreation areas as an environmental commitment. Where construction
31 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
32 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
33 construction sites. These would be designed to be safe, pleasant and would integrate with
34 opportunities to view the construction site as an additional area of interest. These physical facilities
35 would be combined with public information, including sidewalk wayfinding information that would
36 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
37 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
38 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
39 congested roadway segments.

40 Chapter 23, *Noise*, Section 23.4.3.7, discusses that construction noise effects could be addressed
41 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
42 implementation of a complaint/response tracking program (NOI-1b), and an environmental
43 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
44 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
45 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
46 viewing the aesthetic amenities of the area.

1 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
 2 2 would ensure continued access to existing recreation experiences. The Delta offers many
 3 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
 4 all of which would continue to be available for recreationists. However, due to the length of time that
 5 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
 6 related to temporary disruption of existing recreational activities at facilities within the impact area
 7 would be adverse.

8 **CEQA Conclusion:** Construction of the Alternative 2C intakes and related water conveyance facilities
 9 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 10 years) impacts on well-established recreational opportunities and experiences in the study area
 11 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 12 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 13 commitments, and AMMs would reduce these construction-related impacts by implementing
 14 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 15 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 16 and implement noise reduction and complaint tracking measures. However, the level of impact
 17 would not be reduced to less than significant because even though mitigation measures and
 18 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
 19 and noise conditions that could detract from the recreation experience, due to the dispersed effects
 20 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
 21 of these impacts to less than significant in all instances such that there would be no reduction of
 22 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 23 considered significant and unavoidable. However, the impacts related to construction of the intakes
 24 would be less than significant.

25 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

26 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 27 1A.

28 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 29 **Disturbance of Nesting Birds**

30 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 31 Alternative 1A, Impact BIO-75.

32 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 33 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 34 **Transmission Lines and Underground Transmission Lines Where Feasible**

35 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and** 38 **Sensitive Receptors**

39 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 40 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
21 **Residents**

22 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 16 **Result of Constructing the Proposed Water Conveyance Facilities**

17 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
 18 waterways in the study area under Alternative 2C would be the same as those described for
 19 Alternative 1C. Alternative 2C would also involve construction of an operable barrier at the head of
 20 Old River. Construction of Alternative 2C would result in the creation of obstructions to boat passage
 21 causing boat traffic delays, and impediments to boat movement. Overall, effects on temporary
 22 alteration of recreational navigation would be considered adverse. Mitigation Measure TRANS-1a
 23 would be available to reduce effects to marine navigation by development and implementation of
 24 site-specific construction traffic management plans, including specific measures related to
 25 management of barges and stipulations to notify the commercial and leisure boating communities of
 26 proposed barge operations in the waterways. Additionally, BDCP proponents would contribute
 27 funds for the construction of new recreation opportunities as well as for the protection of existing
 28 recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
 29 proponents would also assist in funding the expansion of state recreation areas in the Delta as
 30 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
 31 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
 32 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
 33 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
 34 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
 35 recreational opportunities within the project area by providing a recreational opportunity
 36 downstream/upstream in the same area for the same regional recreational users. These
 37 commitments are further described in Appendix 3B, *Environmental Commitments*.

38 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
 39 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
 40 throughout the Plan Area. However, the BDCP proponents would also commit to partner with

1 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
2 Agriculture Research Service, University of California Cooperative Extension Weed Research and
3 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
4 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
5 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
6 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
7 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
8 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
9 Enhanced ability to control these invasive vegetation would lead to increased recreation
10 opportunities which would compensate for the loss of recreational opportunities within the project
11 area by providing a recreational opportunity downstream/upstream in the same area for the same
12 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
13 *Commitments*.

14 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
15 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
16 proponents would also ensure through various outreach methods that recreationists were aware of
17 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
18 Cut).

19 The barge unloading facilities would be removed after construction is complete and the operable
20 barrier will include a boat lock to permit boat passage once construction is complete. Construction
21 of the operable barrier would last for 2 years (short-term) and would not result in long-term
22 reduction of recreation opportunities. This component would not result in adverse effects on
23 recreational navigation.

24 Construction-related effects on recreational navigation in the vicinity of the intakes and barge
25 unloading facilities would last approximately 5 years (long-term) and would be considered adverse
26 because of the reduced recreation opportunity and experiences expected to exist near construction
27 activity.

28 **CEQA Conclusion:** Alternative 2C would result in significant impacts on boat passage and navigation
29 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
30 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
31 boat traffic delays, impediments to boat movement. Changes to boat passage and navigation would
32 also result in temporary impacts on wakeboarding, waterskiing, and tubing because of reduced
33 speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on marine
34 navigation by development and implementation of site-specific construction traffic management
35 plans, including specific measures related to construction and management of barges and
36 stipulations to notify the commercial and leisure boating communities of proposed construction and
37 barge operations in the waterways. While the environmental commitments would reduce impacts
38 on water-based recreation (water-skiing, wakeboarding, tubing) in these areas by creating
39 alternative recreation opportunities for those eliminated during construction, these impacts would
40 be long-term and considered significant and unavoidable.

41 Construction of the operable barrier would last for 2 years (short-term) and would not result in
42 long-term reduction of recreation opportunities. This would be a less-than-significant impact on
43 recreational navigation on Old River.

1 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 2 **Plan**

3 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 6 **Result of Constructing the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** Effects on recreational fishing under Alternative 2C would be similar to those
 8 described under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic*
 9 *Resources*, Section 11.3.4.7, Sacramento River and Delta region fish populations would not be
 10 affected by changes to localized water quality conditions, underwater noise, fish stranding or other
 11 physical disturbances, or reduced habitat areas such that recreational fishing opportunities would
 12 be substantially reduced during construction. BDCP environmental commitments to prevent water
 13 quality effects include environmental training; implementation of stormwater pollution prevention
 14 plans, erosion and sediment control plans, hazardous materials management plans, and spill
 15 prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material;
 16 and a barge operations plan (Appendix 3B, *Environmental Commitments*). RTM would be removed
 17 from RTM storage areas (which represent a substantial portion of the permanent impact areas) and
 18 reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat
 19 restoration projects, or other beneficial means of reuse identified for the material. Mitigation
 20 Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport
 21 fish populations from impact pile driving. Although fish populations likely would not be affected to
 22 the degree that fishing opportunities would be substantially reduced, construction conditions would
 23 introduce noise and visual disturbances that would affect the recreation experience for anglers.

24 Although construction noise would be temporary, and primarily be limited to Monday through
 25 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
 26 sites. Visual setting disruptions could distract from the recreation experience including on
 27 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
 28 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
 29 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
 30 measures would also be available to address construction-related visual effects on sensitive
 31 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
 32 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
 33 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
 34 addition, the chapter identifies measures to address longer term visual effects associated with
 35 changes to the landscape/visual setting from construction and the presence of new water
 36 conveyance features. These include developing and implementing a spoil/borrow and RTM area
 37 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
 38 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
 39 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
 40 implementing best management practices to implement a project landscaping plan (AES-1g).
 41 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
 42 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
 43 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
 44 anglers with alternative bank fishing access sites further removed from areas affected by
 45 construction. This effect would not be adverse.

1 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 2 construction activities would be considered less than significant because the BDCP would include
 3 environmental commitments to prevent water quality effects include environmental training;
 4 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 5 hazardous materials management plans, and spill prevention, containment, and countermeasure
 6 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 7 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 8 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 9 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 10 that there would be no long-term reduction of local fishing opportunities and experiences. This
 11 impact would be less than significant.

12 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

13 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 14 1A.

15 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 16 **of Pile Driving and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 20 **and Other Construction-Related Underwater Noise**

21 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 22 Alternative 1A, Impact AQUA-1.

23 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 24 **Construction**

25 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

26 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 27 **Tracking Program**

28 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

29 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 30 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 31 **Transmission Lines and Underground Transmission Lines Where Feasible**

32 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 35 **Sensitive Receptors**

36 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 19 Alternative 1A, Impact AES-1.

20 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 21 **Result of the Operation of the Proposed Water Conveyance Facilities**

22 **NEPA Effects:** Operation of Alternative 2C may result in changes in entrainment, spawning, rearing
 23 and migration. However, in general, effects on (non-covered) fish species that are popular for
 24 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 25 recreational fishing. While there are some significant impacts to specific non-covered species, as
 26 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.7, they are typically limited to
 27 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 28 would not result in a substantial long-term reduction in recreational fishing opportunities

29 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 30 operation of Alternative 2C would be considered less than significant because any impacts to fish
 31 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 32 would not impact the species population of any popular sportfishing species overall.

33 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 34 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 35 **of-Delta Reservoirs**

36 **NEPA Effects:** Alternative 2C would have the same operational scenario as Alternative 2A, and as
 37 shown in Table 15-12a and Table 15-12b, Alternative 2C would result in the same changes in the

1 frequency with which the end-of-September reservoir levels at study area reservoirs fall below
2 levels identified as important water-dependent recreation thresholds relative to Existing Conditions
3 (CEQA baseline) and the No Action Alternative (2060) (alternative operations contribution [impact]
4 comparison) as discussed under Alternative 2A. Also see Chapter 3, *Description of Alternatives*,
5 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *Modeling*
6 *Methodology*, for an explanation of the CALSIM II model and assumptions.

7 **Existing Conditions (CEQA Baseline) Compared to Alternative 2C (2060)**

8 As shown in Table 15-12a and Table 15-12b, under Alternative 2C there would be from 4 to 31
9 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
10 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
11 Trinity Lake, Shasta Lake, Folsom Lake, Lake Oroville, and San Luis Reservoir. However, as discussed
12 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
13 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
14 specifically define the exact extent of the changes due to implementation of the action alternative
15 using these model simulation results. Thus, the precise contributions of sea level rise and climate
16 change to the total differences between Existing Conditions and Alternative 2C cannot be isolated in
17 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative
18 2C (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
19 attributable to operation of Alternative 2C.

20 **No Action Alternative (2060) Compared to Alternative 2C (2060)**

21 The comparison of Alternative 2C (2060) to the No Action Alternative (2060) condition most closely
22 represents changes in reservoir elevations that may occur as a result of operation of the alternative
23 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
24 *Methodology*). As shown in Table 15-12a and Table 15-12b, operation of Alternative 2C would
25 primarily result in changes in the frequency with which the end of September reservoir levels at
26 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below
27 levels identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir
28 show greater difference when compared to the No Action Alternative (2060) than projected for the
29 other reservoirs.

30 In comparisons of Alternative 2C (2060) operations to No Action Alternative (2060), the CALSIM II
31 modeling results indicate that reservoir levels under Alternative 2C operations would vary from one
32 reservoir to another and that most, with the exception of San Luis Reservoir, would experience little
33 to no change or would fall below the individual reservoir thresholds less frequently than under No
34 Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely
35 affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and
36 Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall
37 below the recreation thresholds thus indicating better boating opportunities, when compared to No
38 Action Alternative (2060) conditions. Operation of Alternative 2C would not adversely affect water-
39 dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, recreation
40 boating opportunity in September would be reduced more frequently under Alternative 2C (2060)
41 (25 years) relative to No Action Alternative (2060) for the Dinosaur Point boat launch. However,
42 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
43 substantially change relative to the No Action Alternative (2060) (there would be three additional
44 years below the threshold in 2060). Therefore, because the Basalt boat launch would still be

1 available for access to the reservoir, and the change in frequency with which the recreation
2 threshold would be exceeded is less than 10% (8 years or less), these changes in elevation at San
3 Luis Reservoir under operation of Alternative 2C would not be adverse. Shoreline fishing would still
4 be possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
5 would be available. These changes would not be adverse.

6 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
7 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
8 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
9 Alternative 2C (2060) operations would fall below the individual reservoir thresholds either with
10 the same or reduced frequency than under the No Action Alternative (2060). These changes in
11 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
12 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
13 Lake Oroville and Folsom Lake, because there would be fewer years in which the lake levels fall
14 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
15 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
16 Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point
17 boat launch, access to the Basalt boat launch would not substantially change. The modeled
18 additional three years of exceeding the recreation threshold attributable to operation of Alternative
19 2C (2060) relative to the No Action Alternative (2060) would be less than significant because it is a
20 less than 10% change (8 years or less). Operation of Alternative 2C would not substantially affect
21 water-dependent or water-enhanced recreation at these reservoirs. This would be a less-than-
22 significant impact. No mitigation is required.

23 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 24 **Result of Maintenance of the Proposed Water Conveyance Facilities**

25 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
26 structural facilities under Alternative 2C would be the same as described for Alternative 1A, Impact
27 REC-7, and would result in periodic temporary but not substantial effects on boat passage and
28 water-based recreational activities. Any effects would be short-term (less than 2 years) and
29 intermittent. Other facility maintenance activities would occur on land and would not affect boat
30 passage and navigation. Implementation of the environmental commitment to provide notification
31 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
32 *Commitments*) would reduce these effects. These effects are not considered adverse.

33 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
34 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
35 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
36 environmental commitment to provide notification of construction and maintenance activities in
37 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
38 Intake maintenance impacts on recreation would be considered less than significant because
39 impacts, if any, on public access or public use of established recreation facilities would last for 2
40 years or less. Mitigation is not required.

1 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
 2 **Result of Maintenance of the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** Effects related to changes in opportunities for land-based recreation as a result of
 4 maintenance of conveyance facilities under Alternative 2C would be the same as described for
 5 Alternative 1C, Impact REC-8. Maintenance would be short-term and intermittent and would be
 6 conducted within the individual facility right-of-way, which does not include any recreation facilities
 7 or recreation use areas. There would be no adverse effects on recreation opportunities as a result of
 8 maintenance of the proposed water conveyance facilities.

9 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 10 would not result in any changes to recreational opportunities. Therefore, there would be no impact.
 11 Mitigation is not required.

12 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 13 **Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
 15 components as part of Alternative 2C could have effects related to recreational fishing that are
 16 similar in nature to those discussed above for construction, and operation and maintenance of
 17 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
 18 effects would likely be substantially lower because the nature of the activities associated with
 19 implementing the conservation components would be different—less heavy construction equipment
 20 would be required and the restoration actions would be implemented over a longer time frame than
 21 CM1. Potential effects from implementation of the conservation components would be dispersed
 22 over a larger area and would generally involve substantially fewer construction and operation
 23 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
 24 components would be expected to result in long-term benefits to aquatic species. Additional
 25 discussion related to the individual conservation measures is provided below.

26 With regards to fishing opportunities, effects of implementing the conservation components under
 27 Alternative 2C would be similar to those described for Alternative 1A. CM2–CM21 would be
 28 expected to improve fishing opportunities in the study area although some effect on fishing
 29 opportunities could take place during implementation of the conservation measures. Overall,
 30 implementing the proposed conservation components would be expected to provide beneficial
 31 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

32 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
 33 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
 34 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
 35 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
 36 implementation stage, these measures could result in impacts on fishing opportunities by
 37 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
 38 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
 39 onshore fishing opportunities. These impacts would be considered less than significant because the
 40 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
 41 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
 42 Plan(Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
 43 and although these CMs would result in highly localized reductions of predatory species, overall,
 44 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory

1 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.7). Construction of
 2 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
 3 recreational fishing. The potential impact on covered and non-covered sport fish species from
 4 construction activities would be considered less than significant because the BDCP would include
 5 environmental commitments to prevent water quality effects include environmental training;
 6 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 7 hazardous materials management plans, and spill prevention, containment, and countermeasure
 8 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
 9 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
 10 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
 11 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
 12 implementation of the other conservation components. Because construction of the conservation
 13 measure component facilities would be less intense and of shorter duration than construction of
 14 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 15 the construction-related impacts on recreational fishing associated with the other conservation
 16 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 17 will undergo additional environmental review and permitting which will include identification of
 18 site-specific measures to further protect resources.

19 Environmental commitments that will reduce construction-related impacts on recreation include a
 20 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 21 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 22 REC-3, above). In addition, a number of mitigation measures will address construction-related
 23 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 24 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 25 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 26 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 27 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 28 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 29 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.7). Mitigation measures NOI-1a
 30 and NOI-1b will address construction-related noise concerns (see additional discussion under
 31 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.7). Finally, should
 32 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 33 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 34 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.7).

35 In the long term, the impact on fishing opportunities would be considered beneficial because the
 36 conservation measures are intended to enhance aquatic habitat and fish abundance.

37 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 38 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 39 **Transmission Lines and Underground Transmission Lines Where Feasible**

40 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 41 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 16 **of Pile Driving and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 20 **and Other Construction-Related Underwater Noise**

21 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 22 Alternative 1A, Impact AQUA-1.

23 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 24 **as a Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 26 conservation components under Alternative 2C would be similar to those described for Alternative
 27 1A. Implementing the conservation measures could result in an adverse effect on recreation by
 28 limiting boating by reducing the extent of navigable waterways available to boaters. Once
 29 implemented, the conservation measures could provide beneficial effects to recreation by expanding
 30 the extent of navigable waterways available to boaters, improving and expanding boat launch
 31 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

32 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 33 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 34 BDCP proponents would implement environmental commitments to include a noise abatement plan
 35 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 36 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 37 available to address construction-related effects on recreational boating by reducing the degree of

1 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 2 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 3 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 4 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 5 and transportation safety and access conditions of the marina (see additional discussion under
 6 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.7).
 7 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 8 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 9 *Noise*, Section 23.4.3.7).

10 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 11 some habitat restoration and enhancement measures and other conservation measures would limit
 12 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 13 water available to boaters. Temporary effects would also stem from construction, which may limit
 14 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 15 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 16 experience by expanding the extent of navigable waterways available to boaters, improving and
 17 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 18 navigation. Because these measures would not be anticipated to result in a substantial long-term
 19 disruption of boating activities, this impact is considered less than significant for the conservation
 20 measures, with the exception of CM18, discussed further below.

21 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 22 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 23 The BDCP proponents would implement environmental commitments to include a noise abatement
 24 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 25 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 26 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 27 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 28 Section 17.3.3.2 Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 29 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 30 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 31 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 32 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.7). Mitigation measures NOI-1a
 33 and NOI-1b will address construction-related noise concerns (see additional discussion under
 34 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.7). Implementation of
 35 these measures, as determined applicable to construction of this facility under future site-specific
 36 environmental review, would reduce impacts on recreational boating to less than significant. No
 37 additional mitigation would be required.

38 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 39 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 40 **Transmission Lines and Underground Transmission Lines Where Feasible**

41 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 42 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 16 **Result of Implementing Conservation Measures 2-21**

17 **NEPA Effects:** Implementing the conservation components under Alternative 2C would have similar
 18 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.
 19 Implementing the conservation measures could result in an adverse effect on recreation
 20 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 21 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 22 suitable for hiking, nature photography, or other similar activity. However, environmental
 23 commitments would reduce these effects, and implementation of the measures would also restore
 24 or enhance new potential sites for upland recreation thereby improving the quality recreational
 25 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 26 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 27 mechanism and would not result in a physical change to upland areas; construction under CM18,
 28 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 29 action primarily located at boat launches and would not affect upland recreation areas and related
 30 opportunities. These measures are not discussed further in this analysis.

31 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 32 conservation measures would temporarily limit opportunities for upland recreational activities
 33 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 34 construction activities would also temporarily compromise the quality of upland recreation in and
 35 around these areas. Additionally, it is possible that current areas of upland recreation would be
 36 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 37 activities. These impacts on upland recreational opportunities would be considered less than
 38 significant because the BDCP would include environmental commitments that would require BDCP
 39 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 40 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*

1 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 2 upland recreation and the measure would improve the quality of existing recreational opportunities
 3 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 4 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 5 considered less than significant.

6 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 7 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 8 **Addressing Recreation Resources**

9 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 10 Alternative 2C would generally have the same potential for incompatibilities with one or more plans
 11 and policies related to protecting recreation resources in the study area as described for Alternative
 12 1C, Impact AES-12. Variation would result from construction of an operable barrier at the head of
 13 Old River. However, the operable barrier would fall under the same jurisdictions as discussed under
 14 Alternative 1C, and so, overall the potential for incompatibility is the same. As described under
 15 Alternative 1C, there would be potential for the alternative to be incompatible with plans and
 16 policies related to protecting and promoting recreation opportunities in the study area (i.e., The
 17 Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992, *Delta Protection Commission Land*
 18 *Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and*
 19 *Franks Tract State Recreation Areas General Plan*). In addition, with the exception of San Joaquin
 20 County, the alternative may be incompatible with county general plan policies that protect
 21 recreation resources in the study area.

22 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 23 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 24 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 25 the alternative with relevant plans and polices.

26 **15.3.3.8 Alternative 3—Dual Conveyance with Pipeline/Tunnel and**
 27 **Intakes 1 and 2 (6,000 cfs; Operational Scenario A)**

28 For the purposes of assessment of effects on recreation, Alternative 3 is the same as Alternative 1A,
 29 with the following exceptions.

- 30 ● Alternative 3 includes Intakes 1 and 2 only.
- 31 ● Alternative 3 has a different operations scenario (6,000 cfs).

32 Table 15-11 lists the recreation sites and areas that may be affected by Alternative 3, except that
 33 sites or areas affected by Intakes 3, 4, or 5, would not be affected under this alternative (Clarksburg
 34 Fishing Access) (Mapbook Figure 15-1). Specific effects on recreation areas or sites are discussed
 35 under Alternative 1A.

36 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
 37 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
 38 **Proposed Water Conveyance Facilities**

39 **NEPA Effects:** Effects on recreation as a result of the post-construction location of water conveyance
 40 facilities associated with Alternative 3 would be the same as those described under Alternative 1A,
 41 Impact REC-1, although, there would be only two intake locations under Alternative 3. The proposed

1 location of the intake facilities, tunnels, and associated water conveyance facilities would not lie
 2 within the designated boundaries of an existing public use recreation site, including parks, marinas,
 3 or other designated areas. Therefore, there would be no adverse effects. Effects on recreation
 4 related to construction of the water conveyance facilities are discussed below in Impact REC-2. Also
 5 see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.8, and Chapter 23, *Noise*, Section
 6 23.4.3.8, for additional discussion of these topics.

7 **CEQA Conclusion:** The alternative would not locate alternative facilities that would result in the
 8 permanent displacement of any well-established public use or private commercial recreation facility
 9 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 10 required.

11 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences** 12 **as a Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Effects related to temporary disruption of recreation opportunities or experiences
 14 under Alternative 3 would be similar to those described for Alternative 1A; however, only two
 15 intake locations would be constructed under Alternative 3 (Intakes 1 and 2). Effects associated with
 16 Alternative 3 construction of physical components would be anticipated to be less severe relative to
 17 Alternative 1A for the Clarksburg Fishing Access and Stone Lakes NWR because Intakes 3, 4, and 5
 18 would not be constructed. Construction of Alternative 3 intakes and water conveyance facilities
 19 would result in temporary effects related to disruption of recreational opportunities and
 20 experiences at five recreation sites in the study area during construction. Indirect effects on
 21 recreation experiences may occur as a result of impaired access, construction noise, or negative
 22 visual effects associated with construction.

23 **Other Recreation Opportunities**

24 *On-Water Recreation*

25 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
 26 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
 27 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
 28 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
 29 outside of the impact area for noise, the overall recreation experience upstream or downstream of
 30 these sites may fall within the noise impact area and could experience diminished recreation
 31 opportunities because of the elevated noise levels as well as visual setting disruptions over the
 32 course of intake installation. Overall, construction activities associated with the proposed water
 33 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
 34 occur Monday through Friday for up to 24 hours per day. In-river construction would be further
 35 limited primarily to June 1 through October 31 each year. Although dewatering would take place 7
 36 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction
 37 would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes,
 38 resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to
 39 experience a changed recreation setting.

40 *Campgrounds*

41 Nighttime construction activities would require the use of bright lights that would negatively affect
 42 nighttime views of and from the work area. This would affect any overnight camping at the

1 recreation sites and areas discussed above, although day use areas that close at sunset would not be
2 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
3 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.8,
4 another nighttime effect on recreation would be construction noise levels that could adversely affect
5 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
6 construction could be infrequent and intermittent, but would adversely affect camping sites.
7 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
8 NOI-1b would be available to address these effects.

9 **Summary**

10 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
11 sites near recreation sites or area, and in-river construction activities primarily would be limited to
12 June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
13 12.3.3.8, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.8, Chapter 19, *Transportation*,
14 Section 19.3.3.8, and Chapter 23, *Noise*, Section 23.4.3.8, for additional detail related to
15 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
16 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
17 sites or areas within the construction impact area.

18 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
19 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
20 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
21 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
22 measures, environmental commitments, and conservation measures would provide several benefits
23 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
24 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
25 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
26 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
27 degradation associated with accidental spills, runoff and sedimentation, and dust could have
28 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
29 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
30 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
31 crane, would be implemented by the BDCP proponents where determined necessary for all covered
32 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
33 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
34 *Commitments*, DWR would implement an environmental commitment that would dispose of and
35 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
36 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
37 of the action alternatives, implementation of CM3 and CM11 will result in protection and
38 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
39 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
40 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
41 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
42 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
43 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
44 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
45 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
46 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,

1 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
2 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
3 bicycling, equestrian use, hunting, fishing, and boating.

4 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.8, identifies a number of mitigation
5 measures that would be available to address construction-related visual effects on sensitive
6 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
7 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
8 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
9 addition, the chapter identifies measures to address longer term visual effects associated with
10 changes to the landscape/visual setting from construction and the presence of new water
11 conveyance features. These include developing and implementing a spoil/borrow and RTM area
12 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
13 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
14 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
15 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
16 would also make a commitment to enhance the visual character of the area by creating new wildlife
17 viewing sites and enhancing interest in the construction site by constructing viewing areas and
18 displaying information about the project, which may attract people who may use the recreation
19 facilities to the construction site as part of the visit.

20 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
21 proponents will work with the California Department of Parks and Recreation to help insure the
22 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
23 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
24 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
25 helping to fund or construct elements of the American Discovery Trail and the potential conversion
26 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
27 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
28 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
29 proposal. The BDCP project proponents will also work with DPR to determine if some of the
30 constructed elements of CM1 could incorporate elements of the DPR's proposal.

31 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
32 involve preparation of site-specific construction traffic management plans that would address
33 potential public access routes and provide construction information notification to local residents
34 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
35 of access to affected recreation areas as an environmental commitment. Where construction
36 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
37 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
38 construction sites. These would be designed to be safe, pleasant and would integrate with
39 opportunities to view the construction site as an additional area of interest. These physical facilities
40 would be combined with public information, including sidewalk wayfinding information that would
41 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
42 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
43 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
44 congested roadway segments.

1 Chapter 23, *Noise*, Section 23.4.3.8, discusses that construction noise effects could be addressed
 2 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
 3 implementation of a complaint/response tracking program (NOI-1b), and an environmental
 4 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
 5 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
 6 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
 7 viewing the aesthetic amenities of the area.

8 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
 9 2 would ensure continued access to existing recreation experiences. The Delta offers many
 10 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
 11 all of which would continue to be available for recreationists. However, due to the length of time that
 12 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
 13 related to temporary disruption of existing recreational activities at facilities within the impact area
 14 would be adverse.

15 **CEQA Conclusion:** Construction of Alternative 3 intakes and related water conveyance facilities
 16 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 17 years) impacts on well-established recreational opportunities and experiences in the study area
 18 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 19 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 20 commitments, and AMMs would reduce these construction-related impacts by implementing
 21 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 22 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 23 and implement noise reduction and complaint tracking measures. However, the level of impact
 24 would not be reduced to less than significant because even though mitigation measures and
 25 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
 26 and noise conditions that could detract from the recreation experience, due to the dispersed effects
 27 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
 28 of these impacts to less than significant in all instances such that there would be no reduction of
 29 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 30 considered significant and unavoidable. However, the impacts related to construction of the intakes
 31 would be less than significant.

32 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

33 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 34 1A.

35 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 36 **Disturbance of Nesting Birds**

37 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 38 Alternative 1A, Impact BIO-75.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
30 **Residents**

31 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 2 **Construction**

3 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 6 **to Prevent Light Spill from Truck Headlights toward Residences**

7 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 10 **Plan**

11 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 14 **Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 18 **Agreements to Enhance Capacity of Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 22 **Construction**

23 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

24 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 25 **Tracking Program**

26 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

27 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 28 **Result of Constructing the Proposed Water Conveyance Facilities**

29 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
 30 waterways in the study area, including direct effects on boat passage related to the creation of
 31 obstructions and associated boat traffic delays, would be similar to those described for Alternative
 32 1A; however, only two intake locations would be constructed under Alternative 3 (Intakes 1 and 2).
 33 While effects associated with this alternative would therefore be anticipated to be less severe than
 34 those from Alternative 1A, substantial conflicts with navigation would remain from the temporary
 35 barge facilities.

1 Direct effects on boat passage and navigation on the Sacramento River would result from
2 construction of the intakes. Effects could include reduced access and delays to boat passage and
3 navigation related to the narrower available river width and temporary speed zones. However, boat
4 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
5 Water-based recreational activities such as waterskiing, wakeboarding, or tubing are also low. In
6 addition, there would be sufficient width in the channel to allow boat passage, with minor delays
7 related to construction speed zones. These effects would be long-term, lasting approximately 5 years
8 and would be considered adverse because of the reduced recreation opportunity and experiences
9 expected to exist near construction activity.

10 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
11 and navigation on the Sacramento River and other waterways in the study area, including the
12 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
13 channel closures that could impede boat movement and eliminate recreational opportunities. In
14 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
15 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
16 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
17 implementation of site-specific construction traffic management plans, including specific measures
18 related to management of barges and stipulations to notify the commercial and leisure boating
19 communities of proposed construction and barge operations in the waterways. Additionally, BDCP
20 proponents would contribute funds for the construction of new recreation opportunities as well as
21 for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the
22 Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in
23 the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds
24 could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-
25 Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin,
26 the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent
27 with, commencement of construction of the BDCP. This commitment serves to compensate for the
28 loss of recreational opportunities within the project area by providing a recreational opportunity
29 downstream/upstream in the same area for the same regional recreational users. These
30 commitments are further described in Appendix 3B, *Environmental Commitments*.

31 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
32 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
33 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
34 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
35 Agriculture Research Service, University of California Cooperative Extension Weed Research and
36 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
37 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
38 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
39 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
40 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
41 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
42 Enhanced ability to control these invasive vegetation would lead to increased recreation
43 opportunities which would compensate for the loss of recreational opportunities within the project
44 area by providing a recreational opportunity downstream/upstream in the same area for the same
45 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
46 *Commitments*.

1 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
 2 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
 3 proponents would also ensure through various outreach methods that recreationists were aware of
 4 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
 5 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be
 6 considered adverse because of the reduced recreation opportunity and experiences expected to
 7 exist near construction activity.

8 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
 9 construction of the intakes and temporary barge unloading facilities. Impacts would last
 10 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
 11 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
 12 closures could impede boat movement and eliminate recreational opportunities. In waterways
 13 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
 14 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
 15 development and implementation of site-specific construction traffic management plans, including
 16 specific measures related to management of barges and stipulations to notify the commercial and
 17 leisure boating communities of proposed barge operations in the waterways. While the
 18 environmental commitments would reduce impacts on water-based recreation (water-skiing,
 19 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
 20 eliminated during construction, these impacts would be long-term and therefore considered
 21 significant and unavoidable.

22 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 23 **Plan**

24 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 25 Impact TRANS-1.

26 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 27 **Result of Constructing the Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Effects on recreational fishing under Alternative 3 would be similar to those described
 29 under Alternative 1A, Impact REC-4. However, only two intake locations (Intakes 1 and 2) would be
 30 constructed under Alternative 3, so effects associated with construction of physical components
 31 would be anticipated to be less severe.

32 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8, Sacramento River and Delta
 33 region fish populations would not be affected by changes to localized water quality conditions,
 34 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
 35 recreational fishing opportunities would be substantially reduced during construction. BDCP
 36 environmental commitments to prevent water quality effects include environmental training;
 37 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 38 hazardous materials management plans, and spill prevention, containment, and countermeasure
 39 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 40 *Environmental Commitments*). Under this commitment, RTM would be removed from RTM storage
 41 areas (which represent a substantial portion of the permanent impact areas) and reused, as
 42 appropriate, as bulking material for levee maintenance, as fill material for habitat restoration
 43 projects, or other beneficial means of reuse identified for the material. Mitigation Measures AQUA-

1 1a and AQUA-1b would be available to avoid and minimize adverse effects on sport fish populations
2 from impact pile driving. Although fish populations likely would not be affected to the degree that
3 fishing opportunities would be substantially reduced, construction conditions would introduce
4 noise and visual disturbances that would affect the recreation experience for anglers.

5 Although construction noise would be temporary, and primarily be limited to Monday through
6 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
7 sites. Visual setting disruptions could distract from the recreation experience including on
8 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
9 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
10 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
11 measures would also be available to address construction-related visual effects on sensitive
12 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
13 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
14 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
15 addition, the chapter identifies measures to address longer term visual effects associated with
16 changes to the landscape/visual setting from construction and the presence of new water
17 conveyance features. These include developing and implementing a spoil/borrow and RTM area
18 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
19 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
20 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
21 implementing best management practices to implement a project landscaping plan (AES-1g).
22 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
23 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
24 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
25 anglers with alternative bank fishing access sites further removed from areas affected by
26 construction. This effect would not be adverse.

27 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
28 construction activities would be considered less than significant because the BDCP would include
29 environmental commitments to prevent water quality effects include environmental training;
30 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
31 hazardous materials management plans, and spill prevention, containment, and countermeasure
32 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
33 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
34 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
35 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
36 that there would be no long-term reduction of local fishing opportunities and experiences. This
37 impact would be less than significant.

38 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

39 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
40 1A.

1 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
2 **of Pile Driving and Other Construction-Related Underwater Noise**

3 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
4 Alternative 1A, Impact AQUA-1.

5 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
6 **and Other Construction-Related Underwater Noise**

7 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
8 Alternative 1A, Impact AQUA-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
16 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
17 **Transmission Lines and Underground Transmission Lines Where Feasible**

18 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
21 **Sensitive Receptors**

22 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
25 **Material Area Management Plan**

26 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

29 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
32 **Extent Feasible**

33 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 10 **Result of the Operation of the Proposed Water Conveyance Facilities**

11 **NEPA Effects:** Operation of Alternative 3 may result in changes in entrainment, spawning, rearing
 12 and migration. However, in general, effects on (non-covered) fish species that are popular for
 13 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 14 recreational fishing. While there are some significant impacts to specific non-covered species, as
 15 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8, they are typically limited to
 16 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 17 would not result in a substantial long-term reduction in recreational fishing opportunities

18 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 19 operation of Alternative 3 would be considered less than significant because any impacts to fish and,
 20 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 21 not impact the species population of any popular sportfishing species overall.

22 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 23 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 24 **of-Delta Reservoirs**

25 **NEPA Effects:** Operation of Alternative 3 would result in changes in the frequency with which the
 26 end of September reservoir levels at study area reservoirs fall below levels identified as important
 27 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 28 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 29 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 30 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 31 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

32 **Existing Conditions (CEQA Baseline) Compared to Alternative 3 (LLT-2060)**

33 As shown in Table 15-12a and Table 15-12b, under Alternative 3 there would be from 1 to 20
 34 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 35 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 36 Trinity Lake, Shasta Lake, Folsom Lake, and San Luis Reservoir. However, as discussed under
 37 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
 38 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
 39 the exact extent of the changes due to implementation of the action alternative using these model
 40 simulation results. Thus, the precise contributions of sea level rise and climate change to the total

1 differences between Existing Conditions and Alternative 3 cannot be isolated in this comparison.
2 Please refer to the comparison of the No Action Alternative (2060) to Alternative 3 (2060) for a
3 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
4 operation of Alternative 3.

5 **No Action Alternative (2060) Compared to Alternative 3 (2060)**

6 The comparison of Alternative 3 (2060) to the No Action Alternative (2060) condition most closely
7 represents changes in reservoir elevations that may occur as a result of operation of the alternative
8 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
9 *Methodology*).

10 In comparisons of Alternative 3 (2060) operations to No Action Alternative (2060), the CALSIM II
11 modeling results indicate that reservoir levels under Alternative 3 operations, with the exception of
12 San Luis Reservoir, would fall below the individual reservoir thresholds less frequently than under
13 No Action Alternative (2060) (Table 15-12a and Table 15-12b). These changes in reservoir
14 elevations would not be adverse at Trinity Lake, Shasta Lake, Oroville Reservoir, Folsom Lake, and
15 New Melones Lake and would be considered beneficial effects of Alternative 3 operations. Operation
16 of Alternative 3 would not adversely affect water-dependent or water-enhanced recreation at these
17 reservoirs. Overall, these conditions represent improved recreation conditions under operation of
18 Alternative 3 because there would be fewer years in which end-of-September reservoir levels would
19 fall below the recreation thresholds thus indicating better boating opportunities, when compared to
20 No Action Alternative (2060) conditions.

21 The modeling for San Luis Reservoir indicates there could be up to 8 additional years relative to the
22 No Action Alternative (2060) condition for which the reservoir level would fall below the reservoir
23 boating threshold for the Dinosaur Point boat launch. This is a less than 10% change and would not
24 result in a substantial reduction in recreation opportunities or experiences. In addition, at the Basalt
25 boat launch, which is accessible to elevation 340 feet, operations under Alternative 3 (2060) would
26 result in one less year for which reservoir elevations would fall below the recreation threshold
27 relative to the No Action Alternative (2060) condition. This is considered a beneficial effect on
28 recreation opportunities. Shoreline fishing would still be possible, and other recreation activities at
29 the reservoir—picnicking, biking, hiking, and fishing—would be available. These changes would not
30 be adverse.

31 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
32 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
33 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
34 Alternative 3 (2060) operations would fall below the individual reservoir thresholds less frequently
35 than under No Action Alternative (2060). These changes in reservoir and lake elevations would
36 result in a less-than-significant impact on recreation opportunities and experiences at Trinity Lake,
37 Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be fewer
38 years in which the reservoir or lake levels fall below the recreation threshold relative to No Action
39 Alternative (2060) conditions, these impacts would be considered beneficial impacts on recreation
40 opportunities and experiences. Operation of Alternative 3 would not substantially affect water-
41 dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the modeling
42 indicates that under Alternative 3 (2060) operations relative to the No Action Alternative (2060),
43 reservoir levels could exceed the recreation threshold up to 8 additional years at the Dinosaur Point
44 boat launch, while access to the Basalt boat launch would not substantially change (one less year).

1 These are less than 10% changes and would not result in a substantial reduction in recreation
2 opportunities or experiences at this reservoir. Overall, these conditions represent improved
3 recreation conditions under operation of Alternative 3 because there would be fewer years in which
4 end-of-September reservoir levels would fall below the recreation thresholds thus indicating better
5 boating opportunities, when compared to No Action Alternative (2060) conditions. No mitigation is
6 required.

7 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
8 **Result of Maintenance of the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
10 intake facilities under Alternative 3 would be similar to those described for Alternative 1A; however,
11 maintenance activities would only be necessary for two intake facilities under this alternative.
12 Maintenance would result in periodic temporary but not substantial effects on boat passage and
13 water-based recreational activities. Any effects would be short-term (less than 2 years) and
14 intermittent. Other facility maintenance activities would occur on land and would not affect boat
15 passage and navigation. Implementation of the environmental commitment to provide notification
16 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
17 *Commitments*) would reduce these effects. These effects are not considered adverse.

18 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
19 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
20 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
21 environmental commitment to provide notification of construction and maintenance activities in
22 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
23 Intake maintenance impacts on recreation would be considered less than significant because
24 impacts, if any, on public access or public use of established recreation facilities would last for 2
25 years or less. Mitigation is not required.

26 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
27 **Result of Maintenance of the Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Changes to land-based recreation opportunities as a result of maintenance of
29 conveyance facilities under Alternative 3 would be similar to those described for Alternative 1A,
30 Impact REC-8; however, under Alternative 3, only two intake facilities would be constructed.
31 Maintenance would be short-term and intermittent and would be conducted within the individual
32 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
33 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
34 water conveyance facilities.

35 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
36 would not result in any changes to land-based recreational opportunities. Therefore, there would be
37 no impact. Mitigation is not required.

38 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
39 **Implementing Conservation Measures 2-21**

40 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
41 components as part of Alternative 3 could have effects related to recreational fishing that are similar
42 in nature to those discussed above for construction, and operation and maintenance of proposed

1 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
2 likely be substantially lower because the nature of the activities associated with implementing the
3 conservation components would be different—less heavy construction equipment would be
4 required and the restoration actions would be implemented over a longer time frame than CM1.
5 Potential effects from implementation of the conservation components would be dispersed over a
6 larger area and would generally involve substantially fewer construction and operation effects
7 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
8 components would be expected to result in long-term benefits to aquatic species. Additional
9 discussion related to the individual conservation measures is provided below.

10 With regards to fishing opportunities, effects of implementing the conservation components under
11 Alternative 3 would be similar to those described for Alternative 1A. CM2–CM21 would be expected
12 to improve fishing opportunities in the study area although some effect on fishing opportunities
13 could take place during implementation of the conservation measures. Overall, implementing the
14 proposed conservation components would be expected to provide beneficial effects on aquatic
15 habitat and fish abundance thereby improving fishing opportunities.

16 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
17 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
18 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
19 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
20 implementation stage, these measures could result in impacts on fishing opportunities by
21 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
22 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
23 onshore fishing opportunities. These impacts would be considered less than significant because the
24 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
25 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
26 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
27 and although these CMs would result in highly localized reductions of predatory species, overall,
28 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
29 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8). Construction of
30 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
31 recreational fishing. The potential impact on covered and non-covered sport fish species from
32 construction activities would be considered less than significant because the BDCP would include
33 environmental commitments to prevent water quality effects include environmental training;
34 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
35 hazardous materials management plans, and spill prevention, containment, and countermeasure
36 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
37 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
38 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
39 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
40 implementation of the other conservation components. Because construction of the conservation
41 measure component facilities would be less intense and of shorter duration than construction of
42 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
43 the construction-related impacts on recreational fishing associated with the other conservation
44 measures to a less-than-significant level. Further, the individual facilities or conservation elements
45 will undergo additional environmental review and permitting which will include identification of
46 site-specific measures to further protect resources.

1 Environmental commitments that will reduce construction-related impacts on recreation include a
2 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
3 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
4 REC-3, above). In addition, a number of mitigation measures will address construction-related
5 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
6 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
7 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
8 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
9 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
10 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
11 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.8). Mitigation measures NOI-1a
12 and NOI-1b will address construction-related noise concerns (see additional discussion under
13 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.8). Finally, should
14 construction of conservation measure facilities require pile-driving, mitigation measures to protect
15 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
16 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8).

17 In the long term, the impact on fishing opportunities would be considered beneficial because the
18 conservation measures are intended to enhance aquatic habitat and fish abundance.

19 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
20 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
21 **Transmission Lines and Underground Transmission Lines Where Feasible**

22 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
25 **Sensitive Receptors**

26 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
29 **Material Area Management Plan**

30 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

33 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

35 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
36 **Extent Feasible**

37 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
38 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 10 **Construction**

11 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 14 **to Prevent Light Spill from Truck Headlights toward Residences**

15 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 18 **Plan**

19 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 22 **Congested Roadway Segments**

23 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 26 **Agreements to Enhance Capacity of Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 28 Impact TRANS-1.

29 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 30 **Construction**

31 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

32 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 33 **Tracking Program**

34 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 2 **of Pile Driving and Other Construction-Related Underwater Noise**

3 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 4 Alternative 1A, Impact AQUA-1.

5 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 6 **and Other Construction-Related Underwater Noise**

7 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 8 Alternative 1A, Impact AQUA-1.

9 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 10 **as a Result of Implementing Conservation Measures 2–21**

11 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 12 conservation measures under Alternative 3 would be similar to those described for Alternative 1A.
 13 Implementing the conservation measures could result in an adverse effect on recreation by limiting
 14 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
 15 conservation measures could provide beneficial effects to recreation by expanding the extent of
 16 navigable waterways available to boaters, improving and expanding boat launch facilities, and
 17 removing nonnative vegetation that restricts or obstructs navigation.

18 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 19 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 20 BDCP proponents would implement environmental commitments to include a noise abatement plan
 21 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 22 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 23 available to address construction-related effects on recreational boating by reducing the degree of
 24 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 25 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 26 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 27 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 28 and transportation safety and access conditions of the marina (see additional discussion under
 29 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.8).
 30 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 31 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 32 *Noise*, Section 23.4.3.8).

33 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 34 some habitat restoration and enhancement measures and other conservation measures would limit
 35 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 36 water available to boaters. Temporary effects would also stem from construction, which may limit
 37 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 38 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 39 experience by expanding the extent of navigable waterways available to boaters, improving and
 40 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 41 navigation. Because these measures would not be anticipated to result in a substantial long-term
 42 disruption of boating activities, this impact is considered less than significant for the conservation
 43 measures, with the exception of CM18, discussed further below.

1 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
2 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
3 The BDCP proponents would implement environmental commitments to include a noise abatement
4 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
5 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
6 address construction-related impacts on recreational boating by reducing the degree of aesthetic
7 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
8 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
9 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
10 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
11 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
12 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.8). Mitigation measures NOI-1a
13 and NOI-1b will address construction-related noise concerns (see additional discussion under
14 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.8). Implementation of
15 these measures, as determined applicable to construction of this facility under future site-specific
16 environmental review, would reduce impacts on recreational boating to less than significant. No
17 additional mitigation would be required.

18 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
19 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
20 **Transmission Lines and Underground Transmission Lines Where Feasible**

21 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
24 **Sensitive Receptors**

25 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
28 **Material Area Management Plan**

29 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

32 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
35 **Extent Feasible**

36 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
10 **Construction**

11 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
14 **to Prevent Light Spill from Truck Headlights toward Residences**

15 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
18 **Plan**

19 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
22 **Congested Roadway Segments**

23 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
26 **Agreements to Enhance Capacity of Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
30 **Construction**

31 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

32 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
33 **Tracking Program**

34 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
2 **Result of Implementing Conservation Measures 2–21**

3 **NEPA Effects:** Implementing the conservation components under Alternative 3 would have similar
4 impacts on upland recreation activities as those described for Alternative 1A, Impact REC-11.
5 Implementing the conservation measures could result in an adverse effect on recreation
6 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
7 the conservation measures could adversely affect recreation by reducing the extent of upland areas
8 suitable for hiking, nature photography, or other similar activity. However, environmental
9 commitments would reduce these effects, and implementation of the measures would also restore
10 or enhance new potential sites for upland recreation thereby improving the quality recreational
11 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
12 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
13 mechanism and would not result in a physical change to upland areas; construction under CM18,
14 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
15 action primarily located at boat launches and would not affect upland recreation areas and related
16 opportunities. These measures are not discussed further in this analysis.

17 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
18 conservation measures would temporarily limit opportunities for upland recreational activities
19 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
20 construction activities would also temporarily compromise the quality of upland recreation in and
21 around these areas. Additionally, it is possible that current areas of upland recreation would be
22 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
23 activities. These impacts on upland recreational opportunities would be considered less than
24 significant because the BDCP would include environmental commitments that would require BDCP
25 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
26 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
27 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
28 upland recreation and the measure would improve the quality of existing recreational opportunities
29 adjacent to areas modified by the conservation measures. These measures would not be anticipated
30 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
31 considered less than significant.

32 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
33 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
34 **Addressing Recreation Resources**

35 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
36 Alternative 3 would generally have the same potential for incompatibilities with one or more plans
37 and policies related to protecting and promoting recreation opportunities in the study area as
38 described for Alternative 1A, Impact AES-12. The primary difference under Alternative 3 is that only
39 Intakes 1 and 2 would be constructed. As described under Alternative 1A, there would be potential
40 for the alternative to be incompatible with plans and policies related to protecting and promoting
41 recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta
42 Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan for the*
43 *Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas*
44 *General Plan*). In addition, with the exception of Solano County, the alternative may be incompatible
45 with county general plan policies that protect visual resources in the study area.

CEQA Conclusion: The incompatibilities identified in the analysis indicate the potential for a physical consequence to the environment. The physical effects are discussed in impacts REC-1 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of the alternative with relevant plans and polices.

15.3.3.9 Alternative 4—Dual Conveyance with Modified Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)

Alternative 4 includes the construction of three north Delta intake facilities (Intakes 2, 3, and 5) between Clarksburg and Walnut Grove.) An operable barrier would be placed at the head of Old River at the confluence with the San Joaquin River. Table 15-15 lists the recreation sites and areas that may be affected by Alternative 4. Clifton Court Forebay and Cosumnes River Preserve are the only recreation facilities that fall within the construction footprint (Mapbook Figure 15-4). Specific effects on recreation areas or sites are discussed below.

Table 15-15. Recreation Sites Potentially Affected by Construction of Alternative 4

Recreation Site or Area	Primary Alternative Feature	Potential Impact Source	Duration
Stone Lakes National Wildlife Refuge	Intake; Potential Borrow Area; Shaft Location; Reusable Tunnel Material Area; Transmission Lines	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Clarksburg Boat Launch (Fishing Access)	Intake; Intake Work Area	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Cosumnes River Preserve	Shaft Location; Reusable Tunnel Material Area; Barge Unloading Facility; Safe Haven Work Area; Reusable Tunnel Material Conveyor Facility; Tunnel Work Area; Transmission Lines	Surface impact; Noise and visual disturbances	Ongoing; up to 8 years (long term)
Wimpy's Marina	Tunnel Work Area; Transmission line	Noise and visual disturbances	Up to 8 years (long term)
Westgate Landing Park	Tunnel Muck Area	Noise and visual disturbances	Up to 8 years (long term)
Delta Meadows	Forebay and Spillway; Transmission Line	Noise and visual disturbances	Ongoing; up to 5 years (long term)
Bullfrog Landing Marina	Safe Haven Work Area	Noise and visual disturbances	Up to 8 years (long term)
Clifton Court Forebay	Canal; Control Structure; Forebay; Forebay Overflow Structure; Shaft Location; Reusable Tunnel Material Area; Canal Work Area; Control Structure Work Area; Forebay Dredging Area; Barge Unloading Facility; Siphon Work Area; Transmission Lines	Surface impact; Noise and visual disturbances	Ongoing; up to 7 years (long term)

Sources: GIS data layers available from DWR: CPAD, Green Info Network, 2011; USFWS Boundaries, USFWS 2012; Recreation Areas, AECOM/ICF 2012; Recreation Facilities, AECOM/ICF 2012.

Note: Construction duration information is approximate and subject to further revision.

1 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
2 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
3 **Proposed Water Conveyance Facilities**

4 **NEPA Effects:** Alternative 4 conveyance facilities include elements that would be permanently
5 located in two existing recreation areas: Cosumnes River Preserve (tunnel, RTM area east of Eagle
6 Tree on the northern end of Staten Island, and a RTM area on the southern end of Staten Island) and
7 Clifton Court Forebay (Table 15-15 and Mapbook Figure 15-4). Additionally, proposed RTM areas
8 near Twin Cities Road could interfere with recreational-related activities on DWR-owned parcels
9 that currently host a water ski school and a venue for hound races.

10 In the Cosumnes River Preserve, an east-west permanent transmission line would be constructed
11 adjacent to the northern boundary of the preserve along Lambert Road, where CDFW manages the
12 lands as an ecological reserve. There is no public access permitted within this part of the preserve;
13 therefore, the placement of the transmission line would not displace any recreational facilities. A
14 tunnel running north to south would be located northeast of Walnut Grove from the intermediate
15 forebay south through Staten Island in land managed by The Nature Conservancy. Tunnel
16 construction would be underground and would not permanently displace any recreation facilities or
17 lands within the preserve. No recreational opportunities would be permanently displaced,
18 disrupted, or relocated by placement of the tunnel at this location. A temporary work area would
19 also be built north east of Walnut Grove. A tunnel shaft, a launch shaft, a vent shaft, two reusable
20 tunnel material areas and a conveyor facility, two temporary access roads, a permanent access road,
21 temporary work areas, and a temporary barge unloading facility would be built on Staten Island
22 (Table 15-15 and Mapbook Figure 15-4). Most recreation takes place near the visitor's center near
23 Middle Slough, approximately 1.5 miles east of the construction footprint. Recreationists use North
24 Staten Island Road for wildlife viewing, but there are no formal recreation facilities in the western
25 areas of the preserve. Temporary features would be returned to preconstruction conditions. The
26 placement of RTM areas, shaft locations, and a permanent access road would cause permanent
27 surface impacts and would permanently displace portions of the preserve that may be used by
28 recreationists. However, they would not result in the permanent loss or closure of a facility or
29 activity because visitors would still be able to access North Staten Island Road for wildlife viewing.
30 While recreational activities could be disrupted at ponds used for water ski instruction and hound
31 racing, access to these parcels is subject to lease agreements with DWR. Due to the nature of these
32 lease agreements, these activities could not reasonably be expected to continue for the long-term
33 with any definitiveness, therefore, these facilities would not be considered long-term and/or well-
34 established recreational facilities. Additionally, regardless of any disruption in these activities, there
35 would continue to be extensive opportunities for waterskiing throughout the Delta. BDCP
36 proponents would also contribute funds for the construction of new recreation opportunities,
37 including hunting opportunities, as described in Appendix 3B, *Environmental Commitments*, Section
38 3B.2.3. Therefore, the location of the proposed water conveyance facilities would not result in the
39 permanent displacement of existing well-established public use or private commercial recreation
40 facilities, and would not cause adverse effects. While RTM areas are considered permanent surface
41 impacts for the purposes of impact analysis, it is anticipated that the RTM would be removed from
42 these areas and reused, as appropriate, as bulking material for levee maintenance, as fill material for
43 habitat restoration projects, or other beneficial means of reuse identified for the material, as
44 described in Appendix 3B, *Environmental Commitments*.

45 In the Clifton Court Forebay, permanent siphons, canals, forebay embankment areas, a control
46 structure, and a forebay overflow structure would be built. A permanent reusable tunnel material

1 area northwest of Italian Slough is within the Clifton Court Forebay recreation area but is not
 2 anticipated to hinder recreation opportunities. Temporary transmission lines, work areas, and a
 3 dredging area would also be built. There are no formal recreation facilities at Clifton Court Forebay,
 4 although well-established recreation, mostly fishing and hunting, takes place at the southern end of
 5 the forebay along the embankment. This access would be lost during construction, but once new
 6 embankments are built, recreation could again occur. The post-construction location of the water
 7 conveyance facilities would not result in permanent displacement of well-established recreation
 8 facilities available for public access. Therefore, there would be no adverse effects. Effects on
 9 recreation related to construction of the water conveyance facilities are discussed below in Impact
 10 REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.9, and Chapter 23, *Noise*,
 11 Section 23.4.3.9, for additional discussion of these topics.

12 **CEQA Conclusion:** The alternative would include the placement of permanent RTM areas, shaft
 13 locations, and an access road that would cause permanent surface impacts to Cosumnes River
 14 Preserve and would displace portions of the preserve that may be used by recreationists. However,
 15 they would not result in the permanent loss or closure of a facility or activity because visitors would
 16 still be able to access North Staten Island Road for wildlife viewing. While recreational activities
 17 could be disrupted at ponds used for water ski instruction and hound racing, access to these parcels
 18 is subject to lease agreements with DWR. Due to the nature of these lease agreements, these
 19 activities could not reasonably be expected to continue for the long-term with any definitiveness,
 20 therefore, these facilities would not be considered long-term and/or well-established recreational
 21 facilities. Additionally, regardless of any disruption in these activities, there would continue to be
 22 extensive opportunities for waterskiing throughout the Delta. BDCP proponents would also
 23 contribute funds for the construction of new recreation opportunities, including hunting
 24 opportunities, as described in Appendix 3B, *Environmental Commitments*, Section 3B.2.3. Therefore,
 25 this alternative would not result in the permanent displacement of well-established public use or
 26 private commercial recreation facilities available for public access. Impacts are considered less than
 27 significant. No mitigation is required.

28 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences** 29 **as a Result of Constructing the Proposed Water Conveyance Facilities**

30 **NEPA Effects:** Two recreation sites, Clifton Court Forebay and Cosumnes River Preserve, are within
 31 the construction footprint. A total of six recreation sites or areas are within the 1,200 to 1,400-foot
 32 indirect impact area associated with aboveground construction of the proposed water conveyance
 33 facilities (CM1) (see Chapter 23, *Noise*, Section 23.4.3.9). The effects that could occur at each
 34 potentially affected recreation site are discussed below. Potential indirect effects on recreation
 35 include access, construction noise, and changes in the visual character of the area surrounding the
 36 recreation sites, as well as reduced wildlife-related recreational opportunities due to nearby noise
 37 effects. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9, Chapter 17, *Aesthetics*
 38 *and Visual Resources*, Section 17.3.3.9, Chapter 19, *Transportation*, Section 19.3.3.9, and Chapter 23,
 39 *Noise*, Section 23.4.3.9, for additional detail related to waterfowl/wildlife, aesthetics/visual
 40 resources, transportation, and noise, respectively.

41 **Stone Lakes National Wildlife Refuge**

42 Private and public use areas within the Stone Lakes NWR fall within the indirect impact area. No
 43 public recreation facilities are located on the privately held lands within the NWR boundary(U.S.

1 Fish and Wildlife Service 2007a). The public use areas of Stone Lakes NWR include the Beach Lake
2 and North Stone Lake Units of the NWR.

3 The northern section of Stone Lakes NWR is adjacent to Intakes 2 and 3, and the southern portion is
4 approximately 1 mile from Intake 5. Recreation does occur in the northernmost section of Stone
5 Lakes NWR, which would be east of a potential borrow/spoil area associated with Intake 2 and
6 could cause noise and visual disturbances to recreationists. Construction of the proposed 230 kV
7 and 69 kV permanent transmission lines would be constructed to the west and south of the North
8 Stone Lake Unit, and could cause noise and visual disturbances to visitors in the refuge for up to 3.5
9 years. Access to the refuge would be preserved, but because of the proximity of the alignment and
10 associated construction work areas and borrow/spoil areas, there could be effects on wildlife
11 viewing and environmental education opportunities within the Stone Lakes NWR. Because
12 construction would primarily occur Monday through Friday, year-round, there could be temporary
13 effects on wildlife viewing and some environmental education opportunities that depend on the
14 presence of wildlife. Construction related to intakes could take up to five years. Hiking,
15 interpretation, and some environmental education opportunities would still be feasible within the
16 NWR; however, refuge visitors would experience a long-term reduction of recreation opportunities
17 and experiences due to construction noise and visual disruptions, resulting in reduced opportunities
18 for wildlife viewing. However, mitigation measures, environmental commitments, and conservation
19 measures would provide several benefits to waterfowl habitat and recreational opportunities. As
20 discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9, mitigation would be
21 available to address effects on nesting birds, waterfowl populations, and greater sandhill crane near
22 construction areas. In addition, over the longer term of the action alternatives, implementation of
23 CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
24 wetlands (see BDCP³ Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
25 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
26 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
27 benefit sandhill crane and other species. Implementation of CM11 would provide beneficial effects
28 on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands
29 in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed
30 wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*).
31 The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4
32 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat
33 launch facility within the footprint of the North Delta diversion facilities. Permitted activities will
34 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
35 hunting, fishing, and boating, depending on the location. Also, as discussed in Appendix 3B,
36 *Environmental Commitments*, DWR would implement an environmental commitment that would
37 dispose of and reuse spoils, reusable tunnel material, and dredged material. Materials could be
38 reused for purposes such as flood protection, habitat restoration, and subsidence reversal.

39 **Clarksburg Boat Launch (Fishing Access)**

40 The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the
41 proposed Intake 3 site. Access to the Clarksburg Boat Launch would be maintained using County
42 Road E9 (also referred to as County Highway [CH] or Old River Road); access would not be expected
43 to be a concern because most of the construction activity would take place on the east side of the

³ As described in Chapter 1, *Introduction*, Section 1.1, the full Draft EIR/EIS should be understood to include not only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.

1 Sacramento River. On-water access to the fishing site, as well as use of the boat ramp, would not be
2 affected by construction. Indirect construction noise effects on recreation in the vicinity of the
3 Clarksburg Boat Launch would last about 5 years with construction of the intake and related
4 facilities primarily ongoing Monday through Friday for up to 24 hours each day. This would be
5 considered a long-term adverse effect. In addition, because of the relatively high groundwater level
6 at all intake locations and pumping plant sites, dewatering would be necessary to provide a dry
7 workspace. As discussed in Chapter 3, *Description of Alternatives*, Section 3.6.1, dewatering would
8 take place 7 days per week and 24 hours per day and would be initiated 1–4 weeks prior to
9 excavation. Dewatering would continue until excavation is completed and the construction site is
10 protected from areas with high groundwater levels. Construction of the intake in this area would be
11 long term and would also substantially alter the recreation setting for views from the boat
12 launch/fishing access site. Therefore, constructing the proposed water conveyance facilities would
13 result in long-term reduction of recreational opportunities or experiences.

14 ***Cosumnes River Preserve (Private Lands and CDFW Ecological Reserve)***

15 Cosumnes River Preserve provides opportunities for limited fishing and hunting, hiking, paddling,
16 wildlife viewing, and environmental education. Because public access is concentrated around the
17 visitor center which is located approximately 1.5 miles east of the alternative alignment, a majority
18 of public recreation activities would likely take place outside of the construction impact areas.
19 However, Staten Island, where a portion of Cosumnes River Preserve is located and managed by The
20 Nature Conservancy, is a popular birdwatching location. Table 15-15 and Mapbook Figure 15-4
21 identify the project features that would be constructed near or through preserve lands. As discussed
22 in Impact Rec-1, a proposed permanent 230 kV transmission line would be constructed to run east-
23 west, adjacent to the northern boundary of the preserve along Lambert Road, where CDFW manages
24 the lands as an ecological reserve. There is no public access permitted within this part of the
25 preserve. Proposed temporary 230 kV and 34.5 kV transmission lines would run through the
26 preserve northeast of Walnut Grove to Eagle Tree, and through the southern end of Staten Island.
27 These portions of the preserve are managed by The Nature Conservancy and do not provide formal
28 recreation facilities; however, visitors do access these areas along North Staten Island Road for
29 wildlife viewing. Construction of the proposed transmission lines would cause temporary noise and
30 visual disturbances to visitors for up to 3.5 years. A tunnel running north to south would be located
31 northeast of Walnut Grove from the intermediate forebay south through Staten Island in land
32 managed by The Nature Conservancy. Tunnel construction would be underground and would not
33 permanently displace any recreation facilities or lands within the preserve. No recreational
34 opportunities would be permanently displaced, disrupted, or relocated by placement of the tunnel at
35 this location. A temporary work area would also be built north east of Walnut Grove. A tunnel shaft,
36 a launch shaft, a vent shaft, two reusable tunnel material areas and a conveyor facility, two
37 temporary access roads, a permanent access road, temporary work areas, and a temporary barge
38 unloading facility would be built on Staten Island (Table 15-15 and Mapbook Figure 15-4). While
39 RTM areas are considered permanent surface impacts for the purposes of impact analysis, it is
40 anticipated that the RTM would be removed from these areas and reused, as appropriate, as bulking
41 material for levee maintenance, as fill material for habitat restoration projects, or other beneficial
42 means of reuse identified for the material, as described above and in Appendix 3B, *Environmental*
43 *Commitments*. During construction, access to the preserve along North Staten Island Road could be
44 affected. Construction primarily would take place Monday through Friday, for up to 24 hours per
45 day with dewatering 7 days per week and 24 hours per day. Construction noise and views could
46 affect wildlife viewing and environmental education opportunities for docent-guided tours.

1 Construction of the proposed water conveyance facilities would reduce the amount of area available
 2 for wildlife viewing in Cosumnes River Preserve, resulting in a substantial long-term reduction of
 3 recreation opportunities and experiences. As discussed in Chapter 12, *Terrestrial Biological*
 4 *Resources*, Section 12.3.3.9, mitigation would be available to address effects on nesting birds and
 5 waterfowl populations and greater sandhill crane near construction areas. In addition, over the
 6 longer term of the action alternatives, implementation of CM3 and CM11 will result in protection
 7 and enhancement of at least 8,100 acres of managed wetlands (see BDCP⁴ Chapter 3, Section 3.4,
 8 *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat
 9 conditions for covered species and native biodiversity, including benefiting migratory waterfowl.
 10 Implementation of these conservation measures would increase wildlife viewing opportunities.
 11 Under CM3, the protection of cultivated lands will also benefit sandhill crane and other species. As
 12 described above in the Stone Lakes National Wildlife section, implementation of CM11 would
 13 provide beneficial effects on recreation opportunities by allowing recreation to occur on
 14 approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will include
 15 hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting,
 16 fishing, and boating.

17 **Wimpy's Marina**

18 Wimpy's Marina is a private boating facility located on the south fork of the Mokelumne River
 19 southeast of Walnut Grove. It contains 22 berths and a ramp, along with RV sites, a bait shop, and
 20 public fishing access. The marina is within the noise and visual disturbance impact area, and is
 21 across the river from a tunnel corridor, a vent shaft, a temporary tunnel work area, a temporary
 22 access road, and a temporary transmission line. Access to the marina from West Walnut Grove Road
 23 will be maintained during construction. On-water access to the marina and use of the marina's
 24 boating facilities would not be affected by tunnel/pipeline construction activities. Boating
 25 opportunities would still be feasible at the marina during construction of the tunnel/pipeline and
 26 temporary work area. Construction of the tunnel and use of the temporary work area would take up
 27 to 8 years and would be considered a long-term adverse effect. Construction of the access roads
 28 would both take up to 2 years, which would be considered a short-term effect (2 years or less).
 29 Construction of the temporary 230 kV transmission line could take up to 3.5 years. During
 30 construction it is possible that marina users would be disturbed by noise and visual disruptions
 31 related to the construction activities. Anglers on the river near the marina and across from the
 32 construction area would also experience noise and visual disturbances from construction.

33 **Westgate Landing Park**

34 San Joaquin County manages the 15-acre Westgate Landing Regional Park on the Mokelumne River.
 35 The park provides camping, fishing, picnicking, and boating opportunities. It has 14 campsites (RV
 36 and tent, but no hookups), 1 fishing pier, 9 picnic sites, and 24 boat slips available for overnight
 37 docking (San Joaquin County 2008c). Reusable tunnel material areas would be used during tunnel
 38 construction, for up to 8 years, and would adversely affect the recreation experience of visitors
 39 across the river due to noise and visual disturbances. Construction primarily would take place
 40 Monday through Friday, for up to 24 hours per day. Construction noise could cause adverse effects
 41 on wildlife viewing and environmental education opportunities for docent-guided tours.

⁴ As described in Chapter 1, *Introduction*, Section 1.1, the full Draft EIR/EIS should be understood to include not only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.

Delta Meadows

According to the California Department of Parks and Recreation website at the time of this draft EIR/S, the Delta Meadows River Park is closed to the public and has no visitor services. It still serves as a preserve, and is a popular mooring site among boaters. This analysis describes the park as if it is accessible to recreationists. On-water access to the mooring site would not be affected. Permanent and temporary features of the proposed water conveyance facilities would cause ongoing noise and visual disturbances to visitors. Construction of a proposed temporary 230 kV transmission line that would run east of Delta Meadows could cause noise and visual disturbances for up to 3.5 years. The intermediate forebay and spillway are adjacent to the northern corner of Delta Meadows River Park, across Twin Cities Road. Construction primarily would take place Monday through Friday, for up to 24 hours per day. Construction noise, as well as operation and maintenance of the intermediate forebay and spillway, could adversely affect wildlife viewing and environmental education opportunities for potential visitors.

Bullfrog Landing Marina

Containing 43 berths, Bullfrog Landing Marina is on Middle River within the noise and visual disturbance impact area surrounding the tunnel/pipeline alignment across Bacon Island. The marina is immediately west of a safe haven work area used for tunnel construction. On-water access to the marina and use of the marina's boating facilities would not be affected by tunnel construction activities. Boating opportunities would still be feasible at the marina during construction of the tunnel and use of the safe haven work area. During construction it is possible that marina users would be disturbed by noise and visual disruptions related to the construction activities, which could last up to 8 years, resulting in a long-term adverse effect. Anglers on the river between the marina and the construction area would also experience noise and visual disturbances from construction.

Clifton Court Forebay

Clifton Court Forebay offers public fishing and hunting access from Lindeman Road on the south side of the forebay. There are no recreation facilities at the forebay; motorized boating, camping, and swimming are not allowed. Most fishing and hunting use at the forebay likely occurs along the west and south shores of the forebay, although some visitors walk or ride a bike around the forebay to reach other fishing and hunting locations. Visitors to these areas will experience a long term reduction of recreational opportunities and experiences as a result of the proposed water conveyance facilities.

Access to the forebay would be maintained using Clifton Court Road or a detour. Construction of the Clifton Court Forebay expansion, control structures, shafts, work areas, barge unloading facility, reusable tunnel material areas, forebay dredging area, and installation of transmission lines would take up to 7 years. Construction would primarily occur Monday through Friday for up to 24 hours per day. The opportunities for visitors who use the southern part of the forebay would be affected the most because of its proximity to the proposed construction areas. While the forebay is expanded and the new embankment is built, recreational visitors would lose access to the existing bank recreational activities. Construction would also cause noise and visual disturbances which would deter fish and wildlife and result in reduced opportunities for fishing or hunting, as well as adversely affect the ambient recreation setting and recreation experience. Construction during waterfowl hunting season would affect recreational hunting in the area to the degree that use is temporarily degraded. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9,

1 mitigation would be available to address the effect on nesting birds and waterfowl populations near
 2 construction areas. In addition, over the longer term of the action alternatives, implementation of
 3 CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
 4 wetlands (see BDCP⁵ Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
 5 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
 6 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
 7 benefit sandhill crane and other species. As described above in the Stone Lakes National Wildlife
 8 section, implementation of CM11 would provide beneficial effects on recreation opportunities by
 9 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system.
 10 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
 11 bicycling, equestrian use, hunting, fishing, and boating.

12 .Other Recreation Opportunities

13 *On-Water Recreation*

14 There are no recreation sites within the impact area for the operable barrier at the head of Old River
 15 and San Joaquin River. Although these facilities and other marinas or fishing sites fall outside of the
 16 construction impact area for noise, the overall recreation experience upstream or downstream of
 17 these sites may fall within the noise impact area and could experience diminished recreation
 18 opportunities because of the elevated noise levels as well as visual setting disruptions over the
 19 course of construction. Overall, construction activities associated with the proposed water
 20 conveyance facilities would range from 1 year to up to 8 years depending on the site. Work would
 21 occur Monday through Friday for up to 24 hours per day. In-river construction would be further
 22 limited primarily to June 1 through October 31 each year. Although dewatering would take place 7
 23 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction
 24 would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes,
 25 resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to
 26 experience a changed recreation setting.

27 *Campgrounds*

28 Nighttime construction activities would require the use of bright lights that would negatively affect
 29 nighttime views of and from the work area. This would affect any overnight camping at the
 30 recreation sites and areas discussed above, although day use areas that close at sunset would not be
 31 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
 32 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.9,
 33 another nighttime effect on recreation would be construction noise levels that could adversely affect
 34 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
 35 construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and NOI-1b
 36 would be available to address these effects.

37 **Summary**

38 Construction of Alternative 4 intakes and water conveyance facilities would result in disruption to
 39 recreational opportunities. Indirect effects on recreation experiences may occur as a result of
 40 impaired access, construction noise, or negative visual effects associated with construction. Overall,

⁵ As described in Chapter 1, *Introduction*, Section 1.1, the full Draft EIR/EIS should be understood to include not only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.

1 construction may occur year-round and last from 1 to 8 years at individual construction sites near
2 recreation sites or areas and in-river construction would be primarily limited to June 1 through
3 October 31 each year, which would result in a long-term reduction of recreational opportunities or
4 experiences.

5 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
6 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
7 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
8 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
9 measures, environmental commitments, and conservation measures would provide several benefits
10 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
11 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
12 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
13 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
14 degradation associated with accidental spills, runoff and sedimentation, and dust could have
15 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
16 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
17 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
18 crane, would be implemented by the BDCP proponents where determined necessary for all covered
19 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
20 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
21 *Commitments*, DWR would implement an environmental commitment that would dispose of and
22 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
23 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
24 of the action alternatives, implementation of CM3 and CM11 will result in protection and
25 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
26 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
27 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
28 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
29 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
30 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
31 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
32 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
33 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
34 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
35 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
36 bicycling, equestrian use, hunting, fishing, and boating.

37 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.9, identifies a number of mitigation
38 measures that would be available to address construction-related visual effects on sensitive
39 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
40 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
41 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
42 addition, the chapter identifies measures to address longer term visual effects associated with
43 changes to the landscape/visual setting from construction and the presence of new water
44 conveyance features. These include developing and implementing a spoil/borrow and RTM area
45 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
46 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),

1 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
2 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
3 would also make a commitment to enhance the visual character of the area by creating new wildlife
4 viewing sites and enhancing interest in the construction site by constructing viewing areas and
5 displaying information about the project, which may attract people who may use the recreation
6 facilities to the construction site as part of the visit.

7 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
8 proponents will work with the California Department of Parks and Recreation to help insure the
9 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
10 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
11 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
12 helping to fund or construct elements of the American Discovery Trail and the potential conversion
13 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
14 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
15 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
16 proposal. The BDCP project proponents will also work with DPR to determine if some of the
17 constructed elements of CM1 could incorporate elements of the DPR's proposal.

18 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
19 involve preparation of site-specific construction traffic management plans that would address
20 potential public access routes and provide construction information notification to local residents
21 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
22 of access to affected recreation areas as an environmental commitment. Where construction
23 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
24 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
25 construction sites. These would be designed to be safe, pleasant and would integrate with
26 opportunities to view the construction site as an additional area of interest. These physical facilities
27 would be combined with public information, including sidewalk wayfinding information that would
28 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
29 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
30 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
31 congested roadway segments, although this mitigation measure (TRANS-1c) would require
32 cooperation from the affected jurisdictions, and therefore there is no way to guarantee its
33 effectiveness.

34 Chapter 23, *Noise*, Section 23.4.3.9, discusses that construction noise effects could be addressed
35 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
36 implementation of a complaint/response tracking program (NOI-1b), and an environmental
37 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
38 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
39 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
40 viewing the aesthetic amenities of the area.

41 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
42 2 would ensure continued access to existing recreation experiences. The Delta offers many
43 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
44 all of which would continue to be available for recreationists. However, due to the length of time that
45 construction would occur and the dispersed effects across the Delta, the direct and indirect effects

1 related to temporary disruption of existing recreational activities at facilities within the impact area
2 would be adverse.

3 **CEQA Conclusion:** Construction of the Alternative 4 intakes and related water conveyance facilities
4 would result in permanent and long-term (i.e., lasting over 2 years) impacts on well-established
5 recreational opportunities and experiences in the study area because of access, noise, and visual
6 setting disruptions that could result in loss of public use. These impacts would occur year-round.
7 Mitigation measures, environmental commitments, and BDCP AMMs would reduce some
8 construction-related impacts by implementing measures to protect or compensate for effects on
9 wildlife habitat and species; minimize the extent of changes to the visual setting, including nighttime
10 light sources; manage construction-related traffic; and implement noise reduction and complaint
11 tracking measures. However, the level of impact would not be reduced to less than significant
12 because even though mitigation measures and environmental commitments would reduce the
13 impacts on wildlife, visual setting, transportation, and noise conditions that could detract from the
14 recreation experience, due to the dispersed effects on the recreation experience across the Delta, it
15 is not certain the mitigation would reduce the level of these impacts to less than significant in all
16 instances such that there would be no reduction of recreational opportunities or experiences over
17 the entire study area. Therefore, these impacts are considered significant and unavoidable.
18 However, the impacts related to construction of the intakes would be less than significant.

19 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

20 Construction-related impacts on informal fishing access sites near the proposed water
21 conveyance facilities, such as along the east bank of the Sacramento River, in the vicinity of the
22 proposed intakes, and in the vicinity of the expanded Clifton Court Forebay, would be
23 considered significant because construction would alter the river bank and/or restrict access,
24 making these sites unusable. To compensate for the loss of these informal sites during
25 construction, the BDCP proponents will enhance nearby formal fishing access sites, including
26 partnering with Yolo County to enhance the Clarksburg Fishing Access site on the west bank of
27 the Sacramento River, and with the Sacramento County Department of Regional Parks to
28 enhance the Cliffhouse Fishing Access site on the east bank of the Sacramento River and the
29 Georgiana Slough Fishing Access site east of the Sacramento River, and with Contra Costa
30 County to enhance fishing sites near Clifton Court Forebay, as well as other nearby sites. Prior to
31 construction of the proposed intakes, the BDCP proponents will ensure adequate signage will be
32 placed at the informal sites that would be directly affected by construction of the intakes,
33 directing anglers to the formal sites. Upgrading the existing fishing access sites will be
34 completed prior to beginning construction of the intakes.

35 As part of design of the intakes, the BDCP proponents will ensure that public access to the
36 Sacramento River, including fishing access, will be incorporated into the design of the intakes.
37 The access sites will be placed a reasonable distance from the intake to ensure the safety of
38 recreationists and to compensate for the loss that would occur as a result of constructing the
39 intakes.

40 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 41 **Disturbance of Nesting Birds**

42 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
43 Alternative 1A, Impact BIO-75.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
30 **Residents**

31 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 2 **Construction**

3 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 6 **to Prevent Light Spill from Truck Headlights toward Residences**

7 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 10 **Plan**

11 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 14 **Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 18 **Agreements to Enhance Capacity of Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 22 **Construction**

23 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

24 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 25 **Tracking Program**

26 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

27 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 28 **Result of Constructing the Proposed Water Conveyance Facilities**

29 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
 30 waterways in the study area, including direct effects on boat passage related to the creation of
 31 obstructions and associated boat traffic delays, would occur during construction of Alternative 4.
 32 Construction of the three intakes would involve installation of cofferdams in the waterways and the
 33 use of barges, barge-mounted cranes, or other large waterborne equipment. Construction of the
 34 temporary barge unloading facilities and siphons would also affect navigation for recreationists.
 35 Alternative 4 also would involve construction and operation of an operable barrier at the head of
 36 Old River (Mapbook Figure 15-4).

1 **Intakes**

2 To allow for construction of intakes, cofferdams would be constructed within the river channel. The
 3 cofferdams would vary in size according to intake location, but would range from 740 to 2,440 feet
 4 in length and would extend into the river channel up to 120 feet, depending on location. This would
 5 include a 25-foot buffer zone around each cofferdam. Although boats would be unable to use the
 6 portion of the waterway where construction was occurring, the river in the vicinity of the intake
 7 construction sites would remain open to boat passage at all times. The river is approximately 500–
 8 700 feet wide near the proposed intakes, which would leave most of the channel width
 9 (approximately 380–580 feet) open to boat passage, providing ample room for the boat traffic
 10 observed to occur in the area to pass without difficulty and minimizing possible traffic congestion.

11 Temporary in-water construction zone restrictions would be in place. These measures would
 12 include a speed-restricted zone extending upstream and downstream of river construction areas to
 13 reduce wake and maintain a safe work area in the vicinity of the construction activities. Site-specific
 14 safety features, including determination of the speed-restriction zone would be developed under the
 15 Mitigation Measure TRANS-1a that involves the BDCP proponents developing and implementing
 16 site-specific construction traffic management plans, including waterway navigation elements and
 17 providing notification of construction activities in waterways. Within the speed-restricted zones
 18 around the intake areas, high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would
 19 effectively be eliminated. Mitigation Measure TRANS-1a also involves providing notification of
 20 construction activities in waterways to ensure information about construction site location(s),
 21 construction schedules, and identification of no-wake zone and/or detours is posted at Delta
 22 marinas and public launch ramps.

23 Direct effects on boat passage and navigation on the Sacramento River would result from
 24 construction of the intakes. Effects could include reduced access and delays to boat passage and
 25 navigation related to the narrower available river width and temporary reduced-speed zones.
 26 However, boat passage volume along the corridor of the Sacramento River where intakes are
 27 proposed is low. Water-based recreational activities such as waterskiing, wakeboarding, tubing, or
 28 fishing are also low, but effectively would be eliminated in the vicinity of the intakes for the duration
 29 of construction (up to 4 years at each intake location). However, implementation of separate, non-
 30 environmental commitments as set forth in Appendix 3B, *Environmental Commitments*, relating to
 31 the enhancement of recreational access and control of aquatic weeds in the Delta would reduce
 32 these effects. Although there is sufficient width in the channel to allow boat passage, boaters could
 33 experience minor delays related to construction speed zones. However, this could still result in a
 34 reduction of recreational navigation opportunities would be considered adverse because, although
 35 temporary, the effects would be long-term, lasting more than 2 years.

36 **Siphons**

37 Construction of two of the three siphons associated with Alternative 4 would result in temporary
 38 obstruction of boat passage and may also cause boat traffic delays or navigation hazards to boaters.
 39 The siphons would cross one watercourse, one existing water facility, and one highway and rail line:

- 40 ● Italian Slough
- 41 ● South Clifton Court Forebay Outlet
- 42 ● Byron Highway/Southern Pacific Railroad (SPRR)

1 Culvert siphons would be constructed using cofferdams and open cut-and-cover construction
2 methods with conventional cast-in-place concrete structures. In each phase, a temporary cofferdam
3 surrounding the work area would be installed that would occupy as much as one-half the width of
4 the waterway.

5 The Byron Highway/SPRR siphon would not be built in an area where recreation occurs, so it would
6 not cause a long-term reduction in recreational navigation opportunities.

7 Culvert siphons at Italian Slough and the South Clifton Court Forebay Outlet would be constructed in
8 two phases, each phase lasting approximately one year. The first phase would entail the installation
9 of a temporary cofferdam for half of the total length of the culvert siphon to be constructed inside
10 the cofferdam. During the second phase, the cofferdam would be reinstalled across the other half of
11 the siphon, and the remainder of the structure would be constructed and backfilled. Construction of
12 the cofferdams would occur from August to November.

13 The South Clifton Court Forebay Outlet siphon would lie underneath the existing Clifton Court
14 Forebay outlet. This crossing is a constructed waterway that connects the existing Clifton Court
15 Forebay to the Approach Canal to Banks Pumping Plant. It would not cause a long-term reduction in
16 recreational navigation opportunities.

17 Use of the waterway at Italian Slough would be allowed to continue during construction, albeit with
18 appropriate temporary construction zone restrictions in place for marine safety. The proposed
19 Italian Slough siphon would lie within the Byron Tract approximately 3 miles east of Byron and less
20 than 2.5 miles south of Discovery Bay. Lazy M Marina is approximately 1.75 miles from the siphon
21 site. The marina provides about 35 berths, substantial dry storage, and a boat ramp and is likely the
22 source of most boat traffic on Italian Slough.

23 Boat traffic volume in the vicinity of the siphon on Italian Slough may be high at times because of the
24 proximity of this marina. Because boat traffic would be confined to a limited portion of the channel
25 by the cofferdams, increased boat traffic congestion is likely to occur during peak use times
26 (primarily summer weekends). Although boats would not be able to use the portion of the waterway
27 where construction was occurring, the use of each of these waterways for recreational navigation
28 would be allowed to continue during construction. This would not result in a long-term reduction in
29 recreational navigation opportunities.

30 ***Temporary Barge Unloading Facilities***

31 Alternative 4 includes five barge unloading facilities to be built on or near the tunnel alignment at
32 riverbank locations about 4-9 miles apart (Mapbook Figure 15-4). The facilities would be built on
33 the following waterways: South Mokelumne River, San Joaquin River, Middle River, Old River, and
34 Italian Slough. The facilities would be used to transfer pipeline construction equipment and
35 materials to and from construction sites and would be removed after construction was completed.
36 Construction of the facilities may require partial channel closures and use of equipment within the
37 waterways. All barge facilities would have temporary in-water construction zone restrictions
38 including a speed-restricted zone extending upstream and downstream of construction within the
39 waterway to reduce wake and maintain a safe work area in the vicinity of the construction activities.
40 Site-specific safety features, including determination of the speed-restriction zone, and notification
41 procedures would be developed under the Mitigation Measure TRANS-1a that involves the BDCP
42 proponents developing and implementing site-specific construction traffic management plans,
43 including waterway navigation elements. Within the speed-restricted zones high-speed recreation

1 (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated. Specific effects that
2 could occur at each barge unloading facility site are discussed below. Effects on recreation in the
3 vicinity of these sites would last approximately 5 years and would be considered a long-term effect.
4 Construction would primarily occur Monday through Friday and last for up to 24 hours per day. In-
5 river construction primarily would be limited to June 1 through October 31 each year. However, the
6 barges would remain in place for the duration of the construction period and still present a
7 temporary barrier to boats and related recreation. Post-construction, temporary barges would be
8 removed and the ability to navigate rivers and channels would return to previous conditions.

9 *South Mokelumne River*

10 The South Mokelumne River barge unloading facility would be on the southern end of Staten Island
11 and would occupy about 1,000 feet of the east riverbank. The river channel is relatively narrow at
12 this location (about 400 feet wide, as compared to 500–700 feet wide at the intake locations).
13 Therefore, the barge facility and barge operations at this location could occupy a substantial portion
14 of the river, constricting boat passage. The nearest boating facilities are approximately 1 mile away.
15 Because boat traffic would be confined to a limited portion of the channel, increased boat traffic
16 congestion is likely to occur during peak use (primarily summer weekends).

17 *San Joaquin River*

18 The San Joaquin River barge unloading facility would be on the west side of Bouldin Island, on a
19 wide bend in the river, and would occupy about 1,000 feet of the riverbank. The river channel is
20 more than 2,000 feet wide at this location. Therefore, even if the barge facility and barge operations
21 at this location occupied a substantial portion of the river, several hundred feet of unimpeded
22 channel width would remain, and there would be little effect on boat passage.

23 *Middle River*

24 The Middle River barge unloading facility would be on the north side of Bacon Island and would
25 occupy more than 1,000 feet of the riverbank, about 500 feet west of Connection Slough. The river
26 channel is about 400 feet to an island in the middle of the river. Therefore, boats could bypass the
27 barge facility and barge operations at this location by navigating around the other side of the island.
28 This could constrict boat passage on the northern side of the river. Peak boat traffic volume may be
29 high at this location. Because boat traffic would be confined to a limited portion of the channel,
30 increased boat traffic congestion could occur during peak use times (primarily summer weekends).
31 Bypassing the barge unloading facility, coupled with signage and information outreach to be
32 implemented as part of the Mitigation Measure TRANS-1a traffic management plans would be
33 available to minimize congestion and delay at this barge facility site.

34 *Old River*

35 One barge unloading facility would be on the northwest side of Victoria Island along the Old River,
36 less than two miles from Discovery Bay. It would occupy more than 1,000 feet of the river banks
37 near the junction of Woodward Canal. The river is about 400 feet wide at this location. The barge
38 facility and barge operations at this location would leave more than 200 feet of passageway around
39 the unloading facility. Peak boat traffic volume is likely high at this location; therefore, if boat
40 passage continued, increased boat traffic congestion could occur during peak use (primarily summer
41 weekends) because boat traffic would be confined to a limited portion of the channel. The

1 Woodward Canal in the vicinity of the barge unloading facilities is a known location for waterskiing
2 and wakeboarding.

3 *Italian Slough*

4 The Italian Slough barge unloading facility would be on the west side of Byron Island to the
5 northwest of Clifton Court Forebay, and would occupy more than 400 feet of the riverbank. The
6 river channel is less than 300 feet at this location. Therefore, the barge facility and barge operations
7 at this location could constrict boat passage. Peak boat traffic volume may be high at this location.
8 Because boat traffic would be confined to a limited portion of the channel, increased boat traffic
9 congestion could occur during peak use times (primarily summer weekends). Signage and
10 information outreach would be implemented as part of the Mitigation Measure TRANS-1a traffic
11 management plans that would be available to minimize congestion and delay at this barge facility
12 site.

13 Construction of the temporary barge unloading facilities would result in adverse effects to boat
14 passage and navigation on waterways in the study area, including the creation of obstructions to
15 boat passage and associated boat traffic delays and temporary partial channel closures that could
16 impede boat movement and eliminate recreational opportunities. In waterways where waterskiing,
17 wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading
18 facilities would be eliminated during construction. Construction of the operable barrier at the head
19 of Old River would have only short-term effects on recreational opportunities on Old River. The
20 barrier would have a boat lock that would restore boating access once construction is complete.

21 Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by
22 development and implementation of site-specific construction traffic management plans, including
23 waterway navigation elements. The following environmental commitments would also reduce
24 effects on water-based recreation (water-skiing, wakeboarding, tubing).

25 Currently, invasive aquatic vegetation can limit access to boats and reduce swimming areas.
26 Enhanced ability to control these invasive vegetation would lead to increased recreation
27 opportunities which would compensate for the loss of recreational opportunities within the project
28 area by providing a recreational opportunity downstream/upstream in the same area for the same
29 regional recreational users. CM13 (*Invasive Aquatic Vegetation Control*) provides for the control of
30 egeria, water hyacinth, and other IAV throughout the Plan Area. However, the BDCP proponents
31 would also commit to partner with existing programs operating in the Delta (including DBW, U.S.
32 Department of Agriculture-Agriculture Research Service, University of California Cooperative
33 Extension Weed Research and Information Center, California Department of Food and Agriculture,
34 local Weed Management Areas, Resource Conservation Districts, and the California Invasive Plant
35 Council) to perform risk assessment and subsequent prioritization of treatment areas to
36 strategically and effectively reduce expansion of the multiple species of IAV in the Delta. This risk
37 assessment would dictate where initial control efforts would occur to maximize the effectiveness of
38 the conservation measure. BDCP would contribute funds to further the DBW's aquatic weed control
39 programs in the Delta. The funds will be transferred prior to, or concurrent with, commencement of
40 construction of the BDCP, as described in Appendix 3B, *Environmental Commitments*.
41 Implementation of CM13 (*Invasive Aquatic Vegetation Control*) and the BDCP proponents'
42 environmental commitment to fund programs for aquatic weed control would create and
43 rehabilitate alternative recreation opportunities for those eliminated during construction.

1 BDCP proponents would ensure through various outreach methods that recreationists were aware
2 of nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or
3 Bishop Cut). Additionally, BDCP proponents would commit to contributing funds for the
4 construction of new recreation opportunities as well as for the protection of existing recreation
5 opportunities as outlined in Delta Plan R11. BDCP proponents would also assist in funding the
6 expansion of state recreation areas in the Delta as described in Delta Plan R13. The funds will be
7 transferred prior to, or concurrent with, commencement of construction of the BDCP. This
8 commitment serves to compensate for the loss of recreational opportunities within the project area
9 by providing a recreational opportunity downstream/upstream in the same area for the same
10 regional recreational users. Potential areas for use of funds include, but are not limited to: the
11 reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding
12 House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-
13 Elmwood Tract, and south Delta.

14 Nonetheless, since these effects would be long-term, lasting approximately 5 years, they would be
15 considered adverse because of the reduced recreation opportunity and experiences expected to
16 exist near construction activity.

17 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
18 construction of the intakes, temporary barge unloading facilities, siphons, and the operable barrier
19 at the head of Old River. Impacts from intake and barge unloading facilities would last
20 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
21 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
22 closures could impede boat movement and eliminate recreational opportunities. In waterways
23 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
24 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
25 development and implementation of site-specific construction traffic management plans, including
26 specific measures related to management of barges and stipulations to notify the commercial and
27 leisure boating communities of proposed construction and barge operations in the waterways.
28 While the environmental commitments would reduce impacts on water-based recreation (water-
29 skiing, wakeboarding, tubing) in these areas by creating alternative recreation opportunities for
30 those eliminated during construction, impacts from the intakes and barge unloading facilities would
31 be long-term, and therefore considered significant and unavoidable. Construction of the operable
32 barrier and the siphons would last for 2 years (short-term) and would not result in long-term
33 reduction of recreation opportunities. These components would cause less-than-significant impacts
34 on recreational navigation on Old River and Italian Slough.

35 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
36 **Plan**

37 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
38 Impact TRANS-1.

39 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
40 **Result of Constructing the Proposed Water Conveyance Facilities**

41 **NEPA Effects:** Sport fishing in the study area is a year-round activity, and includes bank fishing and
42 boat fishing for a number of fish including striped bass, largemouth bass; green and white sturgeon;
43 Chinook salmon, and American shad. Striped bass, American shad, and largemouth bass are all sport

1 fish species that were introduced into rivers for that purpose. Striped bass and largemouth bass are
2 regulated by CDFW for recreational fishing. Fishing likely occurs in all of the waterways where
3 water intake and barge unloading facilities would be located.

4 Under Alternative 4, construction of the water intakes, siphons, and operable barrier and placement
5 and use of barge unloading facilities during tunnel/pipeline construction would result in temporary
6 water quality effects (e.g., turbidity, accidental spills, disturbance of contaminated sediments);
7 elevated underwater noise conditions (associated with pile driving and other construction
8 activities); fish exposure to stranding and direct physical injury; and temporary exclusion or
9 degradation of spawning and rearing habitats. These temporary construction-related effects would
10 last for up to 5 years in the vicinity of intake and barge unloading facilities and could alter fish
11 populations such that recreational fishing opportunities in the study area would be affected.
12 Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the
13 vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish,
14 causing recreationists to experience a changed recreation setting.

15 Construction of the expanded Clifton Court Forebay would not affect fish-accessible waterways and
16 therefore would not affect sport fish. Construction would cause a long-term reduction of up to 7
17 years for bank fishing that occurs on the embankment on the southern end of Clifton Court Forebay
18 while the forebay is expanded and a new embankment is constructed. Fishing would be permitted
19 again once construction is completed. However, this would result in a long-term reduction of fishing
20 opportunities. Mitigation Measure REC-2 would address these effects by ensuring access to nearby
21 fishing by enhancing formal fishing sites near the proposed water conveyance facilities, including
22 near Clifton Court Forebay, and providing adequate signage directing anglers to the formal sites.

23 Although fish populations likely would not be affected to the degree that fishing opportunities would
24 be substantially reduced, construction conditions would introduce noise and visual disturbances
25 that would affect the recreation experience for anglers. Although construction noise would be
26 temporary, and primarily be limited to Monday through Friday, it would be ongoing for up to 24
27 hours per day and for up to 5 years near individual work sites. Visual setting disruptions could
28 distract from the recreation experience including on weekends. However, Mitigation Measures
29 AQUA-1a and AQUA-1b would avoid and minimize adverse effects on sport fish populations from
30 impact pile driving, Mitigation Measures NOI-1a and NOI-1b would address construction noise
31 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
32 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
33 measures would also be available to address construction-related visual effects on sensitive
34 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
35 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
36 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
37 addition, the chapter identifies measures to address longer term visual effects associated with
38 changes to the landscape/visual setting from construction and the presence of new water
39 conveyance features. These include developing and implementing a spoil/borrow and RTM area
40 management plan (AES-1c) (as discussed in Appendix 3C *Construction Assumptions*), restoring barge
41 loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments
42 to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations
43 upon removal of facilities (AES-1f), and implementing best management practices to implement a
44 project landscaping plan (AES-1g). As described in Appendix 3B, *Environmental Commitments*, RTM
45 would be removed from RTM storage areas (which represent a substantial portion of the permanent
46 impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material

1 for habitat restoration projects, or other beneficial means of reuse identified for the material.
 2 Anglers could move to other locations along the Sacramento River and throughout the Delta region.
 3 Although construction would occur for more than 2 years and cause a long-term reduction in fishing
 4 opportunities at one recreational site, construction of the proposed water conveyance facilities
 5 would not disperse fishing opportunities throughout the Delta. Additionally, mitigation measures
 6 are available to ensure access to and enhance nearby fishing sites, and to address noise and visual
 7 disturbances. The effect would not be adverse.

8 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 9 construction activities would be considered less than significant because the BDCP would include
 10 environmental commitments to prevent water quality effects include environmental training;
 11 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 12 hazardous materials management plans, and spill prevention, containment, and countermeasure
 13 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 14 *Environmental Commitments*). Mitigation Measures AQUA-1a and AQUA-1b would avoid and
 15 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 16 REC-2 would ensure continued access for bank fishing at established locations; enhance fishing sites
 17 near the proposed water conveyance facilities, including near Clifton Court Forebay; and provide
 18 adequate signage directing anglers to the formal sites. As described in Appendix 3B, *Environmental*
 19 *Commitments*, RTM would be removed from RTM storage areas (which represent a substantial
 20 portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee
 21 maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse
 22 identified for the material. This impact would be less than significant.

23 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

24 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

25 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 26 **of Pile Driving and Other Construction-Related Underwater Noise**

27 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 28 Alternative 1A, Impact AQUA-1.

29 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 30 **and Other Construction-Related Underwater Noise**

31 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 32 Alternative 1A, Impact AQUA-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

36 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response** 37 **Tracking Program**

38 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 30 **Result of the Operation of the Proposed Water Conveyance Facilities**

31 **NEPA Effects:** Operation of Alternative 4 may result in changes in entrainment, spawning, rearing
 32 and migration. However, in general, effects on (non-covered) fish species that are popular for
 33 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 34 recreational fishing. While there are some significant impacts to specific non-covered species, as
 35 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.9, they are typically limited to

1 specific rivers and not the population of that species as a whole. The effect is not adverse because it
2 would not result in a substantial long-term reduction in recreational fishing opportunities.

3 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
4 operation of Alternative 4 would be considered less than significant because any impacts to fish and,
5 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
6 not impact the species population of any popular sportfishing species overall.

7 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
8 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
9 **of-Delta Reservoirs**

10 **NEPA Effects:** Generally, the peak recreation season at the reservoirs falls between May to
11 September. Reservoirs are usually at maximum storage volume and surface water elevation in May
12 and decline over the course of the summer through September. This analysis compares the results of
13 the CALSIM II end-of-September reservoir water surface elevations because typically this month has
14 the most instances when reservoir elevations fall below key recreation thresholds (i.e., number of
15 years out of the 82 simulated when the September end-of-month storage is less than the recreation
16 elevation threshold). Under these low surface water elevations, the overall usable reservoir area is
17 reduced and previously submerged islands or shoals may become exposed and affect boating safety.
18 In addition, shoreline recreation becomes degraded.

19 For each reservoir, a specific water surface level elevation was selected as the “recreation
20 threshold,” an initial indicator to represent constrained boating conditions for the comparison of the
21 BDCP action alternative conditions to Existing Conditions (CEQA baseline) and the No Action
22 Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a and
23 Table 15-12b). Additional consideration of other factors is discussed, for instance where the
24 modeling results show substantial changes to reservoir levels that may affect recreation at a
25 particular location (generally, this occurs for San Luis Reservoir). Also see Chapter 3, *Description of*
26 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
27 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

28 **Existing Conditions (CEQA Baseline) Compared to Alternative 4 (2060)**

29 As shown in Table 15-12a and Table 15-12b, under Alternative 4 Operational Scenarios H1, H2, H3,
30 and H4 recreation thresholds would be exceeded more frequently at Trinity, Shasta, Oroville,
31 Folsom, and San Luis Reservoirs relative to Existing Conditions. These changes represent a greater
32 than 10% increase in the frequency the recreation thresholds are exceeded. However, as discussed
33 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
34 primarily attributable to sea level rise and climate change. It is not possible to specifically define the
35 exact extent of the changes due to implementation of the action alternative using these model
36 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
37 differences between Existing Conditions and Alternative 4 cannot be isolated in this comparison.
38 Please refer to the comparison of the No Action Alternative (2060) to Alternative 4 (2060) for a
39 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
40 operation of Alternative 4.

1 **No Action Alternative (2060) Compared to Alternative 4 (2060)**

2 The comparison of Alternative 4 (2060) to the No Action Alternative (2060) condition most closely
3 represents changes in reservoir elevations that may occur as a result of operation of the alternative
4 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
5 *Methodology*). As shown in Table 15-12a and Table 15-12b, Alternative 4 Operational Scenarios H1,
6 H2, H3, and H4 would result in changes in the frequency with which the end-of-September reservoir
7 levels at Trinity Shasta, Oroville, Folsom New Melones and San Luis Reservoirs would fall below
8 levels identified as important water-dependent recreation thresholds. With the exception of San
9 Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels under Alternative 4
10 operations would either not change or would fall below the individual reservoir recreation
11 thresholds less frequently than under No Action Alternative (2060) conditions. Operation of
12 Alternative 4 would not adversely affect water-dependent or water-enhanced recreation at these
13 reservoirs. Overall, these conditions represent improved recreation conditions under operation of
14 Alternative 4 because there would be fewer years in which end-of-September reservoir levels would
15 fall below the recreation thresholds thus indicating better boating opportunities, when compared to
16 No Action Alternative (2060) conditions.

17 The modeling results for San Luis Reservoir indicates there could be up to 11, 38, 28, and 46
18 additional years under Alternative 4 Scenario H1, H2, H3, and H4, respectively during which the
19 reservoir level would fall below the reservoir boating threshold at the end of September for the
20 Dinosaur Point boat launch. In addition, at the Basalt boat launch, which is accessible to elevation
21 340 feet, operations under Alternative 4 Scenarios H2 and H4 would result in 15 and 29 additional
22 years during which reservoir elevations would fall below the recreation threshold relative to the No
23 Action Alternative (2060) condition. This is a greater than 10% change and would be considered a
24 substantial reduction in recreational boating opportunities at San Luis Reservoir. Shoreline fishing
25 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
26 and fishing—would be available. The reduction in surface elevations at San Luis Reservoir under
27 Scenarios H1 and H2 and H4 would result in an adverse impact on recreation occurring at the
28 reservoir by restricting access by boaters. Mitigation Measure REC-6 would be available to address
29 this effect.

30 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
31 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
32 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
33 Alternative 1A (2060) operations would either not change (New Melones Reservoir) or would fall
34 below the individual reservoir thresholds less frequently than under No Action Alternative (2060).
35 These changes in reservoir and lake elevations would result in a less-than-significant impact on
36 recreation opportunities and experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake,
37 and New Melones Lake. At Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake, because there
38 would be fewer years in which the reservoir or lake levels fall below the recreation threshold
39 relative to No Action Alternative (2060) conditions, these effects would be considered beneficial
40 effects on recreation opportunities and experiences. Operation of Alternative 4 would not
41 substantially affect water-dependent or water-enhanced recreation at these reservoirs. At San Luis
42 Reservoir, although boating opportunities would be reduced more frequently for the Dinosaur Point
43 boat launch and the Basalt boat launch would not substantially change. The reduction in reservoir
44 access by boaters under Scenarios H2 and H4 would be significant because it is a greater than 10%
45 change (8 additional years or more). Operations as modeled under Alternative 4 Scenarios H2 and

1 H4 could substantially affect recreational boating at San Luis Reservoir and could result in a
2 significant impact. Mitigation Measure REC-6 would reduce this impact to less than significant.

3 **Mitigation Measure REC-6: Provide a Temporary Alternative Boat Launch to Ensure**
4 **Access to San Luis Reservoir**

5 Consistent with applicable recreation management plans, DWR and Reclamation will work with
6 DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative
7 boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes
8 unavailable.

9 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
10 **Result of Maintenance of the Proposed Water Conveyance Facilities**

11 **NEPA Effects:** Intake maintenance, such as painting, cleaning, making repairs, conducting biofouling
12 prevention, conducting corrosion prevention, and maintaining equipment could have a minor effect
13 on boat passage and navigation in the Sacramento River. Repair efforts requiring barges and divers,
14 as well as activities to remove debris and sediment, could cause a temporary impediment to boat
15 movement and result in slowing of Sacramento River boat traffic in the immediate vicinity of the
16 affected intake structure and reduce opportunities for waterskiing, wakeboarding, or tubing in the
17 immediate vicinity of the intake structures. However, boat passage and navigation on the river
18 would still be possible around any barges or other maintenance equipment and these effects would
19 be expected to be short-term (2 years or less). In addition, the areas around the proposed intake
20 locations are not usually used for waterskiing, wakeboarding, or tubing, and many miles of the
21 Sacramento River would still be usable for these activities during periodic maintenance events.

22 Maintenance of intake facilities would result in periodic temporary but not substantial adverse
23 effects on boat passage and water-based recreational activities. Any effects would be short-term and
24 intermittent. Other facility maintenance activities would occur on land and would not affect boat
25 passage and navigation. Implementation of the environmental commitment to provide notification
26 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
27 *Commitments*) would reduce these effects. These effects are not considered adverse.

28 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
29 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
30 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
31 environmental commitment to provide notification of construction and maintenance activities in
32 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
33 Intake maintenance impacts on recreation would be considered less than significant because
34 impacts, if any, on public access or public use of established recreation facilities would last for 2
35 years or less. Mitigation is not required.

36 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
37 **Result of Maintenance of the Proposed Water Conveyance Facilities**

38 **NEPA Effects:** Conveyance facility maintenance may include painting, landscaping, equipment
39 replacement, and mechanical repairs that would be short-term and intermittent and would not
40 affect recreation opportunities. Maintenance activities for these facilities would be conducted within
41 the individual facility right-of-way, which does not include any recreation facilities or recreation use
42 areas. In addition, there would be no public recreation use of the new facilities. Maintenance would

1 not result in any significant noise that would affect nearby recreational opportunities. Therefore,
 2 there would be no effects on recreation opportunities as a result of maintenance of the proposed
 3 water conveyance facilities.

4 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 5 would not result in any changes to land-based recreational opportunities. Therefore, there would be
 6 no impact. Mitigation is not required.

7 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 8 **Implementing Conservation Measures 2-21**

9 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
 10 components as part of Alternative 4 could have effects related to recreational fishing that are similar
 11 in nature to those discussed above for construction, and operation and maintenance of proposed
 12 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
 13 likely be substantially lower because the nature of the activities associated with implementing the
 14 conservation components would be different—less heavy construction equipment would be
 15 required and the restoration actions would be implemented over a longer time frame than CM1.
 16 Potential effects from implementation of the conservation components would be dispersed over a
 17 larger area and would generally involve substantially fewer construction and operation effects
 18 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
 19 components would be expected to result in long-term benefits to aquatic species. Additional
 20 discussion related to the individual conservation measures is provided below.

21 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
 22 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
 23 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
 24 improvements and flow management facilities, would be implemented in four phases starting with
 25 plan implementation and continuing to approximately 2063. CM2 would reduce migratory delays
 26 and loss of adult salmon, steelhead, and sturgeon at Fremont Weir and other structures; enhance
 27 rearing habitat for Sacramento River Basin salmonids; enhance spawning and rearing habitat for
 28 Sacramento splittail; and improve food sources for delta smelt downstream of the bypass. To
 29 achieve this, CM2 includes modifications to the Yolo Bypass that, in balance with existing uses,
 30 would benefit covered fish by increasing the frequency, duration, and magnitude of floodplain
 31 inundation and improving fish passage.

32 Yolo Bypass fishery enhancement would be achieved with site-specific projects to construct fish
 33 passage improvements and facilities to introduce and manage additional flows for seasonal
 34 floodplain habitat. Prior to construction for each project, the preparatory actions would include
 35 interagency coordination, feasibility evaluations, site or easement acquisition, modifications to
 36 agricultural practices, development of site-specific plans, and environmental compliance.

37 The YBFEP would propose a balance between important uses of the Yolo Bypass such as flood
 38 protection, agriculture, endangered terrestrial species habitat, fisheries habitat, the Yolo Natural
 39 Heritage Program, and managed wetlands habitat as described in existing state and federal land
 40 management plans associated with the Yolo Bypass Wildlife Area and existing conservation
 41 easements on private land.

42 Noise and the physical footprint associated with these physical modifications would temporarily
 43 affect the quality and access of fishing opportunities in the affected areas. The maximum extent of

1 inundation in the Yolo Bypass would not increase from current conditions, but the frequency and
2 duration of inundation events would increase. This modification in operations would affect onshore
3 fishing opportunities. Shore fishing would be temporarily affected by reduced access to the popular
4 deeper channels due to an increased floodplain footprint in the Yolo Bypass Wildlife Area. This
5 conservation measure was designed, in part, to improve habitat for covered fish species, including
6 Chinook salmon, green and white sturgeon, and steelhead. These habitat improvement elements
7 would lead to increased populations of targeted fish species, which over time, could benefit
8 recreational fishing opportunities. Thus, to the extent that access is available to anglers, the fishing
9 experience for native sport species benefiting from this measure would improve based on
10 hypothetical higher catch rates. Environmental commitments would be available to reduce the
11 effects of inundation on fishing opportunities.

12 CM4 would provide for the restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
13 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
14 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. The
15 extent of restored tidal habitat includes a contiguous habitat gradient encompassing restored
16 shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal marsh plain habitat, and
17 adjoining transitional upland habitat. Areas to be restored would be modified by breaching and
18 lowering levees, constructing new or modified levees to protect adjacent areas from flooding,
19 connecting remnant sloughs or channels to improve circulation, and modifying ground elevations to
20 reduce effects of subsidence. Tidal habitat restoration activities would lead to temporary decreases
21 in boat and onshore fishing opportunities and quality due to the physical footprint, noise, odors, and
22 other conditions created by site preparation and earthwork activities, including channel and bank
23 modification in restoration areas. Tidal habitat restoration could permanently disrupt existing
24 points of fishing access, eliminating recreational opportunities. Depending on the extent of
25 recreational access granted to the public in new tidal habitat areas, however, this measure could
26 also support expanded opportunity for shore-based and boat fishing. This conservation measure
27 was designed, in part, to improve habitat for covered fish species, including Chinook salmon, green
28 and white sturgeon, river and Pacific lamprey, and steelhead. CM4 would improve fish habitat which
29 would be expected to lead to increased populations of targeted fish species, which over time, would
30 benefit fishing experience associated with these and other target species that benefit from restored
31 tidal habitat.

32 Another guiding principle in the design of CM4 is the limitation of environmental conditions that
33 favor nonnative predator fish species, including striped bass. Predator removal measures would be
34 highly localized and would not appreciably decrease Delta-wide abundance of predatory game fish
35 (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.9). The recreational experience
36 associated with fishing for these species would not be expected to be substantially reduced. On
37 balance, it is anticipated that CM4 would have a minor positive effect on the fishing experience in the
38 Delta region.

39 CM5 provides for the restoration of 1,000 acres of seasonally inundated floodplain habitat within
40 the Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
41 floodplain restoration could occur along channels in many locations in the north, east, and/or south
42 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
43 most promising opportunities for large-scale restoration are in the south Delta along the San
44 Joaquin, Old, and Middle Rivers channels. While temporary earthwork and site preparation
45 measures could temporarily limit recreational access and interfere with the quality of fishing in
46 restoration areas, this measure would result in an increase in boat fishing opportunities as a result

1 of improvements in riparian habitat for a number of fish species and increased areas for boat
2 navigation. Similar improvements may also exist for onshore fishing, though current points of access
3 may be eliminated following implementation of restoration activities.

4 Within the first 40 years of Plan implementation, a total of 10,000 acres of seasonally inundated
5 floodplain would be restored under Alternative 4. Seasonally inundated floodplain restoration could
6 occur along channels in many locations in the north, east, and/or south Delta. These restoration
7 measures would result in a further increase in onshore and boat fishing opportunities due to
8 improvements in riparian habitat for fish; however, existing points of access may be modified or
9 disrupted.

10 CM6 would create benches on the outboard side of levees or create setback levees. Site preparation
11 and earthwork associated with the construction of these areas and potential access restrictions
12 would lead to temporary or permanent decreases in boat and onshore fishing quality and
13 opportunities. However, CM6 was designed, in part, to improve habitat for covered fish species,
14 including Chinook salmon, sturgeon, and steelhead. CM6 would improve the fishing experience
15 associated with these and other target species that benefit from enhanced channel margin habitat.
16 Another guiding principle in the design of this measure is the limitation of environmental conditions
17 that favor nonnative predator fish species, including striped bass. The recreational experience
18 associated with fishing for these species would be reduced by this measure. After 20 years of
19 implementation, the BDCP would cumulatively enhance 10 miles of channel margin habitat. After 30
20 years, this measure would cumulatively enhance 20 miles of channel margin. This measure would
21 modify channel geometry and restore riparian, marsh, and mudflat habitats along existing levees. On
22 balance, it is anticipated that because of these habitat improvements and expected increase in
23 targeted fish populations, this measure would make a minor improvement to the fishing experience
24 in the Delta region.

25 CM7 would restore 1,100 acres of riparian habitat in the first 15 years and up to 5,000 acres in the
26 late long-term. Areas chosen for implementation of this measure would be associated with
27 restoration and enhancement activities associated with CM4, CM5, and CM6. Restoration of riparian
28 habitat would support fish habitat by increasing the input of organic material and by increasing the
29 extent of shaded riverine aquatic (SRA) cover. By year 40 of implementation, the BDCP would
30 cumulatively restore 5,000 acres of riparian habitat. While construction activities associated with
31 this component may temporarily or permanently restrict some access for anglers and create
32 temporary conditions less favorable for fishing activities, this measure would improve fish habitat,
33 which would be expected to result in higher populations of targeted species and lead to an enhanced
34 fishing experience.

35 Under CM11 management plans for natural communities may be prepared for specific reserves or
36 for multiple reserves within a specified geographic area. Management and enhancement actions
37 would be implemented for the following natural communities: tidal aquatic and wetland, nontidal
38 aquatic and wetland, riparian, grasslands and associated seasonal wetland, inland dune scrub, and
39 agricultural lands and managed wetlands. Depending on the level of recreational access granted by
40 management plans, this measure could increase or decrease opportunities for anglers within the
41 Delta region.

42 CM12 would minimize adverse effects of methylmercury on covered fish species, including white
43 sturgeon and North American green sturgeon, and Sacramento splittail. This measure, if successful

1 in reducing predation caused as a byproduct of methylmercury and improving fish health, would
2 support an enhanced fishing experience for onshore and boat-based anglers.

3 CM13 would control nonnative aquatic vegetation including Brazilian waterweed, water hyacinth,
4 and other nonnative submerged and floating aquatic vegetation in BDCP tidal habitat restoration
5 areas. Site-specific conditions and the intended goal would dictate the specific method of removal.
6 This measure is hypothesized to reduce predation mortality on covered species (juvenile salmon,
7 steelhead, and splittail) by reducing habitat for nonnative predatory fish and by increasing turbidity
8 levels. Increased turbidity could also support delta and longfin smelt foraging. Control of nonnative
9 aquatic vegetation could also support access to additional rearing habitat for covered species, as
10 well as increased food availability stemming from greater light levels for phytoplankton growth.
11 Operations associated with vegetation control, particularly mechanical removal, would
12 intermittently and temporarily affect the quality of fishing. However, this measure would increase
13 opportunities for onshore and boat fishing for species that are hampered by the presence of
14 excessive nonnative vegetation. While these activities would reduce the fishing experience related to
15 nonnative predatory fish, overall these efforts would not appreciably reduce Delta-wide abundances
16 of predatory game fish (i.e., largemouth bass, striped bass) and populations would not be
17 diminished to the extent that fishing opportunities would be adversely affected (refer to Chapter 11,
18 *Fish and Aquatic Resources*, Section 11.3.4.9).

19 CM14 would maintain dissolved oxygen (DO) levels above levels that impair covered fish species in
20 the Stockton Deep Water Ship Channel when covered species are present. The BDCP would operate
21 and maintain an oxygen aeration facility in the Stockton Deep Water Ship Channel to increase DO
22 concentrations. By improving conditions for covered and game fish species, this measure would
23 increase opportunities for onshore and boat fishing activities.

24 CM15 would reduce local effects of predators on covered fished species by conducting predator
25 control in areas with high predator density. Predator *hot spots* would be identified and control
26 methods would be adopted including the removal of predator hiding spots, modification of channel
27 geometry, targeted removal of predators, and other focused methods as dictated by site-specific
28 conditions and the intended outcome or goal. Preference for which hot spots to address would be
29 given to areas of high overlap with covered fish species, such as migratory routes or spawning and
30 rearing habitats. Predator control would decrease opportunities for onshore and boat fishing for
31 species targeted for removal but would improve fishing opportunities for game species benefiting
32 from reduced predation. If implementation includes a relaxation of regulations relating to bag limits
33 or size restrictions associated with predatory species, this measure would carry a beneficial effect
34 for anglers targeting these species as well. Overall, as for other CMs targeting predator species, these
35 efforts would not appreciably reduce Delta-wide abundances of predatory game fish such that
36 recreational fishing would be adversely affected (refer to Chapter 11, *Fish and Aquatic Resources*,
37 Section 11.3.4.9).

38 CM16 involves nonphysical fish barriers at the junction of channels with low survival of
39 outmigrating juvenile salmonids to deter fish from entering these channels. Nonphysical fish barrier
40 placement locations would include the Head of Old River, the Delta Cross Channel, and Georgiana
41 Slough, and could possibly include Turner Cut, Columbia Cut, the Delta-Mendota Canal intake, and
42 Clifton Court Forebay. Installation of these barriers could temporarily limit fishing activities by
43 creating noise and necessitating a physical footprint in existing fishing areas. This measure would
44 decrease opportunities for onshore and boat fishing in some channels but would support overall

1 native fish populations, resulting in a mixed, but minimal, effect on fishing opportunities across the
2 Delta region.

3 To address the illegal harvest of covered species across the study area, under CM17, the BDCP
4 Implementation Office would contribute funds directly to the CDFW Delta-Bay Enhanced
5 Enforcement Program to hire and equip additional staff to improve enforcement against poaching of
6 covered species. The program currently has a 10-warden squad; the BDCP would provide funds to
7 hire and equip 23 additional staff, including 17 game wardens and 6 supervisory and administrative
8 staff, to increase enforcement of fishing regulations. While this measure would curb illegal fishing
9 activities and could result in greater regulatory burdens for law-abiding anglers as a result of
10 increased inspection frequency, it would increase opportunities for a wider number of individuals
11 through the enforcement of bag limits.

12 CM18 would establish new conservation propagation programs and expand the existing program for
13 delta and longfin smelt. This measure would include development of a delta and longfin smelt
14 conservation hatchery by USFWS. The specifications and operations of this facility have not been
15 developed. The final selection of a location for the facility will involve additional environmental
16 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
17 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20).
18 One site is northwest of the city limits and could be used for a supplementation production facility.
19 This site is not near any existing well-established recreation sites or opportunities and is
20 approximately 1 mile from the Sacramento River such that future construction and operation
21 activities would not be expected to affect water-based recreation opportunities and experiences.
22 The other site is a former Army Reserve on the west river bank, south of the city limits, that would
23 be developed as a genetic refuge and research facility. Construction at this site could affect
24 recreation activities and experiences at the Delta Marina Yacht Harbor, immediately north of the
25 site, and boating (including boat fishing) on the Sacramento River, depending on noise levels and the
26 degree of visual disturbances. Additional permitting and environmental documentation would be
27 needed to implement this conservation measure once facility designs and funding are available.
28 Overall, implementation of CM18 would not be expected to have an adverse effect on fishing
29 opportunities because construction of the facility would be anticipated to last 2 years or less (short
30 term) and operation of the facility would not be expected to affect recreational fishing.

31 Under CM19, the BDCP Implementation Office would provide a mechanism for implementing
32 stormwater treatment measures that would result in decreased discharge of contaminants to the
33 Delta. These measures would be focused on urban areas and would fund local government projects
34 to reduce pollutant discharges in stormwater. This conservation measure is intended to reduce the
35 amount of pollution in stormwater runoff entering Delta waterways. These efforts would benefit
36 aquatic species, including sport fish populations, in the study area. There would be no adverse effect
37 on recreational fishing.

38 Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive
39 Species Program designed to implement actions to prevent the introduction of new aquatic invasive
40 species and reduce the spread of existing aquatic invasive species via recreational watercraft,
41 trailers, and other mobile recreational equipment used in aquatic environments in the study area.
42 The program would consist of two primary elements targeting recreational boaters: education and
43 outreach, and watercraft inspection. Education and outreach printed materials and interpretive
44 displays would provide information regarding the presence and range of existing aquatic invasive
45 species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive

1 species spreading within the study area, and the risk of new aquatic invasive species introductions.
2 The watercraft inspection would involve development and implementation of a comprehensive
3 inspection program. This type of program involves screening interviews at the point of entry; a
4 comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk
5 during the screening interview; decontamination and/or quarantine or exclusion of watercraft,
6 trailers, and equipment that are not clean, drained, and dry; and optional vessel certification. These
7 efforts would benefit aquatic species, including sport fish populations, in the study area. Although
8 there could be a marginal effect on the recreation experience if boaters are delayed at the boat
9 launch, it is expected that there would be no adverse effect on recreational fishing.

10 Under CM21, the BDCP proponents would provide funding for actions that would minimize the
11 potential for entrainment of covered fish associated with operation of nonproject diversions and
12 also to improve Delta ecosystem health by reducing the diversion of plankton and other nutritional
13 resources into nonproject diversions, thereby benefiting all covered fishes. The number and size of
14 the diversions that would be eliminated are not precisely known because the affected parcels have
15 not yet been identified and moreover, some existing diversions may be remediated before being
16 incorporated into the BDCP preserve system. Unscreened diversions may be handled through
17 removal of individual diversions that have relatively large effects on covered fish species;
18 consolidation of multiple unscreened diversions to a single or fewer screened diversions placed in
19 lower quality habitat; relocation of diversions with substantial effects on covered species from high
20 quality to lower quality habitat, in conjunction with screening; reconfiguration and screening of
21 individual diversions in high quality habitat to take advantage of small-scale distribution patterns
22 and behavior of covered fish species relative to the location of individual diversions in the channel;
23 voluntary alteration of the daily and seasonal timing of diversion operation; or other methods may
24 be implemented if the technical team determines it to be appropriate. Implementation of this
25 measure would likely involve some in-water construction at some sites. These activities would be
26 highly localized and of short duration and would not be expected to result in adverse effects on
27 recreational fishing in the study area. Mitigation measures and environmental commitments would
28 be available to reduce the effects of construction on recreation opportunities and experiences in the
29 study area.

30 During the implementation stage, construction activity associated with conservation measures could
31 result in adverse effects on recreation by temporarily or permanently limiting access to fishing sites
32 and disturbing fish habitat. The conservation measures are expected to result in a long-term
33 beneficial effect on recreation by enhancing aquatic habitat and fish abundance in the study area.

34 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
35 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
36 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
37 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
38 implementation stage, these measures could result in impacts on fishing opportunities by
39 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
40 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
41 onshore fishing opportunities. These impacts would be considered less than significant because the
42 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
43 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
44 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
45 and although these CMs would result in highly localized reductions of predatory species, overall,
46 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory

1 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.9). Construction of
2 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
3 recreational fishing. The potential impact on covered and non-covered sport fish species from
4 construction activities would be considered less than significant because the BDCP would include
5 environmental commitments to prevent water quality effects include environmental training;
6 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
7 hazardous materials management plans, and spill prevention, containment, and countermeasure
8 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
9 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
10 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
11 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
12 implementation of the other conservation components. Because construction of the conservation
13 measure component facilities would be less intense and of shorter duration than construction of
14 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
15 the construction-related impacts on recreational fishing associated with the other conservation
16 measures to a less-than-significant level. Further, the individual facilities or conservation elements
17 will undergo additional environmental review and permitting which will include identification of
18 site-specific measures to further protect resources.

19 Environmental commitments that will reduce construction-related impacts on recreation include a
20 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
21 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
22 REC-3, above). In addition, a number of mitigation measures will address construction-related
23 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
24 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
25 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
26 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
27 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
28 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
29 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.9). Mitigation measures NOI-1a
30 and NOI-1b will address construction-related noise concerns (see additional discussion under
31 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.9). Finally, should
32 construction of conservation measure facilities require pile-driving, mitigation measures to protect
33 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
34 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.9).

35 In the long term, the impact on fishing opportunities would be considered beneficial because the
36 conservation measures are intended to enhance aquatic habitat and fish abundance.

37 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
38 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
39 **Transmission Lines and Underground Transmission Lines Where Feasible**

40 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
41 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 16 **of Pile Driving and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 20 **and Other Construction-Related Underwater Noise**

21 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 22 Alternative 1A, Impact AQUA-1.

23 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 24 **as a Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** This assessment evaluates BDCP conservation measures related to habitat restoration
 26 and enhancement efforts and those designed to reduce other stressors, describing their potential
 27 effects on boating recreation in the study area. Because the details surrounding the location and
 28 implementation of many of these measures are under development, these topics are addressed at a
 29 programmatic level. CM17, Illegal Harvest Reduction, is an enforcement funding measure; CM19,
 30 Urban Stormwater Treatment, would reduce pollutant discharges in stormwater—these measures
 31 would not affect recreational boating opportunities and are not discussed in this analysis.

32 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
 33 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
 34 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
 35 improvements and flow management facilities, would be implemented in four phases starting with
 36 plan implementation and continuing to approximately 2063. Boats are not allowed in the Yolo
 37 Bypass Wildlife Area, so there would be no effect on boating opportunities due to construction

1 activities associated with the physical modifications for this measure. The maximum extent of
2 inundation in the Yolo Bypass would not increase from current conditions, but the frequency and
3 duration of inundation events would increase. This measure would not affect opportunities for
4 boating-related activities as a result of longer inundation periods.

5 CM4 provides for the restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
6 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
7 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
8 early long-term, BDCP implementation would provide for the cumulative restoration of 25,975 acres
9 of freshwater and brackish tidal habitat in the BDCP ROAs under all the action alternatives. In the
10 late long-term, a cumulative 65,000 acres of freshwater and brackish tidal habitat throughout the
11 ROAs would be restored. The extent of restored tidal habitat includes a contiguous habitat gradient
12 encompassing restored shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal marsh
13 plain habitat, and adjoining transitional upland habitat. Areas to be restored would be modified by
14 breaching and lowering levees, constructing new or modified levees to protect adjacent areas from
15 flooding, connecting remnant sloughs or channels to improve circulation, and modifying ground
16 elevations to reduce effects of subsidence. CM4 would lead to temporary decreases in boat-related
17 recreation opportunities as a result of noise and other conditions associated with channel and bank
18 modification activities in restoration areas. Following completion of restoration, CM4 would support
19 expanded opportunities for boating in reconnected and dredged sloughs.

20 CM5 provides for restoration of 1,000 acres of seasonally inundated floodplain habitat within the
21 Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
22 floodplain restoration could occur along channels in many locations in the north, east, and/or south
23 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
24 most promising opportunities for large-scale restoration are in the south Delta along the San
25 Joaquin, Old, and Middle Rivers channels. These locations offer benefits to covered fish species,
26 practicability considerations, and compatibility with potential flood management projects. While
27 site preparation and earthwork activities associated with restoration may temporarily limit some
28 boating access and lead to degraded conditions resulting from noise, odors, or visual effects, CM5
29 would result in an increase in boat-related recreation opportunities as a result of the seasonal
30 expansion of navigable areas.

31 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
32 and mudflat habitats along existing levees. At least 5 miles of habitat would be enhanced within the
33 first 10 years and up to 20 miles after 30 years. CM6 would create benches on the outboard side of
34 levees or create setback levees. Construction effects including noise, odors, and deteriorated visual
35 conditions would temporarily alter the quality of the boating experience in enhancement areas.
36 Where construction and completion of new benches would extend into existing waterways,
37 navigable areas would be slightly reduced, which would permanently affect boating-related
38 recreation. However, in cases where setback levees are constructed and channels are expanded,
39 there would be a slight increase in boating opportunities.

40 CM11 would provide beneficial effects on boating opportunities by allowing recreation to occur on
41 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
42 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
43 4, Section 4.2.3.9.2 *Recreation*). The reserve system would update one boating facility, as well as a
44 new boat launch facility within the footprint of the North Delta diversion facilities, which would
45 increase opportunities for boating within the study area.

1 CM13 would control nonnative aquatic vegetation including Brazilian waterweed, water hyacinth,
2 and other nonnative submerged and floating aquatic vegetation in BDCP tidal habitat restoration
3 areas. While aquatic vegetation removal operations could temporarily restrict or obstruct
4 navigation and reduce the quality of boating, overall the measure would increase boat passage and
5 navigation and would improve the boating experience.

6 Under CM16, nonphysical fish barriers would be placed at the head of Old River, the Delta Cross
7 Channel, and Georgiana Slough and could possibly include Turner Cut, Columbia Cut, the Delta-
8 Mendota Canal intake, and Clifton Court Forebay. Depending on their design, the construction and
9 operation of these barriers could constrict boat passage or necessitate lower speed limits,
10 diminishing the boating experience around the barriers.

11 Implementing the conservation measures could result in an adverse effect on recreation by limiting
12 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
13 conservation measures could provide beneficial effects to recreation by expanding the extent of
14 navigable waterways available to boaters, improving and expanding boat launch facilities, and
15 removing nonnative vegetation that restricts or obstructs navigation.

16 CM18 would establish new conservation propagation programs and expand the existing program for
17 delta and longfin smelt. This measure would include development of a delta and longfin smelt
18 conservation hatchery by USFWS. The specifications and operations of this facility have not been
19 developed. The final selection of a location for the facility will involve additional environmental
20 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
21 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20).
22 One site is northwest of the city limits and could be used for a supplementation production facility.
23 This site is not near any existing well-established recreation sites or opportunities and is
24 approximately 1 mile from the Sacramento River such that future construction and operation
25 activities would not be expected to affect water-based recreation opportunities and experiences.
26 The other site is a former Army Reserve on the west river bank, south of the city limits, that would
27 be developed as a genetic refuge and research facility. Construction at this site could affect
28 recreation activities and experiences at the Delta Marina Yacht Harbor, immediately north of the
29 site, and boating on the Sacramento River, depending on noise levels and the degree of visual
30 disturbances. Overall, implementation of CM18 would not be expected to have an adverse effect on
31 recreational boating opportunities because construction of the facility would be anticipated to last 2
32 years or less (short term) and operation of the facility would not be expected to affect recreational
33 boating.

34 Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive
35 Species Program designed to implement actions to prevent the introduction of new aquatic invasive
36 species and reduce the spread of existing aquatic invasive species via recreational watercraft,
37 trailers, and other mobile recreational equipment used in aquatic environments in the study area.
38 The program would consist of two primary elements targeting recreational boaters: education and
39 outreach, and watercraft inspection. Education and outreach printed materials and interpretive
40 displays would provide information regarding the presence and range of existing aquatic invasive
41 species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive
42 species spreading within the study area, and the risk of new aquatic invasive species introductions.
43 The watercraft inspection would involve development and implementation of a comprehensive
44 inspection program. This type of program involves screening interviews at the point of entry; a
45 comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk

1 during the screening interview; decontamination and/or quarantine or exclusion of watercraft,
2 trailers, and equipment that are not clean, drained, and dry; and optional vessel certification.
3 Although there could be a marginal effect on the recreation experience if boaters are delayed at the
4 boat launch, it is expected that there would be no adverse effect on recreational boating.

5 Under CM21, the BDCP proponents would provide funding for actions that would minimize the
6 potential for entrainment of covered fish associated with operation of nonproject diversions and
7 also to improve Delta ecosystem health by reducing the diversion of plankton and other nutritional
8 resources into nonproject diversions, thereby benefiting all covered fishes. The number and size of
9 the diversions that would be eliminated are not precisely known because the affected parcels have
10 not yet been identified and moreover, some existing diversions may be remediated before being
11 incorporated into the BDCP preserve system. Unscreened diversions may be handled through
12 removal of individual diversions that have relatively large effects on covered fish species;
13 consolidation of multiple unscreened diversions to a single or fewer screened diversions placed in
14 lower quality habitat; relocation of diversions with substantial effects on covered species from high
15 quality to lower quality habitat, in conjunction with screening; reconfiguration and screening of
16 individual diversions in high quality habitat to take advantage of small-scale distribution patterns
17 and behavior of covered fish species relative to the location of individual diversions in the channel;
18 voluntary alteration of the daily and seasonal timing of diversion operation; or other methods may
19 be implemented if the technical team determines it to be appropriate. Implementation of this
20 measure would likely involve some in-water construction at some sites. These activities would be
21 highly localized and of short duration and would not result in adverse effects on recreational
22 boating in the study area.

23 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
24 some habitat restoration and enhancement measures and other conservation measures would limit
25 some opportunities for boating and boating-related recreation by reducing the extent of navigable
26 water available to boaters. Temporary effects would also stem from construction, which may limit
27 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
28 implementation. However, BDCP conservation measures would also lead to an enhanced boating
29 experience by expanding the extent of navigable waterways available to boaters, improving and
30 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
31 navigation. Because these measures would not be anticipated to result in a substantial long-term
32 disruption of boating activities, this impact is considered less than significant for the conservation
33 measures, with the exception of CM18, discussed further below.

34 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
35 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
36 The BDCP proponents would implement environmental commitments to include a noise abatement
37 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
38 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
39 address construction-related impacts on recreational boating by reducing the degree of aesthetic
40 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
41 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
42 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
43 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
44 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
45 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.9). Mitigation measures NOI-1a
46 and NOI-1b will address construction-related noise concerns (see additional discussion under

1 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.9). Implementation of
2 these measures, as determined applicable to construction of this facility under future site-specific
3 environmental review, would reduce impacts on recreational boating to less than significant. No
4 additional mitigation would be required.

5 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
6 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
7 **Transmission Lines and Underground Transmission Lines Where Feasible**

8 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
11 **Sensitive Receptors**

12 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
15 **Material Area Management Plan**

16 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
17 Alternative 1A, Impact AES-1.

18 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

19 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
22 **Extent Feasible**

23 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
26 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

27 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
30 **Landscaping Plan**

31 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
34 **Construction**

35 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
36 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 2 **to Prevent Light Spill from Truck Headlights toward Residences**

3 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 6 **Plan**

7 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 10 **Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 14 **Agreements to Enhance Capacity of Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 18 **Construction**

19 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 21 **Tracking Program**

22 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 24 **Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** This section considers upland recreational activities and potential effects from BDCP
 26 conservation measures geared toward the restoration and enhancement of habitat and the
 27 reduction of stressors on covered species. The activities under consideration include hunting,
 28 hiking, walking, wildlife viewing, botanical viewing, nature photography, picnicking, and sightseeing.
 29 The specific location and implementation activities associated with these measures are pending;
 30 thus, these topics are addressed at a programmatic level. Future guidelines governing the level of
 31 recreational access allowed in restored habitat areas would influence the severity of the BDCP's
 32 effects on these activities. CM17–CM21 involve enforcement, management, or other individual,
 33 localized project components that would not affect upland recreation opportunities. CM17 is an
 34 enforcement funding mechanism and would not result in a physical change to upland areas;
 35 construction under CM18, CM19 or CM21 would not affect existing upland recreation areas; and
 36 CM20 is an enforcement action primarily located at boat launches and would not affect upland
 37 recreation areas and related opportunities. These measures are not discussed further in this
 38 analysis.

1 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
2 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
3 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
4 improvements and flow management facilities, would be implemented in four phases starting with
5 plan implementation and continuing to approximately 2063. The maximum extent of inundation in
6 the Yolo Bypass would not increase from current conditions, but the frequency and duration of
7 inundation events would increase. The Yolo Bypass Wildlife Area provides opportunities for upland
8 recreational activities, including waterfowl and upland game bird hunting, hiking and walking,
9 wildlife viewing, botanical viewing, and nature photography. Changes to flood management in the
10 Yolo Bypass have the potential to result in effects on waterfowl and other recreation uses, including
11 recreational hunting, in this area (Ducks Unlimited 2012). Because the wildlife area closes during
12 periods of inundation, this measure would decrease opportunities for these activities as a result of
13 the longer inundation periods in the Yolo Bypass. Under Existing Conditions, flood-related
14 conditions contribute to Yolo Bypass hunting area closures lasting for up to 2 weeks (14 days) out of
15 the 100-day hunting season. Removal of berms and levees could also decrease recreational access in
16 the Yolo Bypass. Construction activities would also temporarily affect the quality of activities by
17 introducing noise, odors, and unattractive visual scenes into the recreational environment. Longer
18 inundation events would reduce wetland-dependent wildlife species access to food and could result
19 in impacts to upland game birds and failure of nesting birds during spring events. This may decrease
20 hunting and wildlife viewing experiences during non-flooding periods. Winter flood water levels
21 under CM2 could be deeper than Existing Conditions waterfowl species (e.g., dabbling duck) that
22 prefer a shallower flooded seasonal wetland area could experience reduced foraging habitat.
23 Another factor that could affect waterfowl populations and related waterfowl hunting and bird
24 watching would be spring seed production loss and related decrease of food resources for these
25 populations (Ducks Unlimited 2012). Hunting in the Yolo Bypass is most common in the lower
26 elevation portions of the property; thus, low levels of flooding would impact blind areas and free
27 roam areas and reduce hunting opportunities. Two inundation targets have been proposed for CM2,
28 which would attempt to inundate 7,000-10,000 acres from November to May, or 17,000 acres from
29 December through February, every year for 50 years, which could have potential effects on
30 waterfowl and associated recreational opportunities. The hunting season for waterfowl lasts from
31 late October through January, so some months would not be affected by inundation. However, CM2
32 would still have an adverse effect on upland recreational opportunities. The BDCP proponents and
33 agencies are considering alternative methods for managing closures at the wildlife area, such as
34 partial rather than full closures following flood events, and so it could be that future operations
35 would not adversely affect the overall hunting season. Additionally, environmental commitments
36 are available to reduce the effects of inundation on upland recreational opportunities.

37 CM3 provides the mechanism and guidance for land acquisition and establishment of a system of
38 conservation lands in the study area necessary to meet BDCP natural community and species habitat
39 protection objectives. This system of conservation lands would be built over the implementation
40 term of the BDCP to protect and enhance areas of existing natural communities and covered species
41 habitat, protect and maintain years of selected plant species with very limited distributions, provide
42 sites suitable for restoration of natural communities and covered species habitat, and provide
43 habitat connectivity among the various BDCP conservation land units in the system. This measure
44 includes tidal habitat restored under CM4; valley/foothill riparian habitat restored under CM7;
45 grassland habitat restored under CM8; 8,000 acres of grassland habitat protected, vernal pool
46 complex restored to achieve no net loss under CM9; 600 additional acres vernal pool complex
47 protected, nontidal freshwater perennial emergent wetland and nontidal perennial aquatic habitat

1 restored under CM10; 400 acres of alkali seasonal wetland complex protected and 16,620–32,640
2 acres of agricultural habitats protected. Depending on the acquisition strategy implemented through
3 this measure, recreational access for upland activities could be expanded or diminished.
4 Mechanisms that permit public access would increase opportunities related to upland hunting,
5 hiking, walking, wildlife viewing, botanical viewing, nature photography, picnicking, and sightseeing.
6 Alternatively, acquisition that would exclude public recreational use would decrease opportunities
7 for these activities.

8 CM4 provides for restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
9 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
10 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
11 late long-term, BDCP implementation would provide for the cumulative restoration of 65,000 acres
12 of freshwater and brackish tidal habitat in the BDCP ROAs under Alternative 1A. The extent of
13 restored tidal habitat includes shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal
14 marsh plain habitat, and adjoining transitional upland habitat. Areas to be restored would be
15 modified by breaching and lowering levees, constructing new or modified levees to protect adjacent
16 areas from flooding, connecting remnant sloughs or channels to improve circulation, and modifying
17 ground elevations to reduce effects of subsidence. Site preparation and earthwork associated with
18 this restoration could result in temporary closure to recreational areas and excess noise, decreasing
19 recreational quality. Additionally, some upland areas would be converted to tidal habitat as part of
20 this measure, limiting access for upland recreation activities including upland hiking and walking,
21 camping, picnicking, and nature viewing and photography. However, because transitional upland
22 habitat adjoining tidal areas would also be restored, this could also create new opportunities.
23 Furthermore, restoration actions adjacent to existing recreational areas could enhance the quality of
24 the experience in these areas.

25 CM5 provides for the restoration of 1,000 acres of seasonally inundated floodplain habitat within
26 the Delta in the early long-term and up to 10,000 acres in the late long-term. Seasonally inundated
27 floodplain restoration could occur along channels in many locations in the north, east, and/or south
28 Delta. In most areas, setback levees would be constructed to modify the channel configuration. The
29 most promising opportunities for large-scale restoration are in the south Delta along the San
30 Joaquin, Old, and Middle River channels; these locations offer benefits to covered fish species,
31 practicability considerations, and compatibility with potential flood management projects. Levee
32 removal and construction would temporarily limit access, while increased inundation of formerly
33 upland areas would temporarily and permanently limit access, diminishing opportunities for a
34 range of upland recreational activities including upland hiking, walking, camping, picnicking, upland
35 game hunting, sightseeing, wildlife and botanical viewing, and nature photography. Noise, odors,
36 and visual degradation from construction would also temporarily affect upland recreational quality.
37 However, restoration under this measure would provide additional on-water waterfowl hunting
38 opportunities and improve the quality of recreational experiences in existing and adjacent
39 recreation areas.

40 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
41 and mudflat habitats along existing levees. Under CM6 at least 5 miles of habitat would be enhanced
42 within the first 10 years and up to 20 miles after 30 years. At least 5 of the 20 miles of channel
43 margin enhancement would take place along the Sacramento River and at least 5 miles would be
44 along the San Joaquin River. The remaining 10 miles would be distributed among other fish
45 migration channels. Earthwork and site preparation associated with habitat enhancement may limit
46 access to existing upland recreational areas and degrade the recreational experience. This measure

1 would create benches on the outboard side of levees or create setback levees. Where setback levees
2 and associated enhancement activities close access to existing upland areas, associated recreational
3 opportunities such as wildlife viewing and hiking would be reduced. Where habitat enhancement
4 creates new upland areas accessible to recreationists, the opportunities for upland activities would
5 improve. In either case, habitat enhancements would improve the experience of wildlife-dependent
6 upland recreational activities from existing, adjacent recreation areas.

7 CM7 would restore 1,100 acres of riparian habitat in the first 15 years and up to 5,000 acres in the
8 late long-term. Areas chosen for implementation of this measure would be associated with
9 restoration and enhancement activities associated with CM4, CM5, and CM6. By year 40 of
10 implementation, the BDCP would cumulatively restore 5,000 acres of riparian habitat. Restoration of
11 riparian habitat would support fish habitat by increasing the input of organic material and by
12 increasing the extent of shaded riverine aquatic cover. While construction activities and access
13 restrictions associated with this component may temporarily or permanently reduce opportunities
14 for or quality of upland recreational activities, this measure would restore riparian habitat, which
15 would support increased opportunities and improved quality of upland game hunting, wildlife
16 viewing, botanical viewing, nature photography, hiking, walking, picnicking, and sightseeing.

17 Under CM8, 2,000 acres of grassland within CZ 1, CZ 8, and CZ 11 would be restored. Restoration
18 activities for this measure would be associated with tidal habitat restoration under CM4 and
19 agricultural land protection under CM3. Anticipated actions to restore grassland habitat, as
20 appropriate to site-specific conditions, would include, but not be limited to, acquiring lands, in fee
21 title or through conservation easements, with site characteristics that support restoration of high-
22 value grassland, restoring grassland by sowing native species using a variety of techniques, and
23 potentially restoring grazing grassland habitat to modify its vegetation. While earthwork and site
24 preparation of these areas could temporarily degrade recreational access and quality by introducing
25 noise and odors into the setting, restoration of grassland communities would increase opportunities
26 for upland hunting, wildlife viewing, botanical viewing, and nature photography due to
27 improvements to wildlife and native plant habitats. Restoration of natural areas under this measure
28 would also increase opportunities for upland hiking, walking, picnicking, and sightseeing.

29 Under CM9, vernal pool complex in CZ 1, CZ 8, and CZ 11 would be restored to achieve no net loss of
30 this habitat type associated with BDCP covered activities. Anticipated actions to restore vernal pool
31 complex habitat include acquiring lands, in fee-title or through conservation easement, suitable for
32 restoration of vernal pool complex habitat; restoring remnant natural vernal pool and swale
33 topography; restoring and maintaining natural hydrology; restoring and maintaining natural salt
34 and suspended clay concentrations in vernal pool water; significantly reducing or preventing the
35 deposition of substances that increase the fertility of the habitat; controlling the cover of invasive
36 nonnative plant species; adjusting livestock grazing regimes in vernal pool complexes; preventing
37 the introduction of invasive species; and hand collecting seed and vernal pool invertebrates from the
38 vicinity of the vernal pools to be restored as a source for establishment of native species. Activities
39 associated with the implementation of this measure could temporarily limit access to existing
40 recreational opportunities and create noise, detracting from the experience; however, restoration of
41 vernal pool complexes is anticipated to modestly increase opportunities for upland recreation
42 including wildlife viewing, botanical viewing, and nature photography.

43 Under CM10, 1,200 acres of nontidal freshwater marsh within CZ 2 and CZ 4 and/or CZ 5 would be
44 restored by year 40. CM10 actions would be phased with 400 acres restored by year 10, 600 by year
45 20 and the cumulative total of 1,200 acres restored by year 40. Restoration of nontidal freshwater

1 emergent wetland and nontidal perennial aquatic natural communities would provide habitat for
2 giant garter snake, western pond turtle, and other native wildlife and plant species characteristic of
3 this habitat. Restored nontidal wetlands would also be designed and managed to support other
4 native wildlife functions including waterfowl foraging, resting, and brood habitat and shorebird
5 foraging and roosting habitat. Restored habitat would include preserved transitional upland habitat
6 to provide upland habitat for giant garter snakes and western pond turtles and nesting habitat for
7 waterfowl. While construction activities and access restrictions associated with this measure may
8 reduce some upland recreational opportunities and create temporary construction effects from
9 activities producing noise or odors, improvements in wildlife and native plant habitats associated
10 with the measure would increase the quality of upland hunting, wildlife viewing, botanical viewing,
11 and nature photography in and adjacent to restored areas.

12 Implementation of CM11 would provide beneficial effects on recreation opportunities by allowing
13 recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system, consisting
14 of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural community types
15 (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than
16 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead facilities and one
17 updated boating facility, as well as a new boat launch facility within the footprint of the North Delta
18 diversion facilities. This measure is expected to increase upland recreational opportunities by
19 permitting hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, and equestrian
20 use, as well as a potential for limited hunting opportunities.

21 Implementing the conservation measures could result in an adverse effect on recreation
22 opportunities by reducing the extent of upland recreation sites and activities available to hiking,
23 nature photography, or other similar activity. However, implementation of the measures would also
24 restore or enhance new potential sites for upland recreation thereby improving the quality of
25 recreational opportunities.

26 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
27 conservation measures would temporarily limit opportunities for upland recreational activities
28 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
29 construction activities would also temporarily compromise the quality of upland recreation in and
30 around these areas. Additionally, it is possible that current areas of upland recreation would be
31 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
32 activities. These impacts on upland recreational opportunities would be considered less than
33 significant because the BDCP would include environmental commitments that would require BDCP
34 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
35 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
36 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
37 upland recreation and the measure would improve the quality of existing recreational opportunities
38 adjacent to areas modified by the conservation measures. These measures would not be anticipated
39 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
40 considered less than significant.

1 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 2 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 3 **Addressing Recreation Resources**

4 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 5 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 6 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 7 provide guidance for recreation resource issues as overviewed in *Section 17.2, Regulatory Setting*.
 8 This overview of plan and policy compatibility evaluates whether Alternative 4 is compatible or
 9 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 10 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 11 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 12 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 13 physical effects of Alternative 4 on recreation resources is addressed in Impacts REC-1 through REC-
 14 11, and in other chapters such as Chapter 23, *Noise*, Section 23.4.3.9, and Chapter 17, *Aesthetics and*
 15 *Visual Resources*, Section 17.3.3.9. The following is a summary of compatibility evaluations related to
 16 recreation resources for plans and policies relevant to the BDCP.

- 17 ● *The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta*
 18 *and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General*
 19 *Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National*
 20 *Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation*
 21 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
 22 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
 23 resources and promote a range of opportunities to visitors to these areas. Construction and
 24 operation of the proposed water conveyance facilities and other conservation measures would
 25 not affect recreation opportunities in these areas and would be compatible with these plans.
- 26 ● The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
 27 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
 28 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
 29 all focused on the protection of resources, including recreation resources, within the Delta.
 30 These plans have policies, objectives, or goals intended to protect and enhance existing
 31 recreation and encourage development of new local and regional opportunities. Constructing
 32 the proposed conveyance facilities would result in long term disruption to existing established
 33 recreation areas in the study area and change the nature of the recreation setting. The proposed
 34 water conveyance elements could be considered incompatible with measures to protect existing
 35 recreation opportunities in the study area.
- 36 ● The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
 37 and the Great California Delta Trail *Blueprint Report for Contra Costa and Solano Counties* all
 38 promote development of a regional trail system providing a continuous regional recreational
 39 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
 40 regional and local efforts to design proposed restoration areas to be compatible with and
 41 complement the goals of creating a regional trail network and where feasible to adapt
 42 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 43 ● Regional plans and those geared toward the management of specific areas, including the *Stone*
 44 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
 45 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*

1 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
 2 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
 3 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
 4 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
 5 may create disruptions related to facility and restoration improvements. Proposed restoration
 6 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
 7 compatible with and complement the current management direction for these areas and would
 8 be required to adapt restoration proposals to meet current policy established for managing
 9 these areas.

- 10 ● The BDCP would be constructed and operate in compliance with regulations related to boat
 11 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
 12 Department of Boating and Waterways), and federal (including the U.S. Coast Guard) boating
 13 law enforcement. The alternative would be compatible with California State Land Commission
 14 regulations related to recreational piers or marinas.
- 15 ● EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
 16 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
 17 alternative.
- 18 ● Alternative 4 would result in the construction of permanent and temporary features associated
 19 with the proposed water conveyance facility across land governed by the general plans of
 20 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
 21 policies related to the protection of recreation resources and encourage the development of new
 22 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
 23 recognize the Delta as an area of international importance and as a major recreational resource
 24 of these counties. Construction activities that disrupt and degrade recreation opportunities in
 25 the study area would be incompatible with policies designed to protect recreation resources,
 26 including those intended to protect open space and natural areas and those that discourage
 27 development of public facilities and infrastructure unless it is related to agriculture, natural
 28 resources and open space, and has recreational value.

29 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 30 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 31 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 32 the alternative with relevant plans and polices.

33 **15.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and** 34 **Intake 1 (3,000 cfs; Operational Scenario C)**

35 For the purposes of assessment of effects on recreation, Alternative 5 is the same as Alternative 1A,
 36 with the following exceptions.

- 37 ● Only one intake facility would be constructed under Alternative 5 (Intake 1).
- 38 ● Alternative 5 has a different operations scenario.
- 39 ● Under Alternative 5, tidal habitat restoration would be limited to 25,000 acres.

40 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
 41 Alternative 5 (Mapbook Figure 15-1), except that recreation sites or areas affected by construction

1 of Intakes 2, 3, 4, or 5 would not be affected under Alternative 5. Specific effects on recreation areas
2 or sites are discussed under Alternative 1A.

3 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
4 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
5 **Proposed Water Conveyance Facilities**

6 **NEPA Effects:** Alternative 5 effects would be the same as those discussed under Alternative 1A, with
7 the exception that Alternative 5 proposes one intake site rather than 5 (Intake 1). The proposed
8 location of the Alternative 5 intake facility, tunnels, and associated water conveyance facilities
9 would not lie within the designated boundaries of any existing public use recreation site. The post-
10 construction location of the water conveyance facilities would not result in long-term disruption or
11 reduction of any well-established recreation activity or site, including parks, marinas, or other
12 designated areas. Therefore, there would be no adverse effects. Effects on recreation related to
13 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
14 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, and Chapter 23, *Noise*, Section
15 23.4.3.10, for additional discussion of these topics.

16 **CEQA Conclusion:** The alternative would not result in the permanent displacement of any well-
17 established public use or private commercial recreation facility available for public access.
18 Therefore, impacts are considered less than significant. No mitigation is required.

19 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
20 **as a Result of Constructing the Proposed Water Conveyance Facilities**

21 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
22 under Alternative 5 would be similar to those described for Alternative 1A; however, only one
23 intake location (Intake 1) would be constructed under Alternative 5. Effects associated with
24 Alternative 5 construction of physical components would be anticipated to be less severe relative to
25 Alternative 1A for the Clarksburg Fishing Access and Stone Lakes NWR because Intakes 2, 3, 4, and 5
26 would not be constructed. However, overall, substantial disruption of recreation opportunities at
27 the sites within the alternative impact area would still occur. Construction may occur year-round
28 and last from 1 to 5 years and in-river construction activities primarily would be limited to June 1
29 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
30 12.3.3.10, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, Chapter 19, *Transportation*,
31 Section 19.3.3.10, and Chapter 23, *Noise*, Section 23.4.3.10, for additional detail related to
32 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
33 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
34 sites or areas within the construction impact area.

35 **Other Recreation Opportunities**

36 *On-Water Recreation*

37 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
38 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
39 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
40 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
41 outside of the impact area for noise, the overall recreation experience upstream or downstream of
42 these sites may fall within the noise impact area and could experience diminished recreation

1 opportunities because of the elevated noise levels as well as visual setting disruptions over the
2 course of intake installation. Overall, construction activities associated with the proposed water
3 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
4 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
5 further limited primarily to June 1 through October 31 each year. Although dewatering would take
6 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
7 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
8 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
9 recreationists to experience a changed recreation setting.

10 *Campgrounds*

11 Nighttime construction activities would require the use of bright lights that would negatively affect
12 nighttime views of and from the work area. This would affect any overnight camping at the
13 recreation sites and areas discussed above, although day use areas that close at sunset would not be
14 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
15 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.10,
16 another nighttime effect on recreation would be construction noise levels that could adversely affect
17 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
18 construction could be infrequent and intermittent, but would adversely affect camping sites.
19 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
20 NOI-1b would be available to address these effects.

21 *Summary*

22 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
23 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
24 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
25 12.3.3.10, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, Chapter 19, *Transportation*,
26 Section 19.3.3.10, and Chapter 23, *Noise*, Section 23.4.3.10, for additional detail related to
27 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
28 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
29 sites or areas within the construction impact area.

30 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
31 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
32 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
33 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
34 measures, environmental commitments, and conservation measures would provide several benefits
35 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
36 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
37 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
38 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
39 degradation associated with accidental spills, runoff and sedimentation, and dust could have
40 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
41 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
42 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
43 crane, would be implemented by the BDCP proponents where determined necessary for all covered
44 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix

1 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
2 *Commitments*, DWR would implement an environmental commitment that would dispose of and
3 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
4 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
5 of the action alternatives, implementation of CM3 and CM11 will result in protection and
6 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
7 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
8 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
9 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
10 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
11 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
12 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
13 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
14 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
15 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
16 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
17 bicycling, equestrian use, hunting, fishing, and boating.

18 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, identifies a number of mitigation
19 measures that would be available to address construction-related visual effects on sensitive
20 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
21 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
22 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
23 addition, the chapter identifies measures to address longer term visual effects associated with
24 changes to the landscape/visual setting from construction and the presence of new water
25 conveyance features. These include developing and implementing a spoil/borrow and RTM area
26 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
27 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
28 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
29 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
30 would also make a commitment to enhance the visual character of the area by creating new wildlife
31 viewing sites and enhancing interest in the construction site by constructing viewing areas and
32 displaying information about the project, which may attract people who may use the recreation
33 facilities to the construction site as part of the visit.

34 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
35 proponents will work with the California Department of Parks and Recreation to help insure the
36 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
37 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
38 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
39 helping to fund or construct elements of the American Discovery Trail and the potential conversion
40 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
41 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
42 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
43 proposal. The BDCP project proponents will also work with DPR to determine if some of the
44 constructed elements of CM1 could incorporate elements of the DPR's proposal.

45 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
46 involve preparation of site-specific construction traffic management plans that would address

1 potential public access routes and provide construction information notification to local residents
2 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
3 of access to affected recreation areas as an environmental commitment. Where construction
4 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
5 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
6 construction sites. These would be designed to be safe, pleasant and would integrate with
7 opportunities to view the construction site as an additional area of interest. These physical facilities
8 would be combined with public information, including sidewalk wayfinding information that would
9 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
10 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
11 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
12 congested roadway segments.

13 Chapter 23, *Noise*, Section 23.4.3.10, discusses that construction noise effects could be addressed
14 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
15 implementation of a complaint/response tracking program (NOI-1b), and an environmental
16 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
17 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
18 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
19 viewing the aesthetic amenities of the area.

20 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
21 2 would ensure continued access to existing recreation experiences. The Delta offers many
22 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
23 all of which would continue to be available for recreationists. However, due to the length of time that
24 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
25 related to temporary disruption of existing recreational activities at facilities within the impact area
26 would be adverse.

27 **CEQA Conclusion:** Construction of the Alternative 5 intakes and related water conveyance facilities
28 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
29 years) impacts on well-established recreational opportunities and experiences in the study area
30 because of access, noise, and visual setting disruptions that would result in loss of public use. These
31 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
32 commitments, and AMMs would reduce these construction-related impacts by implementing
33 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
34 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
35 and implement noise reduction and complaint tracking measures. However, the level of impact
36 would not be reduced to less than significant because even though mitigation measures and
37 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
38 and noise conditions that could detract from the recreation experience, due to the dispersed effects
39 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
40 of these impacts to less than significant in all instances such that there would be no reduction of
41 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
42 considered significant and unavoidable. However, the impacts related to construction of the intakes
43 would be less than significant.

1 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

2 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
3 1A.

4 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
5 **Disturbance of Nesting Birds**

6 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
7 Alternative 1A, Impact BIO-75.

8 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
9 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
10 **Transmission Lines and Underground Transmission Lines Where Feasible**

11 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
14 **Sensitive Receptors**

15 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
18 **Material Area Management Plan**

19 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

22 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
25 **Extent Feasible**

26 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
29 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

30 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
33 **Landscaping Plan**

34 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
35 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
 2 **Residents**

3 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 6 **Construction**

7 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 10 **to Prevent Light Spill from Truck Headlights toward Residences**

11 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 14 **Plan**

15 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 18 **Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 22 **Agreements to Enhance Capacity of Congested Roadway Segments**

23 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 24 Impact TRANS-1.

25 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 26 **Construction**

27 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 29 **Tracking Program**

30 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

31 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 32 **Result of Constructing the Proposed Water Conveyance Facilities**

33 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
 34 under this alternative would be similar to those described for Alternative 1A; however, only one
 35 intake location would be constructed under Alternative 5. While effects associated with this

1 alternative would therefore be anticipated to be less severe than those from Alternative 1A, long-
2 term conflicts with navigation would remain. Direct effects on boat passage and navigation on the
3 Sacramento River would result from construction of the intake. Effects could include reduced access
4 and delays to boat passage and navigation related to the narrower available river width and
5 temporary speed zones. However, boat passage volume along the corridor of the Sacramento River
6 where the intake is proposed is low. Water-based recreational activities such as waterskiing,
7 wakeboarding, or tubing are also low. In addition, there is sufficient width in the channel to allow
8 boat passage, with minor delays related to construction speed zones. Construction of only one intake
9 rather than 5 would reduce the extent of this effect on Sacramento River navigation, although the
10 effect would still be long-term because construction would last for more than 2 years. These effects
11 would be addressed with the implementation of mitigation measure TRANS-1a that involves the
12 BDCP proponents developing and implementing site-specific construction traffic management plans,
13 including waterway navigation elements. Nonetheless, these effects would be long-term would be
14 considered adverse because of the reduced recreation opportunity and experiences expected to
15 exist near construction activity.

16 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
17 and navigation on the Sacramento River and other waterways in the study area, including the
18 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
19 channel closures that could impede boat movement and eliminate recreational opportunities. In
20 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
21 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
22 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
23 implementation of site-specific construction traffic management plans, including specific measures
24 related to management of barges and stipulations to notify the commercial and leisure boating
25 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
26 contribute funds for the construction of new recreation opportunities as well as for the protection of
27 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
28 proponents would also assist in funding the expansion of state recreation areas in the Delta as
29 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
30 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
31 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
32 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
33 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
34 recreational opportunities within the project area by providing a recreational opportunity
35 downstream/upstream in the same area for the same regional recreational users. These
36 commitments are further described in Appendix 3B, *Environmental Commitments*.

37 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
38 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
39 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
40 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
41 Agriculture Research Service, University of California Cooperative Extension Weed Research and
42 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
43 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
44 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
45 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
46 initial control efforts would occur to maximize the effectiveness of the conservation measure. The

1 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
 2 Enhanced ability to control these invasive vegetation would lead to increased recreation
 3 opportunities which would compensate for the loss of recreational opportunities within the project
 4 area by providing a recreational opportunity downstream/upstream in the same area for the same
 5 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
 6 *Commitments*.

7 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
 8 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
 9 proponents would also ensure through various outreach methods that recreationists were aware of
 10 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
 11 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
 12 adverse.

13 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
 14 construction of the intake and temporary barge unloading facilities. Impacts would last
 15 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
 16 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
 17 closures could impede boat movement and eliminate recreational opportunities. In waterways
 18 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
 19 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
 20 development and implementation of site-specific construction traffic management plans, including
 21 specific measures related to management of barges and stipulations to notify the commercial and
 22 leisure boating communities of proposed barge operations in the waterways. While the
 23 environmental commitments would reduce impacts on water-based recreation (water-skiing,
 24 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
 25 eliminated during construction, these impacts would be long-term and considered significant and
 26 unavoidable.

27 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 28 **Plan**

29 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 30 Impact TRANS-1.

31 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 32 **Result of Constructing the Proposed Water Conveyance Facilities**

33 **NEPA Effects:** Effects on recreational fishing under Alternative 5 would be similar to those described
 34 under Alternative 1A, Impact REC-4. However, only one intake location (Intake 1) would be
 35 constructed under Alternative 5, so effects associated with construction of physical components
 36 would be anticipated to be less severe.

37 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10, Sacramento River and
 38 Delta region fish populations would not be affected by changes to localized water quality conditions,
 39 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
 40 recreational fishing opportunities would be substantially reduced during construction. BDCP
 41 environmental commitments to prevent water quality effects include environmental training;
 42 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 43 hazardous materials management plans, and spill prevention, containment, and countermeasure

1 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
2 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
3 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
4 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
5 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
6 avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish
7 populations likely would not be affected to the degree that fishing opportunities would be
8 substantially reduced, construction conditions would introduce noise and visual disturbances that
9 would affect the recreation experience for anglers.

10 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
11 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
12 setting disruptions could distract from the recreation experience including on weekends. However,
13 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
14 specific noise-generating activities near recreation areas would be scheduled to the extent possible
15 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
16 also be available to address construction-related visual effects on sensitive receptors from
17 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
18 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
19 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
20 chapter identifies measures to address longer term visual effects associated with changes to the
21 landscape/visual setting from construction and the presence of new water conveyance features.
22 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
23 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
24 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
25 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
26 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
27 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
28 locations. Additionally, anglers could move to other locations along the Sacramento River and
29 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
30 sites further removed from areas affected by construction. This effect would not be adverse.

31 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
32 construction activities would be considered less than significant because the BDCP would include
33 environmental commitments to prevent water quality effects include environmental training;
34 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
35 hazardous materials management plans, and spill prevention, containment, and countermeasure
36 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
37 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
38 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
39 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
40 that there would be no long-term reduction of local fishing opportunities and experiences. This
41 impact would be less than significant.

42 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

43 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
44 1A.

1 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
2 **of Pile Driving and Other Construction-Related Underwater Noise**

3 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
4 Alternative 1A, Impact AQUA-1.

5 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
6 **and Other Construction-Related Underwater Noise**

7 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
8 Alternative 1A, Impact AQUA-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
16 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
17 **Transmission Lines and Underground Transmission Lines Where Feasible**

18 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
21 **Sensitive Receptors**

22 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
25 **Material Area Management Plan**

26 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

29 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
32 **Extent Feasible**

33 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 10 **Result of the Operation of the Proposed Water Conveyance Facilities**

11 **NEPA Effects:** Operation of Alternative 5 may result in changes in entrainment, spawning, rearing
 12 and migration. However, in general, effects on (non-covered) fish species that are popular for
 13 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 14 recreational fishing. While there are some significant impacts to specific non-covered species, as
 15 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10, they are typically limited to
 16 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 17 would not result in a substantial long-term reduction in recreational fishing opportunities

18 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 19 operation of Alternative 5 would be considered less than significant because any impacts to fish and,
 20 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 21 not impact the species population of any popular sportfishing species overall.

22 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 23 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 24 **of-Delta Reservoirs**

25 **NEPA Effects:** Operation of Alternative 5 would result in changes in the frequency with which the
 26 end of September reservoir levels at study area reservoirs fall below levels identified as important
 27 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 28 Action Alternative (LLT-2060) (alternative operations contribution [impact] comparison) (Table 15-
 29 12a and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 30 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 31 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

32 **Existing Conditions (CEQA Baseline) Compared to Alternative 5 (2060)**

33 As shown in Table 15-12a and Table 15-12b, under Alternative 5 there would be from 3 to 28
 34 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 35 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 36 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and at San Luis Reservoir. However, as
 37 discussed under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations
 38 are caused by sea level rise, climate change, and operation of the alternative. It is not possible to
 39 specifically define the exact extent of the changes due to implementation of the action alternative
 40 using these model simulation results. Thus, the precise contributions of sea level rise and climate

1 change to the total differences between Existing Conditions and Alternative 5 cannot be isolated in
2 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 5
3 (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
4 attributable to operation of Alternative 5.

5 **No Action Alternative (2060) Compared to Alternative 5 (2060)**

6 The comparison of Alternative 5 (2060) to the No Action Alternative (2060) condition most closely
7 represents changes in reservoir elevations that may occur as a result of operation of the alternative
8 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
9 *Methodology*).

10 In comparisons of Alternative 5 (2060) operations to No Action Alternative (2060), the CALSIM II
11 modeling results indicate that reservoir levels under Alternative 5 operations, with the exception of
12 San Luis Reservoir, would either not change or would fall below the individual reservoir thresholds
13 less frequently than under No Action Alternative (2060) (Table 15-12a and Table 15-12b). These
14 changes in reservoir elevations at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New
15 Melones Lake would not be adverse. At Lake Oroville, Folsom Lake, and New Melones Lake, because
16 there would be fewer years in which the lake levels fall below the recreation threshold relative to No
17 Action Alternative (2060) conditions, these effects would be considered beneficial effects on
18 recreation opportunities and experiences. Operation of Alternative 5 would not adversely affect
19 water-dependent or water-enhanced recreation at these reservoirs. At Lake Oroville, Folsom Lake,
20 and New Melones Lake these conditions represent improved recreation conditions under operation
21 of Alternative 5 because there would be fewer years in which end-of-September reservoir levels
22 would fall below the recreation thresholds thus indicating better boating opportunities, when
23 compared to No Action Alternative (2060) conditions.

24 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
25 frequently under Alternative 5 (2060) conditions (22 years) relative to the No Action Alternative
26 (2060) for the Dinosaur Point boat launch. However, access to the Basalt boat launch, which is
27 available to reservoir elevation 340 feet, would not substantially change relative to the No Action
28 Alternative (2060) (there would be two fewer years below the threshold which would be considered
29 a beneficial effect). Therefore, because the Basalt boat launch would still be available for access to
30 the reservoir and there would be two fewer years in which the end-of-September reservoir
31 elevation would fall below recreation threshold at Basalt, these changes would not be adverse.
32 Shoreline fishing would still be possible, and other recreation activities at the reservoir—picnicking,
33 biking, hiking, and fishing—would be available. These changes would not be adverse.

34 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
35 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
36 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
37 Alternative 5 (2060) operations would fall below the individual reservoir thresholds either with the
38 same or reduced frequency than under the No Action Alternative (2060). These changes in reservoir
39 elevations would result in a less-than-significant impact on recreation opportunities and
40 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
41 Lake Oroville, Folsom Lake, and New Melones Lake, because there would be fewer years in which
42 the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
43 conditions, these impacts would be considered beneficial impacts on recreation opportunities and
44 experiences. At San Luis Reservoir, although boating opportunity would be reduced more frequently

1 for the Dinosaur Point boat launch, access to the Basalt boat launch would not substantially change.
2 The modeled two fewer years of exceeding the recreation threshold at the Basalt boat launch
3 attributable to operation of Alternative 5 (2060) relative to the No Action Alternative (2060) would
4 be less than significant and beneficial. Operation of Alternative 5 would not substantially affect
5 water-dependent or water-enhanced recreation at these reservoirs. This would be a less-than-
6 significant impact. No mitigation is required.

7 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
8 **Result of Maintenance of the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
10 intake facilities under Alternative 5 would be similar to those described for Alternative 1A; however,
11 maintenance activities would only be necessary for one intake facility under this alternative.
12 Maintenance would result in periodic temporary but not substantial effects on boat passage and
13 water-based recreational activities. Any effects would be short-term (less than 2 years) and
14 intermittent. Other facility maintenance activities would occur on land and would not affect boat
15 passage and navigation. Implementation of the environmental commitment to provide notification
16 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
17 *Commitments*) would reduce these effects. These effects are not considered adverse.

18 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
19 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
20 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
21 environmental commitment to provide notification of construction and maintenance activities in
22 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
23 Intake maintenance impacts on recreation would be considered less than significant because
24 impacts, if any, on public access or public use of established recreation facilities would last for 2
25 years or less. Mitigation is not required.

26 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
27 **Result of Maintenance of the Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Changes to land-based recreation opportunities as a result of maintenance of
29 conveyance facilities under Alternative 5 would be similar to those described for Alternative 1A,
30 Impact REC-8; however, under Alternative 5, only one intake facility would be constructed.
31 Maintenance would be short-term and intermittent and would be conducted within the individual
32 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
33 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
34 water conveyance facilities.

35 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
36 would not result in any changes to land-based recreational opportunities. Therefore, there would be
37 no impact. Mitigation is not required.

38 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
39 **Implementing Conservation Measures 2-21**

40 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
41 components as part of Alternative 5 could have effects related to recreational fishing that are similar
42 in nature to those discussed above for construction, and operation and maintenance of proposed

1 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
2 likely be substantially lower because the nature of the activities associated with implementing the
3 conservation components would be different—less heavy construction equipment would be
4 required and the restoration actions would be implemented over a longer time frame than CM1.
5 Potential effects from implementation of the conservation components would be dispersed over a
6 larger area and would generally involve substantially fewer construction and operation effects
7 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
8 components would be expected to result in long-term benefits to aquatic species. Additional
9 discussion related to the individual conservation measures is provided below.

10 With regards to fishing opportunities, effects of implementing the conservation components under
11 Alternative 5 would be similar to those described for Alternative 1A; however, under this
12 alternative, only 25,000 acres of tidal habitat would be restored (instead of 65,000 acres under
13 other action alternatives). CM2–CM21 would be expected to improve fishing opportunities in the
14 study area although some effect on fishing opportunities could take place during implementation of
15 the conservation measures. Overall, implementing the proposed conservation components would be
16 expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving
17 fishing opportunities

18 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
19 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
20 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
21 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
22 implementation stage, these measures could result in impacts on fishing opportunities by
23 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
24 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
25 onshore fishing opportunities. These impacts would be considered less than significant because the
26 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
27 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
28 Plan(Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
29 and although these CMs would result in highly localized reductions of predatory species, overall,
30 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
31 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10). Construction of
32 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
33 recreational fishing. The potential impact on covered and non-covered sport fish species from
34 construction activities would be considered less than significant because the BDCP would include
35 environmental commitments to prevent water quality effects include environmental training;
36 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
37 hazardous materials management plans, and spill prevention, containment, and countermeasure
38 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
39 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
40 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
41 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
42 implementation of the other conservation components. Because construction of the conservation
43 measure component facilities would be less intense and of shorter duration than construction of
44 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
45 the construction-related impacts on recreational fishing associated with the other conservation
46 measures to a less-than-significant level. Further, the individual facilities or conservation elements

1 will undergo additional environmental review and permitting which will include identification of
2 site-specific measures to further protect resources.

3 Environmental commitments that will reduce construction-related impacts on recreation include a
4 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
5 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
6 REC-3, above). In addition, a number of mitigation measures will address construction-related
7 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
8 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
9 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
10 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
11 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
12 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
13 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.10). Mitigation measures NOI-
14 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
15 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.10). Finally, should
16 construction of conservation measure facilities require pile-driving, mitigation measures to protect
17 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
18 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10).

19 In the long term, the impact on fishing opportunities would be considered beneficial because the
20 conservation measures are intended to enhance aquatic habitat and fish abundance.

21 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
22 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
23 **Transmission Lines and Underground Transmission Lines Where Feasible**

24 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
25 Alternative 1A, Impact AES-1.

26 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
27 **Sensitive Receptors**

28 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
31 **Material Area Management Plan**

32 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

35 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
36 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 5 **of Pile Driving and Other Construction-Related Underwater Noise**

6 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 7 Alternative 1A, Impact AQUA-1.

8 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 9 **and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 11 Alternative 1A, Impact AQUA-1.

12 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 13 **as a Result of Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 15 conservation components under Alternative 5 would be similar to those described for Alternative
 16 1A; however, under this Alternative, only 25,000 acres of tidal habitat would be restored (instead of
 17 65,000 acres under other action alternatives). Implementing the conservation measures could result
 18 in an adverse effect on recreation by limiting boating by reducing the extent of navigable waterways
 19 available to boaters. Once implemented, the conservation measures could provide beneficial effects
 20 to recreation by expanding the extent of navigable waterways available to boaters, improving and
 21 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 22 navigation.

23 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 24 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 25 BDCP proponents would implement environmental commitments to include a noise abatement plan
 26 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 27 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 28 available to address construction-related effects on recreational boating by reducing the degree of
 29 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 30 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 31 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 32 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 33 and transportation safety and access conditions of the marina (see additional discussion under
 34 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.10).
 35 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 36 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 37 *Noise*, Section 23.4.3.10).

38 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 39 some habitat restoration and enhancement measures and other conservation measures would limit
 40 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 41 water available to boaters. Temporary effects would also stem from construction, which may limit

1 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 2 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 3 experience by expanding the extent of navigable waterways available to boaters, improving and
 4 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 5 navigation. Because these measures would not be anticipated to result in a substantial long-term
 6 disruption of boating activities, this impact is considered less than significant for the conservation
 7 measures, with the exception of CM18, discussed further below.

8 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 9 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 10 The BDCP proponents would implement environmental commitments to include a noise abatement
 11 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 12 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 13 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 14 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 15 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 16 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 17 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 18 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 19 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.10). Mitigation measures NOI-
 20 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 21 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.10). Implementation of
 22 these measures, as determined applicable to construction of this facility under future site-specific
 23 environmental review, would reduce impacts on recreational boating to less than significant. No
 24 additional mitigation would be required.

25 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 26 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 27 **Transmission Lines and Underground Transmission Lines Where Feasible**

28 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 31 **Sensitive Receptors**

32 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 35 **Material Area Management Plan**

36 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

38 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

39 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 40 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
5 **Result of Implementing Conservation Measures 2–21**

6 **NEPA Effects:** Implementing the conservation components under Alternative 5 would have similar
7 impacts on upland recreation activities as those described for Alternative 1A; however, under this
8 Alternative, only 25,000 acres of tidal habitat would be restored (instead of 65,000 acres under
9 other action alternatives). Implementing the conservation measures could result in an adverse effect
10 on recreation opportunities by reducing the extent of upland recreation sites and activities. Once
11 implemented, the conservation measures could adversely affect recreation by reducing the extent of
12 upland areas suitable for hiking, nature photography, or other similar activity. However,
13 environmental commitments would reduce these effects, and implementation of the measures
14 would also restore or enhance new potential sites for upland recreation thereby improving the
15 quality recreational opportunities. CM17–CM21 involve enforcement, management, or other
16 individual, localized project components that would not affect upland recreation opportunities.
17 CM17 is an enforcement funding mechanism and would not result in a physical change to upland
18 areas; construction under CM18, CM19, or CM21 would not affect existing upland recreation areas;
19 and CM20 is an enforcement action primarily located at boat launches and would not affect upland
20 recreation areas and related opportunities. These measures are not discussed further in this
21 analysis.

22 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
23 conservation measures would temporarily limit opportunities for upland recreational activities
24 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
25 construction activities would also temporarily compromise the quality of upland recreation in and
26 around these areas. Additionally, it is possible that current areas of upland recreation would be
27 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
28 activities. These impacts on upland recreational opportunities would be considered less than
29 significant because the BDCP would include environmental commitments that would require BDCP
30 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
31 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
32 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
33 upland recreation and the measure would improve the quality of existing recreational opportunities
34 adjacent to areas modified by the conservation measures. These measures would not be anticipated
35 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
36 considered less than significant.

37 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
38 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
39 **Addressing Recreation Resources**

40 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
41 Alternative 5 would generally have the same potential for incompatibilities with one or more plans
42 and policies related to protecting recreation opportunities in the study area as described for
43 Alternative 1A, Impact AES-12. The primary differences under Alternative 5 are that only Intake 1

1 would be constructed and the Byron Tract Forebay would be 200 acres instead of 600 acres. As
 2 described under Alternative 1A, there would be potential for the alternative to be incompatible with
 3 plans and policies related to protecting and promoting recreation opportunities in the study area
 4 (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992, *Delta Protection*
 5 *Commission Land Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan,*
 6 *Brannan Island and Franks Tract State Recreation Areas General Plan*). In addition, with the
 7 exception of Solano County, the alternative may be incompatible with county general plan policies
 8 that protect recreation resources in the study area.

9 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 10 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 11 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 12 the alternative with relevant plans and polices.

13 **15.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and** 14 **Intakes 1–5 (15,000 cfs; Operational Scenario D)**

15 For the purposes of assessment of effects on recreation, Alternative 6A is the same as Alternative 1A,
 16 with the following exceptions.

- 17 • Alternative 6A utilizes isolated conveyance.
- 18 • Alternative 6A has a different operational scenario (scenario D).

19 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
 20 Alternative 6A. No recreation sites fall within the construction footprint (Mapbook Figure 15-1).
 21 Specific effects on recreation areas or sites are discussed under Alternative 1A.

22 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private** 23 **Commercial Recreation Facility Available for Public Access as a Result of the Location of** 24 **Proposed Water Conveyance Facilities**

25 **NEPA Effects:** The effects of permanent displacement of existing recreational facilities as a result of
 26 the location of the water conveyance facilities would be the same as those described under
 27 Alternative 1A, Impact REC-1. Proposed placement of the Alternative 6A water conveyance facilities
 28 would not fall within the designated boundaries or conflict with any existing public use recreation
 29 site and would not result in the permanent disruption or reduction of any well-established
 30 recreation activity or site, including parks, marinas, or other designated areas. Therefore, there
 31 would be no adverse effects. Effects on recreation related to construction of the water conveyance
 32 facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*,
 33 Section 17.3.3.11, and Chapter 23, *Noise*, Section 23.4.3.11, for additional discussion of these topics.

34 **CEQA Conclusion:** The alternative would not locate alternative facilities that would result in the
 35 permanent displacement of any well-established public use or private commercial recreation facility
 36 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 37 required.

1 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 2 **as a Result of Constructing the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** The temporary conflicts between recreational opportunities and the construction of
 4 conveyance facilities under Alternative 6A would be the same as those described under Alternative
 5 1A, Impact REC-2. Construction of Alternative 6A intakes and water conveyance facilities would
 6 result in temporary effects related to disruption of well-established recreational opportunities and
 7 experiences in the study area during construction. Indirect effects on recreation experience may
 8 occur as a result of impaired access, construction noise, or negative visual effects associated with
 9 construction.

10 **Other Recreation Opportunities**

11 *On-Water Recreation*

12 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
 13 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
 14 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
 15 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
 16 outside of the impact area for noise, the overall recreation experience upstream or downstream of
 17 these sites may fall within the noise impact area and could experience diminished recreation
 18 opportunities because of the elevated noise levels as well as visual setting disruptions over the
 19 course of intake installation. Overall, construction activities associated with the proposed water
 20 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
 21 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
 22 further limited primarily to June 1 through October 31 each year. Although dewatering would take
 23 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
 24 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
 25 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
 26 recreationists to experience a changed recreation setting.

27 *Campgrounds*

28 Nighttime construction activities would require the use of bright lights that would negatively affect
 29 nighttime views of and from the work area. This would affect any overnight camping at the
 30 recreation sites and areas discussed above, although day use areas that close at sunset would not be
 31 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
 32 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.11,
 33 another nighttime effect on recreation would be construction noise levels that could adversely affect
 34 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
 35 construction could be infrequent and intermittent, but would adversely affect camping sites.
 36 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
 37 NOI-1b would be available to address these effects.

38 **Summary**

39 Overall, construction may occur year-round and last up from 1 to 5 years at individual construction
 40 sites near recreation sites or areas and in-river construction activities would be primarily limited to
 41 June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
 42 12.3.3.11, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.11, Chapter 19, *Transportation*,

1 Section 19.3.3.11, and Chapter 23, *Noise*, Section 23.4.3.11, for additional detail related to
2 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
3 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
4 sites or areas within the construction impact area.

5 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
6 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
7 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
8 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
9 measures, environmental commitments, and conservation measures would provide several benefits
10 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
11 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
12 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
13 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
14 degradation associated with accidental spills, runoff and sedimentation, and dust could have
15 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
16 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
17 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
18 crane, would be implemented by the BDCP proponents where determined necessary for all covered
19 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
20 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
21 *Commitments*, DWR would implement an environmental commitment that would dispose of and
22 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
23 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
24 of the action alternatives, implementation of CM3 and CM11 will result in protection and
25 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
26 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
27 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
28 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
29 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
30 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
31 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
32 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
33 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
34 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
35 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
36 bicycling, equestrian use, hunting, fishing, and boating.

37 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.11, identifies a number of mitigation
38 measures that would be available to address construction-related visual effects on sensitive
39 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
40 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
41 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
42 addition, the chapter identifies measures to address longer term visual effects associated with
43 changes to the landscape/visual setting from construction and the presence of new water
44 conveyance features. These include developing and implementing a spoil/borrow and RTM area
45 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
46 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),

1 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
2 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
3 would also make a commitment to enhance the visual character of the area by creating new wildlife
4 viewing sites and enhancing interest in the construction site by constructing viewing areas and
5 displaying information about the project, which may attract people who may use the recreation
6 facilities to the construction site as part of the visit.

7 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
8 proponents will work with the California Department of Parks and Recreation to help insure the
9 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
10 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
11 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
12 helping to fund or construct elements of the American Discovery Trail and the potential conversion
13 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
14 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
15 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
16 proposal. The BDCP project proponents will also work with DPR to determine if some of the
17 constructed elements of CM1 could incorporate elements of the DPR's proposal.

18 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
19 involve preparation of site-specific construction traffic management plans that would address
20 potential public access routes and provide construction information notification to local residents
21 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
22 of access to affected recreation areas as an environmental commitment. Where construction
23 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
24 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
25 construction sites. These would be designed to be safe, pleasant and would integrate with
26 opportunities to view the construction site as an additional area of interest. These physical facilities
27 would be combined with public information, including sidewalk wayfinding information that would
28 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
29 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
30 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
31 congested roadway segments.

32 Chapter 23, *Noise*, Section 23.4.3.11, discusses that construction noise effects could be addressed
33 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
34 implementation of a complaint/response tracking program (NOI-1b), and an environmental
35 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
36 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
37 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
38 viewing the aesthetic amenities of the area.

39 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
40 2 would ensure continued access to existing recreation experiences. The Delta offers many
41 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
42 all of which would continue to be available for recreationists. However, due to the length of time that
43 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
44 related to temporary disruption of existing recreational activities at facilities within the impact area
45 would be adverse.

1 **CEQA Conclusion:** Construction of Alternative 6A intakes and related water conveyance facilities
 2 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 3 years) impacts on well-established recreational opportunities and experiences in the study area
 4 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 5 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 6 commitments, and AMMs would reduce these construction-related impacts by implementing
 7 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 8 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 9 and implement noise reduction and complaint tracking measures. However, the level of impact
 10 would not be reduced to less than significant because even though mitigation measures and
 11 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
 12 and noise conditions that could detract from the recreation experience, due to the dispersed effects
 13 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
 14 of these impacts to less than significant in all instances such that there would be no reduction of
 15 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 16 considered significant and unavoidable. However, the impacts related to construction of the intakes
 17 would be less than significant.

18 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

19 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 20 1A.

21 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
 22 **Disturbance of Nesting Birds**

23 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 24 Alternative 1A, Impact BIO-75.

25 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 26 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 27 **Transmission Lines and Underground Transmission Lines Where Feasible**

28 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 31 **Sensitive Receptors**

32 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 35 **Material Area Management Plan**

36 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
5 **Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
9 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
13 **Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
17 **Residents**

18 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
21 **Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
25 **to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
33 **Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 12 **Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Under this alternative, recreational boat navigation would be affected to the same
 14 extent as described under Alternative 1A, Impact REC-3.

15 Direct effects on boat passage and navigation on the Sacramento River would result from
 16 construction of the intakes. Effects could include reduced access and delays to boat passage and
 17 navigation related to the narrower available river width and temporary speed zones. However, boat
 18 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
 19 Water-based recreational activities such as waterskiing, wakeboarding, or tubing fishing are also
 20 low. In addition, there is sufficient width in the channel to allow boat passage, with minor delays
 21 related to construction speed zones. These effects on boat passage and navigation would be reduced
 22 with the implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents
 23 developing and implementing site-specific construction traffic management plans, including
 24 waterway navigation elements and providing notification of construction activities in waterways.

25 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
 26 and navigation on the Sacramento River and other waterways in the study area, including the
 27 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
 28 channel closures that could impede boat movement and eliminate recreational opportunities. In
 29 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
 30 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
 31 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
 32 implementation of site-specific construction traffic management plans, including specific measures
 33 related to management of barges and stipulations to notify the commercial and leisure boating
 34 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
 35 contribute funds for the construction of new recreation opportunities as well as for the protection of
 36 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
 37 proponents would also assist in funding the expansion of state recreation areas in the Delta as
 38 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
 39 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
 40 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
 41 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,

1 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
2 recreational opportunities within the project area by providing a recreational opportunity
3 downstream/upstream in the same area for the same regional recreational users. These
4 commitments are further described in Appendix 3B, *Environmental Commitments*.

5 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
6 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
7 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
8 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
9 Agriculture Research Service, University of California Cooperative Extension Weed Research and
10 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
11 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
12 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
13 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
14 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
15 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
16 Enhanced ability to control these invasive vegetation would lead to increased recreation
17 opportunities which would compensate for the loss of recreational opportunities within the project
18 area by providing a recreational opportunity downstream/upstream in the same area for the same
19 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
20 *Commitments*.

21 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
22 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
23 proponents would also ensure through various outreach methods that recreationists were aware of
24 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
25 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
26 adverse because of the reduced recreation opportunity and experiences expected to exist near
27 construction activity.

28 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
29 construction of the intakes and temporary barge unloading facilities. Impacts would last
30 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
31 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
32 closures could impede boat movement and eliminate recreational opportunities. In waterways
33 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
34 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
35 development and implementation of site-specific construction traffic management plans, including
36 specific measures related to management of barges and stipulations to notify the commercial and
37 leisure boating communities of proposed barge operations in the waterways. While the
38 environmental commitments would reduce impacts on water-based recreation (water-skiing,
39 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
40 eliminated during construction, these impacts would be long-term and considered significant and
41 unavoidable.

1 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
2 **Plan**

3 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
4 Impact TRANS-1.

5 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
6 **Result of Constructing the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** Effects on recreational fishing under Alternative 6A would be the same as those
8 described under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic*
9 *Resources*, Section 11.3.4.11, Sacramento River and Delta region fish populations would not be
10 affected by changes to localized water quality conditions, underwater noise, fish stranding or other
11 physical disturbances, or reduced habitat areas such that recreational fishing opportunities would
12 be substantially reduced during construction. BDCP environmental commitments to prevent water
13 quality effects include environmental training; implementation of stormwater pollution prevention
14 plans, erosion and sediment control plans, hazardous materials management plans, and spill
15 prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material;
16 and a barge operations plan (Appendix 3B, *Environmental Commitments*). RTM would be removed
17 from RTM storage areas (which represent a substantial portion of the permanent impact areas) and
18 reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat
19 restoration projects, or other beneficial means of reuse identified for the material. Mitigation
20 Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport
21 fish populations from impact pile driving. Although fish populations likely would not be affected to
22 the degree that fishing opportunities would be substantially reduced, construction conditions would
23 introduce noise and visual disturbances that would affect the recreation experience for anglers.

24 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
25 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
26 setting disruptions could distract from the recreation experience including on weekends. However,
27 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
28 specific noise-generating activities near recreation areas would be scheduled to the extent possible
29 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
30 also be available to address construction-related visual effects on sensitive receptors from
31 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
32 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
33 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
34 chapter identifies measures to address longer term visual effects associated with changes to the
35 landscape/visual setting from construction and the presence of new water conveyance features.
36 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
37 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
38 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
39 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
40 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
41 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
42 locations. Additionally anglers could move to other locations along the Sacramento River and
43 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
44 sites further removed from areas affected by construction. This effect would not be adverse.

1 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 2 construction activities would be considered less than significant because the BDCP would include
 3 environmental commitments to prevent water quality effects include environmental training;
 4 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 5 hazardous materials management plans, and spill prevention, containment, and countermeasure
 6 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 7 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 8 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 9 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 10 that there would be no long-term reduction of local fishing opportunities and experiences. This
 11 impact would be less than significant.

12 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

13 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 14 1A.

15 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 16 **of Pile Driving and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 20 **and Other Construction-Related Underwater Noise**

21 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 22 Alternative 1A, Impact AQUA-1.

23 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 24 **Construction**

25 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

26 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response** 27 **Tracking Program**

28 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

29 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 30 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 31 **Transmission Lines and Underground Transmission Lines Where Feasible**

32 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and** 35 **Sensitive Receptors**

36 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 2 **Material Area Management Plan**

3 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 9 **Extent Feasible**

10 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 13 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

14 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 17 **Landscaping Plan**

18 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 19 Alternative 1A, Impact AES-1.

20 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 21 **Result of the Operation of the Proposed Water Conveyance Facilities**

22 **NEPA Effects:** Operation of Alternative 6A may result in changes in entrainment, spawning, rearing
 23 and migration. However, in general, effects on (non-covered) fish species that are popular for
 24 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 25 recreational fishing. While there are some significant impacts to specific non-covered species, as
 26 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11, they are typically limited to
 27 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 28 would not result in a substantial long-term reduction in recreational fishing opportunities

29 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 30 operation of Alternative 6A would be considered less than significant because any impacts to fish
 31 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 32 would not impact the species population of any popular sportfishing species overall.

33 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 34 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 35 **of-Delta Reservoirs**

36 **NEPA Effects:** Operation of Alternative 6A would result in changes in the frequency with which the
 37 end-of-September reservoir levels at study area reservoirs fall below levels identified as important

1 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 2 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 3 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 4 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 5 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

6 **Existing Conditions (CEQA Baseline) Compared to Alternative 6A (2060)**

7 As shown in Table 15-12a and Table 15-12b, under Alternative 6A there would be from 3 to 64
 8 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 9 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 10 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
 11 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
 12 climate change, and operation of the alternative. It is not possible to specifically define the exact
 13 extent of the changes due to implementation of the action alternative using these model simulation
 14 results. Thus, the precise contributions of sea level rise and climate change to the total differences
 15 between Existing Conditions and Alternative 6A cannot be isolated in this comparison. Please refer
 16 to the comparison of the No Action Alternative (2060) to Alternative 6A (2060) for a discussion of
 17 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
 18 Alternative 6A.

19 **No Action Alternative (2060) Compared to Alternative 6A (2060)**

20 The comparison of Alternative 6A (2060) to the No Action Alternative (2060) condition most closely
 21 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 22 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
 23 *Methodology*).

24 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6A would result in changes in
 25 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
 26 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
 27 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
 28 the CASIM II modeling results indicate that reservoir levels under Alternative 6A (2060) operations
 29 would fall below the individual reservoir thresholds less frequently than under No Action
 30 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
 31 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
 32 beneficial effects on recreation opportunities and experiences because there would be fewer years
 33 in which the lake levels fall below the recreation threshold relative to the No Action Alternative
 34 (2060). Operation of Alternative 6A would not adversely affect water-dependent or water-enhanced
 35 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
 36 under operation of Alternative 6A because there would be fewer years in which end-of-September
 37 reservoir levels would fall below the recreation thresholds thus indicating better boating
 38 opportunities, when compared to No Action Alternative (2060) conditions.

39 The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to
 40 the No Action Alternative (2060) condition for which the reservoir level would fall below the
 41 reservoir boating threshold at the end of September for the Dinosaur Point boat launch. However,
 42 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
 43 substantially change relative to the No Action Alternative (2060) conditions (there would be three
 44 additional years). This is a less than 10% change (8 years or less) and would not be considered a

1 substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would
 2 still be available for access to the reservoir, these changes would not be adverse. Shoreline fishing
 3 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
 4 and fishing— would be available. These changes would not be adverse.

5 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 6 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 7 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 8 Alternative 6A (2060) operations would fall below the individual reservoir thresholds less
 9 frequently than under No Action Alternative (2060). Because there would be fewer years in which
 10 the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative
 11 (2060) conditions, these impacts would be considered beneficial impacts on recreation
 12 opportunities and experiences. At San Luis Reservoir, although boating opportunity would be
 13 reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would
 14 not substantially change. The modeled additional three years of exceeding the recreation threshold
 15 attributable to operation of Alternative 6A (2060) relative to the No Action Alternative (2060)
 16 would be less than significant because it is a less than 10% change (8 years or less). This would be a
 17 less-than-significant impact. No mitigation is required. Operation of Alternative 6A would not
 18 substantially affect water-dependent or water-enhanced recreation at these reservoirs.

19 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
 20 **Result of Maintenance of the Proposed Water Conveyance Facilities**

21 **NEPA Effects:** Effects of facility maintenance activities on water-based recreation under Alternative
 22 6A would be similar to those described under Alternative 1A, Impact REC-7, and would result in
 23 periodic temporary but not substantial effects on boat passage and water-based recreational
 24 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
 25 maintenance activities would occur on land and would not affect boat passage and navigation.
 26 Implementation of the environmental commitment to provide notification of construction and
 27 maintenance activities in waterways (Appendix 3B, *Environmental Commitments*) would reduce
 28 these effects. These effects are not considered adverse.

29 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 30 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
 31 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
 32 environmental commitment to provide notification of construction and maintenance activities in
 33 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
 34 Intake maintenance impacts on recreation would be considered less than significant because
 35 impacts, if any, on public access or public use of established recreation facilities would last for 2
 36 years or less. Mitigation is not required.

37 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
 38 **Result of Maintenance of the Proposed Water Conveyance Facilities**

39 **NEPA Effects:** Changes to land-based recreation under Alternative 6A would be the same as those
 40 described for Alternative 1A, Impact REC-8. Maintenance would be short-term and intermittent and
 41 would be conducted within the individual facility right-of-way, which does not include any
 42 recreation facilities or recreation use areas. There would be no adverse effects on recreation
 43 opportunities as a result of maintenance of the proposed water conveyance facilities.

1 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
2 would not result in any changes to land-based recreational opportunities. Therefore, there would be
3 no impact. Mitigation is not required.

4 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
5 **Implementing Conservation Measures 2-21**

6 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
7 components as part of Alternative 6A could have effects related to recreational fishing that are
8 similar in nature to those discussed above for construction, and operation and maintenance of
9 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
10 effects would likely be substantially lower because the nature of the activities associated with
11 implementing the conservation components would be different—less heavy construction equipment
12 would be required and the restoration actions would be implemented over a longer time frame than
13 CM1. Potential effects from implementation of the conservation components would be dispersed
14 over a larger area and would generally involve substantially fewer construction and operation
15 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
16 components would be expected to result in long-term benefits to aquatic species. Additional
17 discussion related to the individual conservation measures is provided below.

18 With regards to fishing opportunities, effects of implementing the conservation components under
19 Alternative 6A would be similar to those described for Alternative 1A. CM2–CM21 would be
20 expected to improve fishing opportunities in the study area although some effect on fishing
21 opportunities could take place during implementation of the conservation measures. Overall,
22 implementing the proposed conservation components would be expected to provide beneficial
23 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

24 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
25 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
26 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
27 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
28 implementation stage, these measures could result in impacts on fishing opportunities by
29 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
30 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
31 onshore fishing opportunities. These impacts would be considered less than significant because the
32 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
33 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
34 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
35 and although these CMs would result in highly localized reductions of predatory species, overall,
36 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
37 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11). Construction of
38 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
39 recreational fishing. The potential impact on covered and non-covered sport fish species from
40 construction activities would be considered less than significant because the BDCP would include
41 environmental commitments to prevent water quality effects include environmental training;
42 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
43 hazardous materials management plans, and spill prevention, containment, and countermeasure
44 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
45 *Environmental Commitments*). In addition, mitigation measures and environmental commitments

1 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
 2 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
 3 implementation of the other conservation components. Because construction of the conservation
 4 measure component facilities would be less intense and of shorter duration than construction of
 5 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 6 the construction-related impacts on recreational fishing associated with the other conservation
 7 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 8 will undergo additional environmental review and permitting which will include identification of
 9 site-specific measures to further protect resources.

10 Environmental commitments that will reduce construction-related impacts on recreation include a
 11 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 12 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 13 REC-3, above). In addition, a number of mitigation measures will address construction-related
 14 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 15 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 16 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 17 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 18 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 19 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 20 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.11). Mitigation measures NOI-
 21 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 22 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.11). Finally, should
 23 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 24 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 25 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11).

26 In the long term, the impact on fishing opportunities would be considered beneficial because the
 27 conservation measures are intended to enhance aquatic habitat and fish abundance.

28 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 29 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 30 **Transmission Lines and Underground Transmission Lines Where Feasible**

31 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 34 **Sensitive Receptors**

35 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 38 **Material Area Management Plan**

39 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 40 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
5 **Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
9 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
13 **Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
17 **Construction**

18 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
21 **to Prevent Light Spill from Truck Headlights toward Residences**

22 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
25 **Plan**

26 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
27 Impact TRANS-1.

28 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
29 **Congested Roadway Segments**

30 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
33 **Agreements to Enhance Capacity of Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 2 **Construction**

3 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 5 **Tracking Program**

6 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

7 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 8 **of Pile Driving and Other Construction-Related Underwater Noise**

9 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 10 Alternative 1A, Impact AQUA-1.

11 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 12 **and Other Construction-Related Underwater Noise**

13 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 14 Alternative 1A, Impact AQUA-1.

15 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 16 **as a Result of Implementing Conservation Measures 2–21**

17 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 18 conservation components under Alternative 6A would be similar to those described for Alternative
 19 1A. Implementing the conservation measures could result in an adverse effect on recreation by
 20 limiting boating by reducing the extent of navigable waterways available to boaters. Once
 21 implemented, the conservation measures could provide beneficial effects to recreation by expanding
 22 the extent of navigable waterways available to boaters, improving and expanding boat launch
 23 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

24 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 25 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 26 BDCP proponents would implement environmental commitments to include a noise abatement plan
 27 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 28 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 29 available to address construction-related effects on recreational boating by reducing the degree of
 30 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 31 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 32 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 33 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 34 and transportation safety and access conditions of the marina (see additional discussion under
 35 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.11).
 36 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 37 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 38 *Noise*, Section 23.4.3.11).

39 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 40 some habitat restoration and enhancement measures and other conservation measures would limit

1 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 2 water available to boaters. Temporary effects would also stem from construction, which may limit
 3 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 4 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 5 experience by expanding the extent of navigable waterways available to boaters, improving and
 6 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 7 navigation. Because these measures would not be anticipated to result in a substantial long-term
 8 disruption of boating activities, this impact is considered less than significant for the conservation
 9 measures, with the exception of CM18, discussed further below.

10 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 11 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 12 The BDCP proponents would implement environmental commitments to include a noise abatement
 13 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 14 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 15 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 16 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 17 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 18 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 19 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 20 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 21 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.11). Mitigation measures NOI-
 22 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 23 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.11). Implementation of
 24 these measures, as determined applicable to construction of this facility under future site-specific
 25 environmental review, would reduce impacts on recreational boating to less than significant. No
 26 additional mitigation would be required.

27 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 28 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 29 **Transmission Lines and Underground Transmission Lines Where Feasible**

30 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 33 **Sensitive Receptors**

34 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 35 Alternative 1A, Impact AES-1.

36 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 37 **Material Area Management Plan**

38 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for
17 Construction**

18 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,
21 to Prevent Light Spill from Truck Headlights toward Residences**

22 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management
25 Plan**

26 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
27 Impact TRANS-1.

28 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on
29 Congested Roadway Segments**

30 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation
33 Agreements to Enhance Capacity of Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 2 **Construction**

3 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 5 **Tracking Program**

6 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

7 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 8 **Result of Implementing Conservation Measures 2–21**

9 **NEPA Effects:** Implementing the conservation components under Alternative 6A would have similar
 10 impacts on upland recreation activities as those described for Alternative 1A, Impact REC-11.
 11 Implementing the conservation measures could result in an adverse effect on recreation
 12 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 13 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 14 suitable for hiking, nature photography, or other similar activity. However, environmental
 15 commitments would reduce these effects, and implementation of the measures would also restore
 16 or enhance new potential sites for upland recreation thereby improving the quality recreational
 17 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 18 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 19 mechanism and would not result in a physical change to upland areas; construction under CM18,
 20 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 21 action primarily located at boat launches and would not affect upland recreation areas and related
 22 opportunities. These measures are not discussed further in this analysis.

23 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 24 conservation measures would temporarily limit opportunities for upland recreational activities
 25 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 26 construction activities would also temporarily compromise the quality of upland recreation in and
 27 around these areas. Additionally, it is possible that current areas of upland recreation would be
 28 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 29 activities. These impacts on upland recreational opportunities would be considered less than
 30 significant because the BDCP would include environmental commitments that would require BDCP
 31 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 32 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 33 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 34 upland recreation and the measure would improve the quality of existing recreational opportunities
 35 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 36 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 37 considered less than significant.

38 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other Conservation**
 39 **Measures with Federal, State, or Local Plans, Policies, or Regulations Addressing Recreation**
 40 **Resources**

41 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 42 Alternative 6A would generally have the same potential for incompatibilities with one or more plans

1 and policies related to protecting and promoting recreation opportunities in the study area as
 2 described for Alternative 1A, Impact AES-12. As described under Alternative 1A, there would be
 3 potential for the alternative to be incompatible with plans and policies related to recreation
 4 opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of
 5 1992, *Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of*
 6 *the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas General Plan*). In
 7 addition, with the exception of Solano County, the alternative may be incompatible with county
 8 general plan policies that protect visual resources in the study area.

9 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 10 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 11 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 12 the alternative with relevant plans and polices.

13 **15.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and** 14 **Intakes 1–5 (15,000 cfs; Operational Scenario D)**

15 For the purposes of assessment of effects on recreation, Alternative 6B is the same as Alternative 1B,
 16 with the following exceptions.

- 17 • Alternative 6B utilizes isolated conveyance.
- 18 • Alternative 6B has a different operational scenario (scenario D).

19 Table 15-13 under Alternative 1B lists the recreation sites and areas that may be affected by
 20 Alternative 6B (Mapbook Figure 15-1). Specific effects on recreation areas or sites are discussed
 21 under Alternative 1B.

22 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private** 23 **Commercial Recreation Facility Available for Public Access as a Result of the Location of** 24 **Proposed Water Conveyance Facilities**

25 **NEPA Effects:** The effects of permanent displacement of existing recreational facilities as a result of
 26 the location of the water conveyance facilities under Alternative 6B would be the same as those
 27 described under Alternative 1B, Impact REC-1. Proposed placement of the Alternative 6B water
 28 conveyance facilities may fall within the boundaries of Stone Lakes NWR, Cosumnes River Preserve,
 29 and White Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure 15-2); however,
 30 permanent placement of these facilities would not result in long-term disruption or reduction of any
 31 well-established recreation activity or site, including parks, marinas, or other designated areas.
 32 Therefore, there would be no adverse effects. Effects on recreation related to construction of the
 33 water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and*
 34 *Visual Resources*, Section 17.3.3.12, and Chapter 23, *Noise*, Section 23.4.3.12, for additional
 35 discussion of these topics.

36 **CEQA Conclusion:** Alternative 6B would not locate alternative facilities that would result in the
 37 permanent displacement of any well-established public use or private commercial recreation facility
 38 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 39 required.

1 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
2 **as a Result of Constructing the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** The temporary conflicts between recreational opportunities and the construction of
4 conveyance facilities would be the same as those described under Alternative 1B, Impact REC-2.
5 Construction of Alternative 6B intakes and proposed water conveyance facilities would result in
6 temporary short-term and long-term effects related to disruption of well-established recreational
7 opportunities and experiences in the study area. Indirect effects on recreation experiences may
8 occur as a result of impaired access, construction noise, or negative visual effects associated with
9 construction.

10 **Other Recreation Opportunities**

11 *On-Water Recreation*

12 Cliff's Marina is upstream of Intake 1 construction area. Similarly, Lazy M Marina and Rivers End
13 Marina & Boat Storage sites are not within the construction impact area for the Byron Tract Forebay
14 and related facilities near Clifton Court Forebay. Although these facilities and other marinas or
15 fishing sites fall outside of the impact area for noise, the overall recreation experience upstream or
16 downstream of these sites may fall within the noise impact area and could experience diminished
17 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
18 over the course of intake installation. Overall, construction activities associated with the proposed
19 water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work
20 would primarily occur Monday through Friday for up to 24 hours per day. In-river construction
21 would be further limited primarily to June 1 through October 31 each year. Although dewatering
22 would take place 7 days a week for 24 hours per day, it would not result in adverse noise effects.
23 Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the
24 vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish,
25 causing recreationists to experience a changed recreation setting.

26 *Campgrounds*

27 Nighttime construction activities would require the use of bright lights that would negatively affect
28 nighttime views of and from the work area. This would affect any overnight camping at the
29 recreation sites and areas discussed above, although day use areas that close at sunset would not be
30 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
31 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.12,
32 another nighttime effect on recreation would be construction noise levels that could adversely affect
33 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
34 construction could be infrequent and intermittent, but would adversely affect camping sites.
35 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
36 NOI-1b would be available to address these effects.

37 **Summary**

38 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
39 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
40 through October 31 each year. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section
41 12.3.3.2, construction could have an adverse effect on waterfowl if they were present in or adjacent
42 to work areas and could result in destruction of nests or disturbance of nesting and foraging

1 behaviors. These effects could indirectly affect recreational wildlife viewing and hunting in the study
2 area; however, mitigation measures, environmental commitments, and conservation measures
3 would provide several benefits to waterfowl habitat, which would result in increased recreational
4 opportunities. Mitigation Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid*
5 *disturbance of nesting birds*, would be available to address these effects. In addition, in areas near
6 greater sandhill crane habitat, construction-related disturbances (noise and visual), installation of
7 transmission lines, or habitat degradation associated with accidental spills, runoff and
8 sedimentation, and dust could have adverse effects on sandhill cranes and related recreational
9 viewing opportunities. These effects on sandhill crane would be minimized with BDCP AMM20
10 (Greater Sandhill Crane) and BDCP AMM31 (Noise Abatement). These measures, designed to avoid
11 and minimize effects on greater sandhill crane, would be implemented by the BDCP proponents
12 where determined necessary for all covered activities throughout the permit term. These and other
13 BDCP AMMs are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*. Also, as
14 discussed in Appendix 3B, *Environmental Commitments*, DWR would implement an environmental
15 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
16 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
17 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
18 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
19 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
20 suitable habitat conditions for covered species and native biodiversity, including benefiting
21 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
22 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
23 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
24 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
25 community types (see BDCP Chapter 4, Section 4.2.3.9.2 *Recreation*). The reserve system would
26 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
27 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
28 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
29 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

30 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.12, identifies a number of mitigation
31 measures that would be available to address construction-related visual effects on sensitive
32 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
33 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
34 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
35 addition, the chapter identifies measures to address longer term visual effects associated with
36 changes to the landscape/visual setting from construction and the presence of new water
37 conveyance features. These include developing and implementing a spoil/borrow and RTM area
38 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
39 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
40 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
41 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
42 would also make a commitment to enhance the visual character of the area by creating new wildlife
43 viewing sites and enhancing interest in the construction site by constructing viewing areas and
44 displaying information about the project, which may attract people who may use the recreation
45 facilities to the construction site as part of the visit.

1 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
2 proponents will work with the California Department of Parks and Recreation to help insure the
3 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
4 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
5 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
6 helping to fund or construct elements of the American Discovery Trail and the potential conversion
7 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
8 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
9 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
10 proposal. The BDCP project proponents will also work with DPR to determine if some of the
11 constructed elements of CM1 could incorporate elements of the DPR's proposal.

12 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
13 involve preparation of site-specific construction traffic management plans that would address
14 potential public access routes and provide construction information notification to local residents
15 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
16 of access to affected recreation areas as an environmental commitment. Where construction
17 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
18 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
19 construction sites. These would be designed to be safe, pleasant and would integrate with
20 opportunities to view the construction site as an additional area of interest. These physical facilities
21 would be combined with public information, including sidewalk wayfinding information that would
22 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
23 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
24 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
25 congested roadway segments.

26 Chapter 23, *Noise*, Section 23.4.3.12, discusses that construction noise effects could be addressed
27 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
28 implementation of a complaint/response tracking program (NOI-1b), and an environmental
29 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
30 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
31 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
32 viewing the aesthetic amenities of the area.

33 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
34 2 would ensure continued access to existing recreation experiences. The Delta offers many
35 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
36 all of which would continue to be available for recreationists. However, due to the length of time that
37 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
38 related to temporary disruption of existing recreational activities at facilities within the impact area
39 would be adverse.

40 **CEQA Conclusion:** Construction of the Alternative 6B intakes and related water conveyance facilities
41 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
42 years) impacts on well-established recreational opportunities and experiences in the study area
43 because of access, noise, and visual setting disruptions that could result in loss of public use. These
44 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
45 commitments, and AMMs would reduce these construction-related impacts by implementing

1 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
2 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
3 and implement noise reduction and complaint tracking measures. However, the level of impact
4 would not be reduced to less than significant because even though mitigation measures and
5 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
6 and noise conditions that could detract from the recreation experience, due to the dispersed effects
7 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
8 of these impacts to less than significant in all instances such that there would be no reduction of
9 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
10 considered significant and unavoidable. However, the impacts related to construction of the intakes
11 would be less than significant.

12 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

13 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
14 1A.

15 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
16 **Disturbance of Nesting Birds**

17 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
18 Alternative 1A, Impact BIO-75.

19 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
20 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
21 **Transmission Lines and Underground Transmission Lines Where Feasible**

22 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
25 **Sensitive Receptors**

26 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
29 **Material Area Management Plan**

30 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

33 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
14 **Residents**

15 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
18 **Construction**

19 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
22 **to Prevent Light Spill from Truck Headlights toward Residences**

23 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-4.

25 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
26 **Plan**

27 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
30 **Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 12 **Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Under this Alternative, recreational boat navigation would be affected to the same
 14 extent as under Alternative 1B, Impact REC-3. Changes to boat passage and navigation on the
 15 Sacramento River in the vicinity of the intakes, barge unloading facilities and the siphons would
 16 result in adverse direct and indirect effects on recreational navigation in the affected waterways.
 17 Direct effects would result from the creation of obstructions to boat passage and associated boat
 18 traffic delays and temporary channel closures that could impede boat movement. Changes to boat
 19 passage would also result in effects on recreational navigation and water-based recreation activities
 20 such as wakeboarding, waterskiing, and tubing. Although there may be short delays in boat passage,
 21 access to the affected waterways would be maintained. The sloughs where siphons would cross do
 22 not support large boat traffic volumes and construction activities would not result in substantial
 23 adverse effects. However, because boat passage and navigation would be disrupted, effects are
 24 considered adverse. Mitigation Measure TRANS-1a would be available to reduce effects to marine
 25 navigation by development and implementation of site-specific construction traffic management
 26 plans, including specific measures related to management of barges and stipulations to notify the
 27 commercial and leisure boating communities of proposed barge operations in the waterways.
 28 Additionally, BDCP proponents would contribute funds for the construction of new recreation
 29 opportunities as well as for the protection of existing recreation opportunities as outlined in
 30 Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the
 31 expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the
 32 Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State
 33 Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new
 34 State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds
 35 will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This
 36 commitment serves to compensate for the loss of recreational opportunities within the project area
 37 by providing a recreational opportunity downstream/upstream in the same area for the same
 38 regional recreational users. These commitments are further described in Appendix 3B,
 39 *Environmental Commitments*.

40 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
 41 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
 42 throughout the Plan Area. However, the BDCP proponents would also commit to partner with

1 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
 2 Agriculture Research Service, University of California Cooperative Extension Weed Research and
 3 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
 4 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
 5 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
 6 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
 7 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
 8 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
 9 Enhanced ability to control these invasive vegetation would lead to increased recreation
 10 opportunities which would compensate for the loss of recreational opportunities within the project
 11 area by providing a recreational opportunity downstream/upstream in the same area for the same
 12 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
 13 *Commitments*.

14 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
 15 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
 16 proponents would also ensure through various outreach methods that recreationists were aware of
 17 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
 18 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be
 19 considered adverse because of the reduced recreation opportunity and experiences expected to
 20 exist near construction activity.

21 **CEQA Conclusion:** Alternative 1B would result in significant impacts on boat passage and navigation
 22 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
 23 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
 24 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
 25 would also result in temporary impacts on wakeboarding, waterskiing and tubing because of
 26 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
 27 marine navigation by development and implementation of site-specific construction traffic
 28 management plans, including specific measures related to management of barges and stipulations to
 29 notify the commercial and leisure boating communities of proposed barge operations in the
 30 waterways. While the environmental commitments would reduce impacts on water-based
 31 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
 32 opportunities for those eliminated during construction, these impacts would be long-term and
 33 considered significant and unavoidable.

34 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management** 35 **Plan**

36 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 37 Impact TRANS-1.

38 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a** 39 **Result of Constructing the Proposed Water Conveyance Facilities**

40 **NEPA Effects:** Effects on recreational fishing under Alternative 6B would be similar to those
 41 described under Alternative 1A, Impact REC-4.

42 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12, Sacramento River and
 43 Delta region fish populations would not be affected by changes to localized water quality conditions,

1 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
2 recreational fishing opportunities would be substantially reduced during construction. BDCP
3 environmental commitments to prevent water quality effects include environmental training;
4 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
5 hazardous materials management plans, and spill prevention, containment, and countermeasure
6 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
7 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
8 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
9 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
10 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
11 avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish
12 populations likely would not be affected to the degree that fishing opportunities would be
13 substantially reduced, construction conditions would introduce noise and visual disturbances that
14 would affect the recreation experience for anglers.

15 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
16 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
17 setting disruptions could distract from the recreation experience including on weekends. However,
18 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
19 specific noise-generating activities near recreation areas would be scheduled to the extent possible
20 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
21 also be available to address construction-related visual effects on sensitive receptors from
22 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
23 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
24 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
25 chapter identifies measures to address longer term visual effects associated with changes to the
26 landscape/visual setting from construction and the presence of new water conveyance features.
27 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
28 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
29 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
30 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
31 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
32 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
33 locations. Additionally, anglers could move to other locations along the Sacramento River and
34 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
35 sites further removed from areas affected by construction. This effect would not be adverse.

36 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
37 construction activities would be considered less than significant because the BDCP would include
38 environmental commitments to prevent water quality effects include environmental training;
39 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
40 hazardous materials management plans, and spill prevention, containment, and countermeasure
41 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
42 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
43 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
44 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
45 that there would be no long-term reduction of local fishing opportunities and experiences. This
46 impact would be less than significant.

1 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

2 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
3 1A.

4 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
5 of Pile Driving and Other Construction-Related Underwater Noise**

6 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
7 Alternative 1A, Impact AQUA-1.

8 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving
9 and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
11 Alternative 1A, Impact AQUA-1.

12 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
13 Construction**

14 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response
16 Tracking Program**

17 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

18 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to
19 Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New
20 Transmission Lines and Underground Transmission Lines Where Feasible**

21 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and
24 Sensitive Receptors**

25 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel
28 Material Area Management Plan**

29 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

32 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
33 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-1.

13 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 14 **Result of the Operation of the Proposed Water Conveyance Facilities**

15 **NEPA Effects:** Operation of Alternative 6B may result in changes in entrainment, spawning, rearing
 16 and migration. However, in general, effects on (non-covered) fish species that are popular for
 17 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 18 recreational fishing. While there are some significant impacts to specific non-covered species, as
 19 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12, they are typically limited to
 20 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 21 would not result in a substantial long-term reduction in recreational fishing opportunities

22 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 23 operation of Alternative 6B would be considered less than significant because any impacts to fish
 24 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 25 would not impact the species population of any popular sportfishing species overall.

26 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 27 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 28 **of-Delta Reservoirs**

29 **NEPA Effects:** Operation of Alternative 6B would be the same as Alternative 6A and would primarily
 30 result in small changes in the frequency with which the end of September reservoir levels at Trinity
 31 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels
 32 identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir show
 33 greater difference when compared to the no action conditions than projected for the other
 34 reservoirs. See Table 15-12a and Table 15-12b. Also see Chapter 3, *Description of Alternatives*,
 35 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *Modeling*
 36 *Methodology*, for an explanation of the CALSIM model and assumptions.

37 **Existing Conditions (CEQA Baseline) Compared to Alternative 6B (2060)**

38 As shown in Table 15-12a and Table 15-12b, under Alternative 6B there would be from 3 to 64
 39 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing

1 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 2 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
 3 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
 4 climate change, and operation of the alternative. It is not possible to specifically define the exact
 5 extent of the changes due to implementation of the action alternative using these model simulation
 6 results. Thus, the precise contributions of sea level rise and climate change to the total differences
 7 between Existing Conditions and Alternative 6B cannot be isolated in this comparison. Please refer
 8 to the comparison of the No Action Alternative (2060) to Alternative 6B (2060) for a discussion of
 9 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
 10 Alternative 6B.

11 **No Action Alternative (LLT-2060) Compared to Alternative 6B (2060)**

12 The comparison of Alternative 6B (2060) to the No Action Alternative (2060) condition most closely
 13 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 14 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
 15 *Methodology*).

16 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6B would result in changes in
 17 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
 18 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
 19 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
 20 the CASIM II modeling results indicate that reservoir levels under Alternative 6B (2060) operations
 21 would fall below the individual reservoir thresholds less frequently than under No Action
 22 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
 23 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
 24 beneficial effects on recreation opportunities and experiences because there would be fewer years
 25 in which the lake levels fall below the recreation threshold relative to the No Action Alternative
 26 (2060). Operation of Alternative 6B would not adversely affect water-dependent or water-enhanced
 27 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
 28 under operation of Alternative 6B because there would be fewer years in which end-of-September
 29 reservoir levels would fall below the recreation thresholds thus indicating better boating
 30 opportunities, when compared to No Action Alternative (2060) conditions.

31 The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to
 32 the No Action Alternative (2060) condition for which the reservoir level would fall below the
 33 reservoir boating threshold at the end of September for the Dinosaur Point boat launch. However,
 34 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
 35 substantially change relative to the No Action Alternative (2060) conditions (there would be three
 36 additional years). This is a less than 10% change (8 years or less) and would not be considered a
 37 substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would
 38 still be available for access to the reservoir, these changes would not be adverse. Shoreline fishing
 39 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
 40 and fishing— would be available. These changes would not be adverse.

41 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 42 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 43 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 44 Alternative 6B (2060) operations would fall below the individual reservoir thresholds less

1 frequently than under No Action Alternative (2060). Because there would be fewer years in which
2 the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative
3 (2060) conditions, these impacts would be considered beneficial impacts on recreation
4 opportunities and experiences. At San Luis Reservoir, although boating opportunity would be
5 reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would
6 not substantially change. The modeled additional three years of exceeding the recreation threshold
7 attributable to operation of Alternative 6B (2060) relative to the No Action Alternative (2060)
8 would be less than significant because it is a less than 10% change (8 years or less). This would be a
9 less-than-significant impact. No mitigation is required. Operation of Alternative 6B would not
10 substantially affect water-dependent or water-enhanced recreation at these reservoirs.

11 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 12 **Result of Maintenance of the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Effects of facility maintenance activities on water-based recreation under Alternative
14 6B would be similar to those described under Alternative 1A, Impact REC-7, and would result in
15 periodic temporary but not substantial effects on boat passage and water-based recreational
16 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
17 maintenance activities would occur on land and would not affect boat passage and navigation.
18 Implementation of the environmental commitment to provide notification of construction and
19 maintenance activities in waterways (Appendix 3B, *Environmental Commitments*) would reduce
20 these effects. These effects are not considered adverse.

21 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
22 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
23 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
24 environmental commitment to provide notification of construction and maintenance activities in
25 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
26 Intake maintenance impacts on recreation would be considered less than significant because
27 impacts, if any, on public access or public use of established recreation facilities would last for 2
28 years or less. Mitigation is not required.

29 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a** 30 **Result of Maintenance of the Proposed Water Conveyance Facilities**

31 **NEPA Effects:** Changes to land-based recreation under Alternative 6B would be the same as those
32 described for Alternative 1B, Impact REC-8 and would not affect recreation opportunities. The right-
33 of-way under Alternative 6B includes the Stone Lakes NWR, White Slough Wildlife Area, and
34 Cosumnes River Preserve; however, the lands in the Stone Lakes NWR and Cosumnes River Preserve
35 in the right-of-way are not used for recreation, so there would be no effects on recreation
36 opportunities. In the White Slough Wildlife Area (Pond 6) there would be a bridge right-of-way;
37 facility maintenance activities would be restricted to roadway maintenance and would not affect
38 recreation opportunities in the wildlife area. Maintenance would be short-term and intermittent and
39 there would be no long-term change to recreation opportunities as a result of maintenance of
40 conveyance facilities. There would be no adverse effects.

41 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
42 would not result in any changes to land-based recreational opportunities. Therefore, there would be
43 no impact. Mitigation is not required.

1 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
2 **Implementing Conservation Measures 2-21**

3 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
4 components as part of Alternative 6B could have effects related to recreational fishing that are
5 similar in nature to those discussed above for construction, and operation and maintenance of
6 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
7 effects would likely be substantially lower because the nature of the activities associated with
8 implementing the conservation components would be different—less heavy construction equipment
9 would be required and the restoration actions would be implemented over a longer time frame than
10 CM1. Potential effects from implementation of the conservation components would be dispersed
11 over a larger area and would generally involve substantially fewer construction and operation
12 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
13 components would be expected to result in long-term benefits to aquatic species. Additional
14 discussion related to the individual conservation measures is provided below.

15 With regards to fishing opportunities, effects of implementing the conservation components under
16 Alternative 6B would be similar to those described for Alternative 1B, Impact REC-9. CM2–CM21
17 would be expected to improve fishing opportunities in the study area although some effect on
18 fishing opportunities could take place during implementation of the conservation measures. Overall,
19 implementing the proposed conservation components would be expected to provide beneficial
20 effects on aquatic habitat and fish abundance thereby improving fishing opportunities

21 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
22 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
23 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
24 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
25 implementation stage, these measures could result in impacts on fishing opportunities by
26 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
27 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
28 onshore fishing opportunities. These impacts would be considered less than significant because the
29 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
30 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
31 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
32 and although these CMs would result in highly localized reductions of predatory species, overall,
33 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
34 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12). Construction of
35 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
36 recreational fishing. The potential impact on covered and non-covered sport fish species from
37 construction activities would be considered less than significant because the BDCP would include
38 environmental commitments to prevent water quality effects include environmental training;
39 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
40 hazardous materials management plans, and spill prevention, containment, and countermeasure
41 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
42 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
43 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
44 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
45 implementation of the other conservation components. Because construction of the conservation
46 measure component facilities would be less intense and of shorter duration than construction of

1 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 2 the construction-related impacts on recreational fishing associated with the other conservation
 3 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 4 will undergo additional environmental review and permitting which will include identification of
 5 site-specific measures to further protect resources.

6 Environmental commitments that will reduce construction-related impacts on recreation include a
 7 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 8 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 9 REC-3, above). In addition, a number of mitigation measures will address construction-related
 10 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 11 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 12 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 13 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 14 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 15 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 16 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.12). Mitigation measures NOI-
 17 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 18 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.12). Finally, should
 19 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 20 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 21 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12).

22 In the long term, the impact on fishing opportunities would be considered beneficial because the
 23 conservation measures are intended to enhance aquatic habitat and fish abundance.

24 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 25 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 26 **Transmission Lines and Underground Transmission Lines Where Feasible**

27 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 30 **Sensitive Receptors**

31 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 34 **Material Area Management Plan**

35 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

38 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 5 **of Pile Driving and Other Construction-Related Underwater Noise**

6 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 7 Alternative 1A, Impact AQUA-1.

8 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 9 **and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 11 Alternative 1A, Impact AQUA-1.

12 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 13 **as a Result of Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 15 conservation components under Alternative 6B would be similar to those described for Alternative
 16 1B. Implementing the conservation measures could result in an adverse effect on recreation by
 17 limiting boating by reducing the extent of navigable waterways available to boaters. Once
 18 implemented, the conservation measures could provide beneficial effects to recreation by expanding
 19 the extent of navigable waterways available to boaters, improving and expanding boat launch
 20 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

21 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 22 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 23 BDCP proponents would implement environmental commitments to include a noise abatement plan
 24 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 25 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 26 available to address construction-related effects on recreational boating by reducing the degree of
 27 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 28 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 29 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 30 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 31 and transportation safety and access conditions of the marina (see additional discussion under
 32 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.12).
 33 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 34 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 35 *Noise*, Section 23.4.3.12).

36 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 37 some habitat restoration and enhancement measures and other conservation measures would limit
 38 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 39 water available to boaters. Temporary effects would also stem from construction, which may limit
 40 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 41 implementation. However, BDCP conservation measures would also lead to an enhanced boating

1 experience by expanding the extent of navigable waterways available to boaters, improving and
 2 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 3 navigation. Because these measures would not be anticipated to result in a substantial long-term
 4 disruption of boating activities, this impact is considered less than significant for the conservation
 5 measures, with the exception of CM18, discussed further below.

6 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 7 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 8 The BDCP proponents would implement environmental commitments to include a noise abatement
 9 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 10 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 11 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 12 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 13 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 14 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 15 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 16 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 17 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.12). Mitigation measures NOI-
 18 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 19 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.12). Implementation of
 20 these measures, as determined applicable to construction of this facility under future site-specific
 21 environmental review, would reduce impacts on recreational boating to less than significant. No
 22 additional mitigation would be required.

23 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 24 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 25 **Transmission Lines and Underground Transmission Lines Where Feasible**

26 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 29 **Sensitive Receptors**

30 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 33 **Material Area Management Plan**

34 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 35 Alternative 1A, Impact AES-1.

36 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

37 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 38 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 5 **Result of Implementing Conservation Measures 2–21**

6 **NEPA Effects:** Implementing the conservation components under Alternative 6B would have similar
 7 impacts on upland recreation activities as those described for Alternative 1B. Implementing the
 8 conservation measures could result in an adverse effect on recreation opportunities by reducing the
 9 extent of upland recreation sites and activities. Once implemented, the conservation measures could
 10 adversely affect recreation by reducing the extent of upland areas suitable for hiking, nature
 11 photography, or other similar activity. However, environmental commitments would reduce these
 12 effects, and implementation of the measures would also restore or enhance new potential sites for
 13 upland recreation thereby improving the quality recreational opportunities. CM17–CM21 involve
 14 enforcement, management, or other individual, localized project components that would not affect
 15 upland recreation opportunities. CM17 is an enforcement funding mechanism and would not result
 16 in a physical change to upland areas; construction under CM18, CM19 or CM21 would not affect
 17 existing upland recreation areas; and CM20 is an enforcement action primarily located at boat
 18 launches and would not affect upland recreation areas and related opportunities. These measures
 19 are not discussed further in this analysis.

20 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 21 conservation measures would temporarily limit opportunities for upland recreational activities
 22 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 23 construction activities would also temporarily compromise the quality of upland recreation in and
 24 around these areas. Additionally, it is possible that current areas of upland recreation would be
 25 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 26 activities. These impacts on upland recreational opportunities would be considered less than
 27 significant because the BDCP would include environmental commitments that would require BDCP
 28 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 29 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 30 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 31 upland recreation and the measure would improve the quality of existing recreational opportunities
 32 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 33 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 34 considered less than significant.

35 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 36 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 37 **Addressing Recreation Resources**

38 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 39 Alternative 6B would generally have the same potential for incompatibilities with one or more plans
 40 and policies related to preserving the visual quality and character of the Delta as described for
 41 Alternative 1B, Impact AES-12. As described under Alternative 1B, there would be potential for the
 42 alternative to be incompatible with plans and policies related to protecting and promoting
 43 recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta

1 Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan for the*
 2 *Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas*
 3 *General Plan*). In addition, with the exception of Solano County, the alternative may be incompatible
 4 with county general plan policies that protect recreation opportunities in the study area.

5 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 6 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 7 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 8 the alternative with relevant plans and policies.

9 **15.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and** 10 **Intakes W1–W5 (15,000 cfs; Operational Scenario D)**

11 For the purposes of assessment of effects on recreation, Alternative 6C is the same as Alternative 1C,
 12 with the following exceptions.

- 13 • Alternative 6C utilizes isolated conveyance.
- 14 • Alternative 6C has a different operational scenario (scenario D).

15 Table 15-14 under Alternative 1C lists the recreation sites that may be affected by Alternative 2C.

16 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private** 17 **Commercial Recreation Facility Available for Public Access as a Result of the Location of** 18 **Proposed Water Conveyance Facilities**

19 **NEPA Effects:** Alternative 6C includes locating a tunnel, ventilation/access shaft and permanent
 20 access road to the tunnel shaft on Twitchell Island, and would have the same effects as discussed
 21 under Alternative 1C, Impact REC-1 Post-construction, no recreational facilities would be
 22 permanently displaced as a result of the location of Alternative 6C water conveyance facilities.
 23 Therefore, there would be no adverse effects. Temporary effects that may occur as a result of
 24 construction are noted under Impact REC-2, below. Also see Chapter 17, *Aesthetics and Visual*
 25 *Resources*, Section 17.3.3.12, and Chapter 23, *Noise*, Section 23.4.3.13, for additional discussion of
 26 these topics.

27 **CEQA Conclusion:** Alternative 6C would not locate alternative facilities that would result in the
 28 permanent displacement of any well-established public use or private commercial recreation facility
 29 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 30 required.

31 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences** 32 **as a Result of Constructing the Proposed Water Conveyance Facilities**

33 **NEPA Effects:** The temporary disruption of recreational opportunities as a result of construction of
 34 conveyance facilities would be the same as those described under Alternative 1C, Impact REC-2.
 35 Construction of Alternative 6C facilities would result in temporary short-term and long-term effects
 36 related to disruption of well-established recreational opportunities and experiences at recreation
 37 sites or areas in the study area. Indirect effects on recreation experiences may occur as a result of
 38 impaired access, construction noise, or negative visual effects associated with construction.

1 **Other Recreation Opportunities**

2 *On-Water Recreation*

3 Cliff's Marina is upstream of Intake W1 construction area and Clarksburg Marina falls between the
 4 construction impact area for Intake 1 and 2. Similarly, Rivers End Marina & Boat Storage is not
 5 within the construction impact area for the Byron Tract Forebay and related facilities near Clifton
 6 Court Forebay. Although these facilities and other marinas or fishing sites fall outside of the impact
 7 area for noise, the overall recreation experience upstream or downstream of these sites may fall
 8 within the noise impact area and could experience diminished recreation opportunities because of
 9 the elevated noise levels as well as visual setting disruptions over the course of intake installation.
 10 Overall, construction activities associated with the proposed water conveyance facilities would
 11 range from 1 year to up to 5 years depending on the site. Work would primarily occur Monday
 12 through Friday for up to 24 hours per day. In-river construction would be further limited primarily
 13 to June 1 through October 31 each year. Although dewatering would take place 7 days a week for 24
 14 hours per day, it would not result in adverse noise effects. Weekday construction would reduce the
 15 amount of fish and other wildlife in recreation areas in the vicinity of the intakes, resulting in
 16 decreased recreation opportunities related to wildlife and fish, causing recreationists to experience
 17 a changed recreation setting.

18 *Campgrounds*

19 Nighttime construction activities would require the use of bright lights that would negatively affect
 20 nighttime views of and from the work area. This would affect any overnight camping at the
 21 recreation sites and areas discussed above, although day use areas that close at sunset would not be
 22 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
 23 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.13,
 24 another nighttime effect on recreation would be construction noise levels that could adversely affect
 25 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
 26 construction could be infrequent and intermittent, but would adversely affect camping sites.
 27 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
 28 NOI-1b would be available to address these effects.

29 **Summary**

30 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
 31 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
 32 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
 33 12.3.3.13, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.13, Chapter 19, *Transportation*,
 34 Section 19.3.3.13, and Chapter 23, *Noise*, Section 23.4.3.13 for additional detail related to
 35 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
 36 to Alternative 1C, Impact REC-2 for detailed discussions of the potential effects at specific recreation
 37 sites or areas within the construction impact area.

38 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
 39 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
 40 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
 41 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
 42 measures, environmental commitments, and conservation measures would provide several benefits
 43 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation

1 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
2 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
3 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
4 degradation associated with accidental spills, runoff and sedimentation, and dust could have
5 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
6 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
7 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
8 crane, would be implemented by the BDCP proponents where determined necessary for all covered
9 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
10 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
11 *Commitments*, DWR would implement an environmental commitment that would dispose of and
12 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
13 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
14 of the action alternatives, implementation of CM3 and CM11 will result in protection and
15 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
16 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
17 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
18 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
19 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
20 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
21 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
22 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
23 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
24 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
25 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
26 bicycling, equestrian use, hunting, fishing, and boating.

27 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.13, identifies a number of mitigation
28 measures that would be available to address construction-related visual effects on sensitive
29 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
30 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
31 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
32 addition, the chapter identifies measures to address longer term visual effects associated with
33 changes to the landscape/visual setting from construction and the presence of new water
34 conveyance features. These include developing and implementing a spoil/borrow and RTM area
35 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
36 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
37 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
38 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
39 would also make a commitment to enhance the visual character of the area by creating new wildlife
40 viewing sites and enhancing interest in the construction site by constructing viewing areas and
41 displaying information about the project, which may attract people who may use the recreation
42 facilities to the construction site as part of the visit.

43 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
44 proponents will work with the California Department of Parks and Recreation to help insure the
45 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
46 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and

1 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
2 helping to fund or construct elements of the American Discovery Trail and the potential conversion
3 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
4 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
5 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
6 proposal. The BDCP project proponents will also work with DPR to determine if some of the
7 constructed elements of CM1 could incorporate elements of the DPR's proposal.

8 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
9 involve preparation of site-specific construction traffic management plans that would address
10 potential public access routes and provide construction information notification to local residents
11 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
12 of access to affected recreation areas as an environmental commitment. Where construction
13 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
14 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
15 construction sites. These would be designed to be safe, pleasant and would integrate with
16 opportunities to view the construction site as an additional area of interest. These physical facilities
17 would be combined with public information, including sidewalk wayfinding information that would
18 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
19 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
20 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
21 congested roadway segments.

22 Chapter 23, *Noise*, Section 23.4.3.13, discusses that construction noise effects could be addressed
23 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
24 implementation of a complaint/response tracking program (NOI-1b), and an environmental
25 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
26 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
27 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
28 viewing the aesthetic amenities of the area.

29 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
30 2 would ensure continued access to existing recreation experiences. The Delta offers many
31 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
32 all of which would continue to be available for recreationists. However, due to the length of time that
33 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
34 related to temporary disruption of existing recreational activities at facilities within the impact area
35 would be adverse.

36 **CEQA Conclusion:** Construction of the Alternative 2C intakes and related water conveyance facilities
37 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
38 years) impacts on well-established recreational opportunities and experiences in the study area
39 because of access, noise, and visual setting disruptions. These impacts would be temporary, but may
40 occur year-round. Mitigation measures, environmental commitments, and AMMs would reduce
41 these construction-related impacts by implementing measures to protect or compensate for effects
42 on wildlife habitat and species; minimize the extent of changes to the visual setting, including
43 nighttime light sources; manage construction-related traffic; and implement noise reduction and
44 complaint tracking measures. However, the level of impact would not be reduced to less than
45 significant because even though mitigation measures and commitments would reduce the impacts

1 on wildlife, visual setting, transportation, and noise conditions that could detract from the
2 recreation experience, due to the dispersed effects on the recreation experience across the Delta, it
3 is not certain the mitigation would reduce the level of these impacts to less than significant in all
4 instances such that there would be no reduction of recreational opportunities or experiences over
5 the entire study area. Therefore, these impacts are considered significant and unavoidable.
6 However, the impacts related to construction of the intakes would be less than significant.

7 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

8 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
9 1A.

10 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
11 **Disturbance of Nesting Birds**

12 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
13 Alternative 1A, Impact BIO-75.

14 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
15 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
16 **Transmission Lines and Underground Transmission Lines Where Feasible**

17 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
18 Alternative 1A, Impact AES-1.

19 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
20 **Sensitive Receptors**

21 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
22 Alternative 1A, Impact AES-1.

23 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
24 **Material Area Management Plan**

25 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

28 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
31 **Extent Feasible**

32 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
33 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
2 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

3 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
6 **Landscaping Plan**

7 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
10 **Residents**

11 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
5 **Result of Constructing the Proposed Water Conveyance Facilities**

6 **NEPA Effects:** Under this Alternative, recreational boat navigation would be affected to the same
7 extent as under Alternative 1C. Alternative 6C would result in the creation of obstructions to boat
8 passage causing boat traffic delays, and impediments to boat movement. Overall, effects on
9 temporary alteration of recreational navigation would be considered adverse. Mitigation Measure
10 TRANS-1a would be available to reduce effects to marine navigation by development and
11 implementation of site-specific construction traffic management plans, including specific measures
12 related to management of barges and stipulations to notify the commercial and leisure boating
13 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
14 contribute funds for the construction of new recreation opportunities as well as for the protection of
15 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
16 proponents would also assist in funding the expansion of state recreation areas in the Delta as
17 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
18 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
19 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
20 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
21 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
22 recreational opportunities within the project area by providing a recreational opportunity
23 downstream/upstream in the same area for the same regional recreational users. These
24 commitments are further described in Appendix 3B, *Environmental Commitments*.

25 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
26 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
27 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
28 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
29 Agriculture Research Service, University of California Cooperative Extension Weed Research and
30 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
31 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
32 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
33 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
34 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
35 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
36 Enhanced ability to control these invasive vegetation would lead to increased recreation
37 opportunities which would compensate for the loss of recreational opportunities within the project
38 area by providing a recreational opportunity downstream/upstream in the same area for the same
39 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
40 *Commitments*.

41 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
42 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
43 proponents would also ensure through various outreach methods that recreationists were aware of
44 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop

1 Cut). Nonetheless, effects on waterskiing, wakeboarding or tubing opportunities would last
 2 approximately 5 years (long-term) and would be considered adverse because of the reduced
 3 recreation opportunity and experiences expected to exist near construction activity.

4 **CEQA Conclusion:** Alternative 6C would result in significant impacts on boat passage and navigation
 5 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
 6 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
 7 boat traffic delays, impediments to boat movement. Changes to boat passage and navigation would
 8 also result in temporary impacts on wakeboarding, waterskiing, and tubing because of reduced
 9 speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on marine
 10 navigation by development and implementation of site-specific construction traffic management
 11 plans, including specific measures related to management of barges and stipulations to notify the
 12 commercial and leisure boating communities of proposed barge operations in the waterways. While
 13 the environmental commitments would reduce impacts on water-based recreation (water-skiing,
 14 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
 15 eliminated during construction, these impacts would be long-term and considered significant and
 16 unavoidable.

17 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 18 **Plan**

19 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 22 **Result of Constructing the Proposed Water Conveyance Facilities**

23 **NEPA Effects:** Effects on recreational fishing under Alternative 6C would be similar to those
 24 described under Alternative 1A, Impact REC-4.

25 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13, Sacramento River and
 26 Delta region fish populations would not be affected by changes to localized water quality conditions,
 27 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
 28 recreational fishing opportunities would be substantially reduced during construction. BDCP
 29 environmental commitments to prevent water quality effects include environmental training;
 30 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 31 hazardous materials management plans, and spill prevention, containment, and countermeasure
 32 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 33 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
 34 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
 35 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
 36 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
 37 avoid and minimize adverse effects on sport fish populations from impact pile driving.

38 However, construction conditions would introduce noise and visual disturbances that would affect
 39 the recreation experience for anglers. Although fish populations likely would not be affected to the
 40 degree that fishing opportunities would be substantially reduced, construction conditions would
 41 introduce noise and visual disturbances that would affect the recreation experience for anglers.
 42 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
 43 specific noise-generating activities near recreation areas would be scheduled to the extent possible

1 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
2 also be available to address construction-related visual effects on sensitive receptors from
3 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
4 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
5 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
6 chapter identifies measures to address longer term visual effects associated with changes to the
7 landscape/visual setting from construction and the presence of new water conveyance features.
8 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
9 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
10 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
11 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
12 to implement a project landscaping plan (AES-1g).

13 Although construction noise would be temporary, and primarily be limited to Monday through
14 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
15 sites. Visual setting disruptions could distract from the recreation experience including on
16 weekends. However, Mitigation Measures AQUA-1a and AQUA-1b would avoid and minimize
17 adverse effects on sport fish populations from impact pile driving, Mitigation Measures NOI-1a and
18 NOI-1b would address construction noise effects. Additionally, specific noise-generating activities
19 near recreation areas would be scheduled to the extent possible so as to avoid effects on passive
20 recreation activities on-shore fishing. Mitigation measures would also be available to address
21 construction-related visual effects on sensitive receptors from vegetation removal for transmission
22 lines and access routes (AES-1a), provision of visual barriers between construction work areas and
23 sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from
24 sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address
25 longer term visual effects associated with changes to the landscape/visual setting from construction
26 and the presence of new water conveyance features. These include developing and implementing a
27 spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once
28 they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the
29 extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities
30 (AES-1f), and implementing best management practices to implement a project landscaping plan
31 (AES-1g). Overall, construction of the proposed water conveyance facilities would not degrade the
32 fishing experience for boat and on-shore fishing locations. Additionally, anglers could move to other
33 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
34 anglers with alternative bank fishing access sites further removed from areas affected by
35 construction. This effect would not be adverse.

36 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
37 construction activities would be considered less than significant because the BDCP would include
38 environmental commitments to prevent water quality effects include environmental training;
39 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
40 hazardous materials management plans, and spill prevention, containment, and countermeasure
41 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
42 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
43 minimize adverse effects on sport fish populations from impact pile driving. However, the overall
44 experience for anglers would be degraded because of elevated noise and degraded visual conditions.
45 Construction would last up to 5 years; although this would be temporary, it would result in a long-
46 term reduction of local fishing opportunities and experiences and would be a significant and

1 unavoidable impact because the public use of established recreation facilities in the study area
2 would be affected for more than 2 years. Mitigation Measure REC-2 would ensure continued access
3 for bank fishing at established sport fishing locations such that there would be no long-term
4 reduction of local fishing opportunities and experiences. This impact would be less than significant.

5 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

6 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
7 1A.

8 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
9 **of Pile Driving and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
11 Alternative 1A, Impact AQUA-1.

12 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
13 **and Other Construction-Related Underwater Noise**

14 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
15 Alternative 1A, Impact AQUA-1.

16 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
17 **Construction**

18 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

19 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
20 **Tracking Program**

21 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

22 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
23 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
24 **Transmission Lines and Underground Transmission Lines Where Feasible**

25 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
28 **Sensitive Receptors**

29 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
32 **Material Area Management Plan**

33 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a
17 Result of the Operation of the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Operation of Alternative 6C may result in changes in entrainment, spawning, rearing
19 and migration. However, in general, effects on (non-covered) fish species that are popular for
20 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
21 recreational fishing. While there are some significant impacts to specific non-covered species, as
22 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13, they are typically limited to
23 specific rivers and not the population of that species as a whole. The effect is not adverse because it
24 would not result in a substantial long-term reduction in recreational fishing opportunities

25 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
26 operation of Alternative 6C would be considered less than significant because any impacts to fish
27 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
28 would not impact the species population of any popular sportfishing species overall.

29 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial
30 Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-
31 of-Delta Reservoirs**

32 **NEPA Effects:** Operation of Alternative 6C would be the same as Alternative 6A and would primarily
33 result in small changes in the frequency with which the end-of-September reservoir levels at Trinity
34 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels
35 identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir show
36 greater difference when compared to the no action conditions than projected for the other
37 reservoirs. See Table 15-12a and Table 15-12b. Also see Chapter 3, *Description of Alternatives*,
38 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *Modeling
39 Methodology*, for an explanation of the CALSIM model and assumptions.

1 **Existing Conditions (CEQA Baseline) Compared to Alternative 6C (2060)**

2 As shown in Table 15-12a and Table 15-12b, under Alternative 6C there would be from 3 to 64
3 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
4 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
5 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
6 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
7 climate change, and operation of the alternative. It is not possible to specifically define the exact
8 extent of the changes due to implementation of the action alternative using these model simulation
9 results. Thus, the precise contributions of sea level rise and climate change to the total differences
10 between Existing Conditions and Alternative 6C cannot be isolated in this comparison. Please refer
11 to the comparison of the No Action Alternative (2060) to Alternative 6C (2060) for a discussion of
12 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
13 Alternative 6C.

14 **No Action Alternative (2060) Compared to Alternative 6C (2060)**

15 The comparison of Alternative 6C (2060) to the No Action Alternative (2060) condition most closely
16 represents changes in reservoir elevations that may occur as a result of operation of the alternative
17 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
18 *Methodology*).

19 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6C would result in changes in
20 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
21 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
22 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
23 the CASIM II modeling results indicate that reservoir levels under Alternative 6C (2060) operations
24 would fall below the individual reservoir thresholds less frequently than under No Action
25 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
26 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
27 beneficial effects on recreation opportunities and experiences because there would be fewer years
28 in which the lake levels fall below the recreation threshold relative to the No Action Alternative
29 (2060). Operation of Alternative 6C would not adversely affect water-dependent or water-enhanced
30 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
31 under operation of Alternative 6C because there would be fewer years in which end-of-September
32 reservoir levels would fall below the recreation thresholds thus indicating better boating
33 opportunities, when compared to No Action Alternative (2060) conditions.

34 The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to
35 the No Action Alternative (2060) condition for which the reservoir level would fall below the
36 reservoir boating threshold at the end of September for the Dinosaur Point boat launch. However,
37 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
38 substantially change relative to the No Action Alternative (2060) conditions (there would be three
39 additional years). This is a less than 10% change (8 years or less) and would not be considered a
40 substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would
41 still be available for access to the reservoir, these changes would not be adverse. Shoreline fishing
42 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
43 and fishing— would be available. These changes would not be adverse.

1 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 2 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 3 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 4 Alternative 6C (2060) operations would fall below the individual reservoir thresholds less
 5 frequently than under No Action Alternative (2060). Because there would be fewer years in which
 6 the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative
 7 (2060) conditions, these impacts would be considered beneficial impacts on recreation
 8 opportunities and experiences. At San Luis Reservoir, although boating opportunity would be
 9 reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would
 10 not substantially change. The modeled additional three years of exceeding the recreation threshold
 11 attributable to operation of Alternative 6C (2060) relative to the No Action Alternative (2060)
 12 would be less than significant because it is a less than 10% change (8 years or less). This would be a
 13 less-than-significant impact. No mitigation is required. Operation of Alternative 6C would not
 14 substantially affect water-dependent or water-enhanced recreation at these reservoirs.

15 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
 16 **Result of Maintenance of the Proposed Water Conveyance Facilities**

17 **NEPA Effects:** Effects of facility maintenance activities on water-based recreation under Alternative
 18 6C would be similar to those described under Alternative 1A, Impact REC-7, and would result in
 19 periodic temporary but not substantial effects on boat passage and water-based recreational
 20 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
 21 maintenance activities would occur on land and would not affect boat passage and navigation.
 22 Implementation of the environmental commitment to provide notification of construction and
 23 maintenance activities in waterways (Appendix 3B, *Environmental Commitments*) would reduce
 24 these effects. These effects are not considered adverse.

25 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 26 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
 27 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
 28 environmental commitment to provide notification of construction and maintenance activities in
 29 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
 30 Intake maintenance impacts on recreation would be considered less than significant because
 31 impacts, if any, on public access or public use of established recreation facilities would last for 2
 32 years or less. Mitigation is not required.

33 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
 34 **Result of Maintenance of the Proposed Water Conveyance Facilities**

35 **NEPA Effects:** Changes to land-based recreation under Alternative 6C would be the same as those
 36 described for Alternative 1C, Impact REC-8. Maintenance would be short-term and intermittent and
 37 would be conducted within the individual facility right-of-way, which does not include any
 38 recreation facilities or recreation use areas. There would be no adverse effects on recreation
 39 opportunities as a result of maintenance of the proposed water conveyance facilities.

40 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 41 would not result in any changes to land-based recreational opportunities. Therefore, there would be
 42 no impact. Mitigation is not required.

1 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
2 **Implementing Conservation Measures 2-21**

3 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
4 components as part of Alternative 6C could have effects related to recreational fishing that are
5 similar in nature to those discussed above for construction, and operation and maintenance of
6 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
7 effects would likely be substantially lower because the nature of the activities associated with
8 implementing the conservation components would be different—less heavy construction equipment
9 would be required and the restoration actions would be implemented over a longer time frame than
10 CM1. Potential effects from implementation of the conservation components would be dispersed
11 over a larger area and would generally involve substantially fewer construction and operation
12 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
13 components would be expected to result in long-term benefits to aquatic species. Additional
14 discussion related to the individual conservation measures is provided below.

15 With regards to fishing opportunities, effects of implementing the conservation components under
16 Alternative 6C would be similar to those described for Alternative 1C. CM2–CM21 would be
17 expected to improve fishing opportunities in the study area although some effect on fishing
18 opportunities could take place during implementation of the conservation measures. Overall,
19 implementing the proposed conservation components would be expected to provide beneficial
20 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

21 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
22 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
23 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
24 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
25 implementation stage, these measures could result in impacts on fishing opportunities by
26 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
27 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
28 onshore fishing opportunities. These impacts would be considered less than significant because the
29 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
30 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
31 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
32 and although these CMs would result in highly localized reductions of predatory species, overall,
33 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
34 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13). Construction of
35 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
36 recreational fishing. The potential impact on covered and non-covered sport fish species from
37 construction activities would be considered less than significant because the BDCP would include
38 environmental commitments to prevent water quality effects include environmental training;
39 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
40 hazardous materials management plans, and spill prevention, containment, and countermeasure
41 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
42 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
43 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
44 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
45 implementation of the other conservation components. Because construction of the conservation
46 measure component facilities would be less intense and of shorter duration than construction of

1 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 2 the construction-related impacts on recreational fishing associated with the other conservation
 3 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 4 will undergo additional environmental review and permitting which will include identification of
 5 site-specific measures to further protect resources.

6 Environmental commitments that will reduce construction-related impacts on recreation include a
 7 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 8 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 9 REC-3, above). In addition, a number of mitigation measures will address construction-related
 10 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 11 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 12 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 13 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 14 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 15 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 16 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.13). Mitigation measures NOI-
 17 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 18 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.13). Finally, should
 19 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 20 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 21 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13).

22 In the long term, the impact on fishing opportunities would be considered beneficial because the
 23 conservation measures are intended to enhance aquatic habitat and fish abundance.

24 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 25 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 26 **Transmission Lines and Underground Transmission Lines Where Feasible**

27 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 30 **Sensitive Receptors**

31 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 34 **Material Area Management Plan**

35 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

38 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 5 **of Pile Driving and Other Construction-Related Underwater Noise**

6 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 7 Alternative 1A, Impact AQUA-1.

8 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 9 **and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 11 Alternative 1A, Impact AQUA-1.

12 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 13 **as a Result of Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 15 conservation components under Alternative 6C would be similar to those described for Alternative
 16 1C. Implementing the conservation measures could result in an adverse effect on recreation by
 17 limiting boating by reducing the extent of navigable waterways available to boaters. Once
 18 implemented, the conservation measures could provide beneficial effects to recreation by expanding
 19 the extent of navigable waterways available to boaters, improving and expanding boat launch
 20 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

21 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 22 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 23 BDCP proponents would implement environmental commitments to include a noise abatement plan
 24 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 25 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 26 available to address construction-related effects on recreational boating by reducing the degree of
 27 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 28 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 29 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 30 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 31 and transportation safety and access conditions of the marina (see additional discussion under
 32 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.13).
 33 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 34 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 35 *Noise*, Section 23.4.3.13).

36 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 37 some habitat restoration and enhancement measures and other conservation measures would limit
 38 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 39 water available to boaters. Temporary effects would also stem from construction, which may limit
 40 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 41 implementation. However, BDCP conservation measures would also lead to an enhanced boating

1 experience by expanding the extent of navigable waterways available to boaters, improving and
 2 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 3 navigation. Because these measures would not be anticipated to result in a substantial long-term
 4 disruption of boating activities, this impact is considered less than significant for the conservation
 5 measures, with the exception of CM18, discussed further below.

6 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 7 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 8 The BDCP proponents would implement environmental commitments to include a noise abatement
 9 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 10 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 11 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 12 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 13 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 14 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 15 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 16 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 17 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.13). Mitigation measures NOI-
 18 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 19 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.13). Implementation of
 20 these measures, as determined applicable to construction of this facility under future site-specific
 21 environmental review, would reduce impacts on recreational boating to less than significant. No
 22 additional mitigation would be required.

23 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 24 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 25 **Transmission Lines and Underground Transmission Lines Where Feasible**

26 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 29 **Sensitive Receptors**

30 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 33 **Material Area Management Plan**

34 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 35 Alternative 1A, Impact AES-1.

36 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

37 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 38 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 5 **Result of Implementing Conservation Measures 2–21**

6 **NEPA Effects:** Implementing the conservation components under Alternative 6C would have similar
 7 impacts on upland recreation activities as those described for Alternative 1C, Impact REC-11.
 8 Implementing the conservation measures could result in an adverse effect on recreation
 9 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
 10 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 11 suitable for hiking, nature photography, or other similar activity. However, environmental
 12 commitments would reduce these effects, and implementation of the measures would also restore
 13 or enhance new potential sites for upland recreation thereby improving the quality recreational
 14 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 15 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 16 mechanism and would not result in a physical change to upland areas; construction under CM18,
 17 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 18 action primarily located at boat launches and would not affect upland recreation areas and related
 19 opportunities. These measures are not discussed further in this analysis.

20 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 21 conservation measures would temporarily limit opportunities for upland recreational activities
 22 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 23 construction activities would also temporarily compromise the quality of upland recreation in and
 24 around these areas. Additionally, it is possible that current areas of upland recreation would be
 25 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 26 activities. These impacts on upland recreational opportunities would be considered less than
 27 significant because the BDCP would include environmental commitments that would require BDCP
 28 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 29 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 30 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 31 upland recreation and the measure would improve the quality of existing recreational opportunities
 32 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 33 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 34 considered less than significant.

35 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 36 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 37 **Addressing Recreation Resources**

38 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 39 Alternative 6C would generally have the same potential for incompatibilities with one or more plans
 40 and policies related to protecting recreation resources in the study area as described for Alternative
 41 1C, Impact AES-12. As described under Alternative 1C, there would be potential for the alternative
 42 to be incompatible with plans and policies related to protecting and promoting recreation
 43 opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of

1992, *Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas General Plan*). In addition, with the exception of San Joaquin County, the alternative may be incompatible with county general plan policies that protect recreation resources in the study area.

CEQA Conclusion: The incompatibilities identified in the analysis indicate the potential for a physical consequence to the environment. The physical effects are discussed in impacts REC-1 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of the alternative with relevant plans and policies.

15.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs; Operational Scenario E)

For the purposes of assessment of effects on recreation, Alternative 7 is the same as Alternative 1A, with the following exceptions.

- Alternative 7 has three proposed intakes, rather than five—Intakes 2, 3, and 5.
- Alternative 7 has a different operational scenario (scenario E).
- The restoration measures for Alternative 7 include an additional 20 miles of channel margin restoration and an additional 10,000 acres of seasonally inundated floodplain.

Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by Alternative 7, except that sites or areas affected by Intakes 1 or 4 would not be affected under this alternative (Mapbook Figure 15-1). Specific effects on recreation areas or sites are discussed under Alternative 1A.

Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private Commercial Recreation Facility Available for Public Access as a Result of the Location of Proposed Water Conveyance Facilities

NEPA Effects: Alternative 7 would have similar effects on the displacement of existing recreational facilities as those described under Alternative 1A; however, only three intake locations (Intakes 2, 3, and 5) would be constructed under Alternative 7. The proposed location of the intake facilities, tunnels, and associated water conveyance facilities would not lie within the designated boundaries of an existing public use recreation site, including parks, marinas, or other designated areas. Therefore, there would be no adverse effects. Effects on recreation related to construction of the water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.14, and Chapter 23, *Noise*, Section 23.4.3.14, for additional discussion of these topics.

CEQA Conclusion: The alternative would not locate alternative facilities that would result in the permanent displacement of any well-established public use or private commercial recreation facility available for public access. Therefore, impacts are considered less than significant. No mitigation is required.

1 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 2 **as a Result of Constructing the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** Effects related to temporary disruption of well-established recreational opportunities
 4 or experiences under Alternative 7 would be the same as described for Alternative 4. Construction
 5 of Alternative 7 facilities would result in temporary short-term and long-term effects related to
 6 disruption of well-established recreational opportunities and experiences at recreation sites or
 7 areas in the study area. Indirect effects on recreation experiences may occur as a result of impaired
 8 access, construction noise, or negative visual effects associated with construction.

9 **Other Recreation Opportunities**

10 *On-Water Recreation*

11 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
 12 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
 13 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
 14 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
 15 outside of the impact area for noise, the overall recreation experience upstream or downstream of
 16 these sites may fall within the noise impact area and could experience diminished recreation
 17 opportunities because of the elevated noise levels as well as visual setting disruptions over the
 18 course of intake installation. Overall, construction activities associated with the proposed water
 19 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
 20 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
 21 further limited primarily to June 1 through October 31 each year. Although dewatering would take
 22 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
 23 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
 24 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
 25 recreationists to experience a changed recreation setting.

26 *Campgrounds*

27 Nighttime construction activities would require the use of bright lights that would negatively affect
 28 nighttime views of and from the work area. This would affect any overnight camping at the
 29 recreation sites and areas discussed above, although day use areas that close at sunset would not be
 30 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
 31 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.14,
 32 another nighttime effect on recreation would be construction noise levels that could adversely affect
 33 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
 34 construction could be infrequent and intermittent, but would adversely affect camping sites.
 35 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
 36 NOI-1b would be available to address these effects.

37 **Summary**

38 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
 39 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
 40 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
 41 12.3.3.14, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.14, Chapter 19, *Transportation*,
 42 Section 19.3.3.14, and Chapter 23, *Noise*, Section 23.4.3.14 for additional detail related to

1 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
2 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
3 sites or areas within the construction impact area.

4 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
5 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
6 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
7 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
8 measures, environmental commitments, and conservation measures would provide several benefits
9 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
10 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
11 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
12 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
13 degradation associated with accidental spills, runoff and sedimentation, and dust could have
14 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
15 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
16 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
17 crane, would be implemented by the BDCP proponents where determined necessary for all covered
18 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
19 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
20 *Commitments*, DWR would implement an environmental commitment that would dispose of and
21 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
22 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
23 of the action alternatives, implementation of CM3 and CM11 will result in protection and
24 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
25 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
26 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
27 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
28 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
29 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
30 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
31 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
32 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
33 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
34 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
35 bicycling, equestrian use, hunting, fishing, and boating.

36 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.14, identifies a number of mitigation
37 measures that would be available to address construction-related visual effects on sensitive
38 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
39 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
40 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
41 addition, the chapter identifies measures to address longer term visual effects associated with
42 changes to the landscape/visual setting from construction and the presence of new water
43 conveyance features. These include developing and implementing a spoil/borrow and RTM area
44 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
45 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
46 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and

1 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
2 would also make a commitment to enhance the visual character of the area by creating new wildlife
3 viewing sites and enhancing interest in the construction site by constructing viewing areas and
4 displaying information about the project, which may attract people who may use the recreation
5 facilities to the construction site as part of the visit.

6 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
7 proponents will work with the California Department of Parks and Recreation to help insure the
8 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
9 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
10 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
11 helping to fund or construct elements of the American Discovery Trail and the potential conversion
12 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
13 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
14 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
15 proposal. The BDCP project proponents will also work with DPR to determine if some of the
16 constructed elements of CM1 could incorporate elements of the DPR's proposal.

17 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
18 involve preparation of site-specific construction traffic management plans that would address
19 potential public access routes and provide construction information notification to local residents
20 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
21 of access to affected recreation areas as an environmental commitment. Where construction
22 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
23 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
24 construction sites. These would be designed to be safe, pleasant and would integrate with
25 opportunities to view the construction site as an additional area of interest. These physical facilities
26 would be combined with public information, including sidewalk wayfinding information that would
27 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
28 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
29 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
30 congested roadway segments.

31 Chapter 23, *Noise*, Section 23.4.3.14, discusses that construction noise effects could be addressed
32 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
33 implementation of a complaint/response tracking program (NOI-1b), and an environmental
34 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
35 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
36 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
37 viewing the aesthetic amenities of the area.

38 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
39 2 would ensure continued access to existing recreation experiences. The Delta offers many
40 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
41 all of which would continue to be available for recreationists. However, due to the length of time that
42 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
43 related to temporary disruption of existing recreational activities at facilities within the impact area
44 would be adverse.

1 **CEQA Conclusion:** Construction of Alternative 7 intakes and related water conveyance facilities
 2 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 3 years) impacts on well-established recreational opportunities and experiences in the study area
 4 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 5 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 6 commitments, and AMMs would reduce these construction-related impacts by implementing
 7 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 8 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 9 and implement noise reduction and complaint tracking measures. However, the level of impact
 10 would not be reduced to less than significant because even though mitigation measures and
 11 environmental commitments would reduce impacts on wildlife, visual setting, transportation, and
 12 noise conditions that could detract from the recreation experience, due to the dispersed effects on
 13 the recreation experience across the Delta, it is not certain the mitigation would reduce the level of
 14 these impacts to less than significant in all instances such that there would be no reduction of
 15 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 16 considered significant and unavoidable. However, the impacts related to construction of the intakes
 17 would be less than significant.

18 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

19 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 20 1A.

21 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**
 22 **Disturbance of Nesting Birds**

23 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 24 Alternative 1A, Impact BIO-75.

25 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 26 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 27 **Transmission Lines and Underground Transmission Lines Where Feasible**

28 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 31 **Sensitive Receptors**

32 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 35 **Material Area Management Plan**

36 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 37 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

2 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-1.

4 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the
5 Extent Feasible**

6 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-1.

8 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from
9 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

10 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project
13 Landscaping Plan**

14 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of
17 Residents**

18 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for
21 Construction**

22 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-4.

24 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,
25 to Prevent Light Spill from Truck Headlights toward Residences**

26 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management
29 Plan**

30 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
31 Impact TRANS-1.

32 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on
33 Congested Roadway Segments**

34 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 2 **Agreements to Enhance Capacity of Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 12 **Result of Constructing the Proposed Water Conveyance Facilities**

13 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
 14 under this alternative would be the same as those described for Alternative 4. Direct effects on boat
 15 passage and navigation on the Sacramento River would result from construction of the intakes.
 16 Effects could include reduced access and delays to boat passage and navigation related to the
 17 narrower available river width and temporary speed zones. However, boat passage volume along
 18 the corridor of the Sacramento River where intakes are proposed is low. Water-based recreational
 19 activities such as waterskiing, wakeboarding, tubing, or fishing are also low. In addition, there is
 20 sufficient width in the channel to allow boat passage, with minor delays related to construction
 21 speed zones. These effects on boat passage and navigation would be reduced with the
 22 implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents developing
 23 and implementing site-specific construction traffic management plans, including waterway
 24 navigation elements. Nonetheless, these effects would be long-term, lasting approximately 5 years
 25 and would be considered adverse because of the reduced recreation opportunity and experiences
 26 expected to exist near construction activity.

27 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
 28 and navigation on the Sacramento River and other waterways in the study area, including the
 29 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
 30 channel closures that could impede boat movement and eliminate recreational opportunities. In
 31 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
 32 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
 33 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
 34 implementation of site-specific construction traffic management plans, including specific measures
 35 related to management of barges and stipulations to notify the commercial and leisure boating
 36 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
 37 contribute funds for the construction of new recreation opportunities as well as for the protection of
 38 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
 39 proponents would also assist in funding the expansion of state recreation areas in the Delta as
 40 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
 41 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
 42 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the

1 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
2 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
3 recreational opportunities within the project area by providing a recreational opportunity
4 downstream/upstream in the same area for the same regional recreational users. These
5 commitments are further described in Appendix 3B, *Environmental Commitments*.

6 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
7 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
8 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
9 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
10 Agriculture Research Service, University of California Cooperative Extension Weed Research and
11 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
12 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
13 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
14 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
15 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
16 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
17 Enhanced ability to control these invasive vegetation would lead to increased recreation
18 opportunities which would compensate for the loss of recreational opportunities within the project
19 area by providing a recreational opportunity downstream/upstream in the same area for the same
20 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
21 *Commitments*.

22 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
23 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
24 proponents would also ensure through various outreach methods that recreationists were aware of
25 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
26 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
27 adverse because of the reduced recreation opportunity and experiences expected to exist near
28 construction activity.

29 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
30 construction of the intakes and temporary barge unloading facilities. Impacts would last
31 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
32 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
33 closures could impede boat movement and eliminate recreational opportunities. In waterways
34 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
35 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
36 development and implementation of site-specific construction traffic management plans, including
37 specific measures related to management of barges and stipulations to notify the commercial and
38 leisure boating communities of proposed barge operations in the waterways. While the
39 environmental commitments would reduce impacts on water-based recreation (water-skiing,
40 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
41 eliminated during construction, these impacts would be long-term and considered significant and
42 unavoidable.

1 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 2 **Plan**

3 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 6 **Result of Constructing the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** Effects on recreational fishing under Alternative 7 would be the same as those
 8 described under Alternative 4, Impact REC-4.

9 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14, Sacramento River and
 10 Delta region fish populations would not be affected by changes to localized water quality conditions,
 11 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
 12 recreational fishing opportunities would be substantially reduced during construction. BDCP
 13 environmental commitments to prevent water quality effects include environmental training;
 14 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 15 hazardous materials management plans, and spill prevention, containment, and countermeasure
 16 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 17 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
 18 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
 19 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
 20 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
 21 avoid and minimize adverse effects on sport fish populations from impact pile driving. However,
 22 construction conditions would introduce noise and visual disturbances that would affect the
 23 recreation experience for anglers. Although fish populations likely would not be affected to the
 24 degree that fishing opportunities would be substantially reduced, construction conditions would
 25 introduce noise and visual disturbances that would affect the recreation experience for anglers.

26 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
 27 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
 28 setting disruptions could distract from the recreation experience including on weekends. However,
 29 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
 30 specific noise-generating activities near recreation areas would be scheduled to the extent possible
 31 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
 32 also be available to address construction-related visual effects on sensitive receptors from
 33 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
 34 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
 35 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
 36 chapter identifies measures to address longer term visual effects associated with changes to the
 37 landscape/visual setting from construction and the presence of new water conveyance features.
 38 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
 39 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
 40 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
 41 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
 42 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
 43 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
 44 locations. Additionally, anglers could move to other locations along the Sacramento River and

1 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
2 sites further removed from areas affected by construction. This effect would not be adverse.

3 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
4 construction activities would be considered less than significant because the BDCP would include
5 environmental commitments to prevent water quality effects include environmental training;
6 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
7 hazardous materials management plans, and spill prevention, containment, and countermeasure
8 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
9 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
10 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
11 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
12 that there would be no long-term reduction of local fishing opportunities and experiences. This
13 impact would be less than significant.

14 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

15 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
16 1A.

17 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 18 **of Pile Driving and Other Construction-Related Underwater Noise**

19 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
20 Alternative 1A, Impact AQUA-1.

21 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 22 **and Other Construction-Related Underwater Noise**

23 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
24 Alternative 1A, Impact AQUA-1.

25 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 26 **Construction**

27 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response** 29 **Tracking Program**

30 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

31 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 32 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 33 **Transmission Lines and Underground Transmission Lines Where Feasible**

34 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
35 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 23 Alternative 1A, Impact AES-1.

24 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 25 **Result of the Operation of the Proposed Water Conveyance Facilities**

26 **NEPA Effects:** Operation of Alternative 7 may result in changes in entrainment, spawning, rearing
 27 and migration. However, in general, effects on (non-covered) fish species that are popular for
 28 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 29 recreational fishing. While there are some significant impacts to specific non-covered species, as
 30 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14, they are typically limited to
 31 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 32 would not result in a substantial long-term reduction in recreational fishing opportunities.

33 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 34 operation of Alternative 7 would be considered less than significant because any impacts to fish and,
 35 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 36 not impact the species population of any popular sportfishing species overall.

1 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 2 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 3 **of-Delta Reservoirs**

4 **NEPA Effects:** Operation of Alternative 7 would result in changes in the frequency with which the
 5 end of September reservoir levels at study area reservoirs fall below levels identified as important
 6 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 7 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 8 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 9 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 10 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

11 **Existing Conditions (CEQA Baseline) Compared to Alternative 7 (2060)**

12 As shown in Table 15-12a and Table 15-12b, under Alternative 7 there would be from 1 to 45
 13 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 14 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 15 Trinity Lake, Shasta Lake, Folsom Lake, and San Luis Reservoir. However, as discussed under
 16 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
 17 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
 18 the exact extent of the changes due to implementation of the action alternative using these model
 19 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
 20 differences between Existing Conditions and Alternative 7 cannot be isolated in this comparison.
 21 Please refer to the comparison of the No Action Alternative (2060) to Alternative 7 (2060) for a
 22 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
 23 operation of Alternative 7.

24 **No Action Alternative (2060) Compared to Alternative 7 (2060)**

25 The comparison of Alternative 7 (2060) to the No Action Alternative (2060) condition most closely
 26 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 27 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
 28 *Methodology*).

29 In comparisons of Alternative 7 (2060) operations to No Action Alternative (2060), the CALSIM II
 30 modeling results indicate that reservoir levels under Alternative 7 operations, with the exception of
 31 Folsom Lake and San Luis Reservoir, would either not change (New Melones Lake) or would fall
 32 below the individual reservoir thresholds less frequently than under No Action Alternative (2060)
 33 (Table 15-12a and Table 15-12b). These changes in reservoir elevations would not be adverse at
 34 Trinity Lake, Shasta Lake, Oroville Reservoir, Folsom Lake, and New Melones Lake. At Trinity Lake,
 35 Shasta Lake, and Lake Oroville these changes would be considered beneficial effects on recreation
 36 opportunities and experiences under Alternative 7 operations because there would be fewer years
 37 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
 38 conditions. Operation of Alternative 7 would not adversely affect water-dependent or water-
 39 enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation
 40 conditions under operation of Alternative 7 because there would be fewer years in which end-of-
 41 September reservoir levels would fall below the recreation thresholds thus indicating better boating
 42 opportunities, when compared to No Action Alternative (2060) conditions.

1 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
2 frequently under Alternative 7 (2060) (39 years) relative to No Action Alternative (2060) for the
3 Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to
4 reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative
5 (2060) (there would be three less years below the threshold). This change would not result in a
6 substantial reduction in recreation opportunities or experiences. Shoreline fishing would still be
7 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
8 would be available. These changes would not be adverse.

9 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
10 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
11 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
12 Alternative 7 (2060) operations would either not change (New Melones Lake) or would fall below
13 the individual reservoir thresholds less frequently than under No Action Alternative (2060).
14 Because there would be fewer years in which the reservoir or lake levels fall below the recreation
15 threshold relative to No Action Alternative (2060) conditions, these impacts would be considered
16 beneficial impacts on recreation opportunities and experiences. At San Luis Reservoir, although
17 boating opportunity would be reduced more frequently for the Dinosaur Point boat launch, access to
18 the Basalt boat launch would not substantially change. The modeling indicates there would be three
19 fewer years when reservoir elevations would exceed the recreation threshold under operation of
20 Alternative 7 (2060) relative to the No Action Alternative (2060) which would be a beneficial
21 impact. Operation of Alternative 7 would not substantially affect water-dependent or water-
22 enhanced recreation at these reservoirs. Overall, Alternative 7 would result in a less-than-significant
23 impact on recreation opportunities and experiences. No mitigation is required.

24 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 25 **Result of Maintenance of the Proposed Water Conveyance Facilities**

26 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
27 intake facilities under Alternative 7 would be similar to those described for Alternative 1A; however,
28 maintenance activities would only be necessary for three intake facilities under this alternative.
29 Maintenance would result in periodic temporary but not substantial effects on boat passage and
30 water-based recreational activities. Any effects would be short-term (less than 2 years) and
31 intermittent. Other facility maintenance activities would occur on land and would not affect boat
32 passage and navigation. Implementation of the environmental commitment to provide notification
33 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
34 *Commitments*) would reduce these effects. These effects are not considered adverse.

35 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
36 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
37 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
38 environmental commitment to provide notification of construction and maintenance activities in
39 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
40 Intake maintenance impacts on recreation would be considered less than significant because
41 impacts, if any, on public access or public use of established recreation facilities would last for 2
42 years or less. Mitigation is not required.

1 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
 2 **Result of Maintenance of the Proposed Water Conveyance Facilities**

3 **NEPA Effects:** Changes to land-based recreation as a result of maintenance of conveyance facilities
 4 under Alternative 7 would be the same as those described for Alternative 4, Impact REC-8.
 5 Maintenance would be short-term and intermittent and would be conducted within the individual
 6 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
 7 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
 8 water conveyance facilities.

9 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
 10 would not result in any changes to land-based recreational opportunities. Therefore, there would be
 11 no impact. Mitigation is not required.

12 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 13 **Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
 15 components as part of Alternative 7 could have effects related to recreational fishing that are similar
 16 in nature to those discussed above for construction, and operation and maintenance of proposed
 17 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
 18 likely be substantially lower because the nature of the activities associated with implementing the
 19 conservation components would be different—less heavy construction equipment would be
 20 required and the restoration actions would be implemented over a longer time frame than CM1.
 21 Potential effects from implementation of the conservation components would be dispersed over a
 22 larger area and would generally involve substantially fewer construction and operation effects
 23 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
 24 components would be expected to result in long-term benefits to aquatic species. Additional
 25 discussion related to the individual conservation measures is provided below.

26 With regards to fishing opportunities, effects of implementing the conservation components under
 27 Alternative 7 would be similar to those described for Alternative 1A; however, under this
 28 Alternative, 40 miles of channel margin habitat would be enhanced and 20,000 acres of seasonally-
 29 inundated floodplain would be restored, instead of 20 miles and 10,000 acres, respectively, under
 30 other action alternatives. CM2–CM21 would be expected to improve fishing opportunities in the
 31 study area although some effect on fishing opportunities could take place during implementation of
 32 the conservation measures. Overall, implementing the proposed conservation components would be
 33 expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving
 34 fishing opportunities.

35 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
 36 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
 37 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
 38 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
 39 implementation stage, these measures could result in impacts on fishing opportunities by
 40 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
 41 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
 42 onshore fishing opportunities. These impacts would be considered less than significant because the
 43 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
 44 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta

1 Plan(Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
 2 and although these CMs would result in highly localized reductions of predatory species, overall,
 3 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
 4 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14). Construction of
 5 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
 6 recreational fishing. The potential impact on covered and non-covered sport fish species from
 7 construction activities would be considered less than significant because the BDCP would include
 8 environmental commitments to prevent water quality effects include environmental training;
 9 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 10 hazardous materials management plans, and spill prevention, containment, and countermeasure
 11 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
 12 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
 13 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
 14 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
 15 implementation of the other conservation components. Because construction of the conservation
 16 measure component facilities would be less intense and of shorter duration than construction of
 17 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
 18 the construction-related impacts on recreational fishing associated with the other conservation
 19 measures to a less-than-significant level. Further, the individual facilities or conservation elements
 20 will undergo additional environmental review and permitting which will include identification of
 21 site-specific measures to further protect resources.

22 Environmental commitments that will reduce construction-related impacts on recreation include a
 23 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 24 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
 25 REC-3, above). In addition, a number of mitigation measures will address construction-related
 26 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 27 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 28 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
 29 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
 30 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
 31 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 32 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.14). Mitigation measures NOI-
 33 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 34 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.14). Finally, should
 35 construction of conservation measure facilities require pile-driving, mitigation measures to protect
 36 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
 37 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14).

38 In the long term, the impact on fishing opportunities would be considered beneficial because the
 39 conservation measures are intended to enhance aquatic habitat and fish abundance.

40 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 41 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 42 **Transmission Lines and Underground Transmission Lines Where Feasible**

43 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 44 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 16 **of Pile Driving and Other Construction-Related Underwater Noise**

17 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 18 Alternative 1A, Impact AQUA-1.

19 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 20 **and Other Construction-Related Underwater Noise**

21 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 22 Alternative 1A, Impact AQUA-1.

23 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 24 **as a Result of Implementing Conservation Measures 2–21**

25 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 26 conservation components under Alternative 7 would be similar to those described for Alternative
 27 1A; however, under this Alternative, 40 miles of channel margin habitat would be enhanced and
 28 20,000 acres of seasonally-inundated floodplain would be restored, instead of 20 miles and 10,000
 29 acres, respectively, under other action alternatives. Implementing the conservation measures could
 30 result in an adverse effect on recreation by limiting boating by reducing the extent of navigable
 31 waterways available to boaters. Once implemented, the conservation measures could provide
 32 beneficial effects to recreation by expanding the extent of navigable waterways available to boaters,
 33 improving and expanding boat launch facilities, and removing nonnative vegetation that restricts or
 34 obstructs navigation.

35 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 36 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 37 BDCP proponents would implement environmental commitments to include a noise abatement plan

(Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are available to address construction-related effects on recreational boating by reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic and transportation safety and access conditions of the marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.14). Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.14).

CEQA Conclusion: Channel modification and other activities associated with implementation of some habitat restoration and enhancement measures and other conservation measures would limit some opportunities for boating and boating-related recreation by reducing the extent of navigable water available to boaters. Temporary effects would also stem from construction, which may limit boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of implementation. However, BDCP conservation measures would also lead to an enhanced boating experience by expanding the extent of navigable waterways available to boaters, improving and expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs navigation. Because these measures would not be anticipated to result in a substantial long-term disruption of boating activities, this impact is considered less than significant for the conservation measures, with the exception of CM18, discussed further below.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures address construction-related impacts on recreational boating by reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions of the marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.14). Mitigation measures NOI-1a and NOI-1b will address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.14). Implementation of these measures, as determined applicable to construction of this facility under future site-specific environmental review, would reduce impacts on recreational boating to less than significant. No additional mitigation would be required.

Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
25 **Construction**

26 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
29 **to Prevent Light Spill from Truck Headlights toward Residences**

30 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
33 **Plan**

34 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
35 Impact TRANS-1.

1 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 2 **Congested Roadway Segments**

3 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 6 **Agreements to Enhance Capacity of Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 8 Impact TRANS-1.

9 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 10 **Construction**

11 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

12 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 13 **Tracking Program**

14 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

15 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 16 **Result of Implementing Conservation Measures 2–21**

17 **NEPA Effects:** Implementing the conservation components under Alternative 7 would have similar
 18 impacts on upland recreation activities as those described for Alternative 1A; however, under this
 19 Alternative, 40 miles of channel margin habitat would be enhanced and 20,000 acres of seasonally-
 20 inundated floodplain would be restored, instead of 20 miles and 10,000 acres, respectively, under
 21 other action alternatives. Implementing the conservation measures could result in an adverse effect
 22 on recreation opportunities by reducing the extent of upland recreation sites and activities. Once
 23 implemented, the conservation measures could adversely affect recreation by reducing the extent of
 24 upland areas suitable for hiking, nature photography, or other similar activity. However,
 25 environmental commitments would reduce these effects, and implementation of the measures
 26 would also restore or enhance new potential sites for upland recreation thereby improving the
 27 quality recreational opportunities. CM17–CM21 involve enforcement, management, or other
 28 individual, localized project components that would not affect upland recreation opportunities.
 29 CM17 is an enforcement funding mechanism and would not result in a physical change to upland
 30 areas; construction under CM18, CM19, or CM21 would not affect existing upland recreation areas;
 31 and CM20 is an enforcement action primarily located at boat launches and would not affect upland
 32 recreation areas and related opportunities. These measures are not discussed further in this
 33 analysis.

34 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 35 conservation measures would temporarily limit opportunities for upland recreational activities
 36 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 37 construction activities would also temporarily compromise the quality of upland recreation in and
 38 around these areas. Additionally, it is possible that current areas of upland recreation would be
 39 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 40 activities. These impacts on upland recreational opportunities would be considered less than

1 significant because the BDCP would include environmental commitments that would require BDCP
 2 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 3 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
 4 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
 5 upland recreation and the measure would improve the quality of existing recreational opportunities
 6 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 7 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 8 considered less than significant.

9 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
 10 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
 11 **Addressing Recreation Resources**

12 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 13 Alternative 7 would generally have the same potential for incompatibilities with one or more plans
 14 and policies related to protecting and promoting recreation opportunities in the study area as
 15 described for Alternative 4, Impact AES-12. As described under Alternative 4, there would be
 16 potential for the alternative to be incompatible with plans and policies related to protecting and
 17 promoting recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright
 18 Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan*
 19 *for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas*
 20 *General Plan*). In addition, with the exception of Solano County, the alternative may be incompatible
 21 with county general plan policies that protect visual resources in the study area.

22 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
 23 physical consequence to the environment. The physical effects are discussed in impacts REC-1
 24 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
 25 the alternative with relevant plans and policies.

26 **15.3.3.15 Alternative 8—Dual Conveyance with Pipeline/Tunnel, Intakes 2,**
 27 **3, and 5, and Increased Delta Outflow (9,000 cfs; Operational**
 28 **Scenario F)**

29 For the purposes of assessment of effects on recreation, Alternative 8 is the same as Alternative 1A,
 30 with the following exceptions.

- 31 ● Alternative 8 has three proposed intakes, rather than five—Intakes 2, 3, and 5.
- 32 ● Alternative 8 has a water operations scenario achieving up to 1.5 million acre-feet (MAF) of
 33 increased Delta outflow.
- 34 ● Alternative 8 restoration acreage targets may vary from other action alternatives.

35 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
 36 Alternative 8 (Mapbook Figure 15-1). Specific effects on recreation areas or sites are discussed
 37 below.

1 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
2 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
3 **Proposed Water Conveyance Facilities**

4 **NEPA Effects:** Alternative 8 would have similar effects on the displacement of existing recreational
5 facilities as those described under Alternative 1A, Impact REC-1; however, only three intake
6 locations would be constructed under Alternative 8 (Intakes 2, 3, and 5). Proposed placement of the
7 Alternative 8 intakes and water conveyance facilities would not fall within the designated
8 boundaries or conflict with any existing public use recreation site that would permanently displace
9 those facilities. Therefore, there would be no adverse effects. Effects on recreation related to
10 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
11 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.15, and Chapter 23, *Noise*, Section
12 23.4.3.15, for additional discussion of these topics.

13 **CEQA Conclusion:** The alternative would not locate alternative facilities that would result in the
14 permanent displacement of any well-established public use or private commercial recreation facility
15 available for public access. Therefore, impacts are considered less than significant. No mitigation is
16 required.

17 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
18 **as a Result of Constructing the Proposed Water Conveyance Facilities**

19 **NEPA Effects:** Effects related to temporary disruption of well-established recreational opportunities
20 or experiences under Alternative 8 would be the same as described for Alternative 4. Construction
21 of Alternative 8 facilities would result in temporary short-term and long-term effects related to
22 disruption of well-established recreational opportunities and experiences at recreation sites or
23 areas in the study area. Indirect effects on recreation experiences may occur as a result of impaired
24 access, construction noise, or negative visual effects associated with construction.

25 **Other Recreation Opportunities**

26 *On-Water Recreation*

27 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
28 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
29 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
30 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
31 outside of the impact area for noise, the overall recreation experience upstream or downstream of
32 these sites may fall within the noise impact area and could experience diminished recreation
33 opportunities because of the elevated noise levels as well as visual setting disruptions over the
34 course of intake installation. Overall, construction activities associated with the proposed water
35 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
36 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
37 further limited primarily to June 1 through October 31 each year. Although dewatering would take
38 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
39 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
40 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
41 recreationists to experience a changed recreation setting.

1 Campgrounds

2 Nighttime construction activities would require the use of bright lights that would negatively affect
3 nighttime views of and from the work area. This would affect any overnight camping at the
4 recreation sites and areas discussed above, although day use areas that close at sunset would not be
5 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
6 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.15,
7 another nighttime effect on recreation would be construction noise levels that could adversely affect
8 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
9 construction could be infrequent and intermittent, but would adversely affect camping sites.
10 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
11 NOI-1b would be available to address these effects.

12 Summary

13 Overall, substantial disruption of recreation opportunities at the sites within the alternative impact
14 area would still occur. Construction may occur year-round and last from 1 to 5 years and in-river
15 construction activities primarily would be limited to June 1 through October 31 each year. Also see
16 Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.15, Chapter 17, *Aesthetics and Visual*
17 *Resources*, Section 17.3.3.15, Chapter 19, *Transportation*, Section 19.3.3.15, and Chapter 23, *Noise*,
18 Section 23.4.3.15 for additional detail related to waterfowl/wildlife, aesthetics/visual resources,
19 transportation, and noise, respectively. Please refer to Alternative 1A, Impact REC-2 for detailed
20 discussions of the potential effects at specific recreation sites or areas within the construction
21 impact area.

22 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
23 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
24 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
25 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
26 measures, environmental commitments, and conservation measures would provide several benefits
27 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
28 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
29 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
30 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
31 degradation associated with accidental spills, runoff and sedimentation, and dust could have
32 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
33 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
34 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
35 crane, would be implemented by the BDCP proponents where determined necessary for all covered
36 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
37 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
38 *Commitments*, DWR would implement an environmental commitment that would dispose of and
39 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
40 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
41 of the action alternatives, implementation of CM3 and CM11 will result in protection and
42 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
43 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
44 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
45 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of

1 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
2 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
3 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
4 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
5 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
6 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
7 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
8 bicycling, equestrian use, hunting, fishing, and boating.

9 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.15, identifies a number of mitigation
10 measures that would be available to address construction-related visual effects on sensitive
11 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
12 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
13 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
14 addition, the chapter identifies measures to address longer term visual effects associated with
15 changes to the landscape/visual setting from construction and the presence of new water
16 conveyance features. These include developing and implementing a spoil/borrow and RTM area
17 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
18 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
19 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
20 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
21 would also make a commitment to enhance the visual character of the area by creating new wildlife
22 viewing sites and enhancing interest in the construction site by constructing viewing areas and
23 displaying information about the project, which may attract people who may use the recreation
24 facilities to the construction site as part of the visit.

25 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
26 proponents will work with the California Department of Parks and Recreation to help insure the
27 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
28 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
29 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
30 helping to fund or construct elements of the American Discovery Trail and the potential conversion
31 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
32 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
33 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
34 proposal. The BDCP project proponents will also work with DPR to determine if some of the
35 constructed elements of CM1 could incorporate elements of the DPR's proposal.

36 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
37 involve preparation of site-specific construction traffic management plans that would address
38 potential public access routes and provide construction information notification to local residents
39 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
40 of access to affected recreation areas as an environmental commitment. Where construction
41 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
42 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
43 construction sites. These would be designed to be safe, pleasant and would integrate with
44 opportunities to view the construction site as an additional area of interest. These physical facilities
45 would be combined with public information, including sidewalk wayfinding information that would
46 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would

1 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
 2 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
 3 congested roadway segments.

4 Chapter 23, *Noise*, Section 23.4.3.15, discusses that construction noise effects could be addressed
 5 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
 6 implementation of a complaint/response tracking program (NOI-1b), and an environmental
 7 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
 8 addition, specific noise-generating activities near recreation areas would be scheduled to the extent
 9 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
 10 viewing the aesthetic amenities of the area.

11 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
 12 2 would ensure continued access to existing recreation experiences. The Delta offers many
 13 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
 14 all of which would continue to be available for recreationists. However, due to the length of time that
 15 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
 16 related to temporary disruption of existing recreational activities at facilities within the impact area
 17 would be adverse.

18 **CEQA Conclusion:** Construction of Alternative 8 intakes and related water conveyance facilities
 19 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 20 years) impacts on well-established recreational opportunities and experiences in the study area
 21 because of access, noise, and visual setting disruptions that would result in loss of public use. These
 22 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 23 commitments, and AMMs would reduce these construction-related impacts by implementing
 24 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 25 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 26 and implement noise reduction and complaint tracking measures. However, the level of impact
 27 would not be reduced to less than significant because even though mitigation measures and
 28 environmental commitments would reduce impacts on wildlife, visual setting, transportation, and
 29 noise conditions that could detract from the recreation experience, due to the dispersed effects on
 30 the recreation experience across the Delta, it is not certain the mitigation would reduce the level of
 31 these impacts to less than significant in all instances such that there would be no reduction of
 32 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 33 considered significant and unavoidable. However, the impacts related to construction of the intakes
 34 would be less than significant.

35 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

36 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 37 1A.

38 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 39 **Disturbance of Nesting Birds**

40 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 41 Alternative 1A, Impact BIO-75.

1 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
2 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
3 **Transmission Lines and Underground Transmission Lines Where Feasible**

4 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
5 Alternative 1A, Impact AES-1.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
7 **Sensitive Receptors**

8 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
9 Alternative 1A, Impact AES-1.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
11 **Material Area Management Plan**

12 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
13 Alternative 1A, Impact AES-1.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
18 **Extent Feasible**

19 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
22 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

23 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
26 **Landscaping Plan**

27 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
30 **Residents**

31 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
32 Alternative 1A, Impact AES-4.

1 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 2 **Construction**

3 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-4.

5 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 6 **to Prevent Light Spill from Truck Headlights toward Residences**

7 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 10 **Plan**

11 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 12 Impact TRANS-1.

13 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 14 **Congested Roadway Segments**

15 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 18 **Agreements to Enhance Capacity of Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 22 **Construction**

23 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

24 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 25 **Tracking Program**

26 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

27 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
 28 **Result of Constructing the Proposed Water Conveyance Facilities**

29 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
 30 under this alternative would be to the same as those described for Alternative 4. Direct effects on
 31 boat passage and navigation on the Sacramento River would result from construction of the intakes.
 32 Effects of cofferdam construction could include reduced access and delays to boat passage and
 33 navigation related to the narrower available river width and temporary speed zones. However, boat
 34 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
 35 Water-based recreational activities such as waterskiing, wakeboarding, tubing, or fishing are also
 36 low. In addition, there is sufficient width in the channel to allow boat passage, with minor delays

1 related to construction speed zones. These effects on boat passage and navigation would be reduced
2 with the implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents
3 developing and implementing site-specific construction traffic management plans, including
4 waterway navigation elements. Nonetheless, these effects would be long-term, lasting
5 approximately 5 years and would be considered adverse because of the reduced recreation
6 opportunity and experiences expected to exist near construction activity.

7 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
8 and navigation on the Sacramento River and other waterways in the study area, including the
9 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
10 channel closures that could impede boat movement and eliminate recreational opportunities. In
11 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
12 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
13 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
14 implementation of site-specific construction traffic management plans, including specific measures
15 related to management of barges and stipulations to notify the commercial and leisure boating
16 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
17 contribute funds for the construction of new recreation opportunities as well as for the protection of
18 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
19 proponents would also assist in funding the expansion of state recreation areas in the Delta as
20 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
21 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
22 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
23 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
24 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
25 recreational opportunities within the project area by providing a recreational opportunity
26 downstream/upstream in the same area for the same regional recreational users. These
27 commitments are further described in Appendix 3B, *Environmental Commitments*.

28 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
29 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
30 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
31 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
32 Agriculture Research Service, University of California Cooperative Extension Weed Research and
33 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
34 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
35 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
36 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
37 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
38 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
39 Enhanced ability to control these invasive vegetation would lead to increased recreation
40 opportunities which would compensate for the loss of recreational opportunities within the project
41 area by providing a recreational opportunity downstream/upstream in the same area for the same
42 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
43 *Commitments*.

44 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
45 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
46 proponents would also ensure through various outreach methods that recreationists were aware of

1 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
2 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
3 adverse because of the reduced recreation opportunity and experiences expected to exist near
4 construction activity.

5 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
6 construction of the intakes and temporary barge unloading facilities. Impacts would last
7 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
8 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
9 closures could impede boat movement and eliminate recreational opportunities. In waterways
10 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
11 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
12 development and implementation of site-specific construction traffic management plans, including
13 specific measures related to management of barges and stipulations to notify the commercial and
14 leisure boating communities of proposed barge operations in the waterways. While the
15 environmental commitments would reduce impacts on water-based recreation (water-skiing,
16 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
17 eliminated during construction, these impacts would be long-term and considered significant and
18 unavoidable.

19 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
20 **Plan**

21 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
22 Impact TRANS-1.

23 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
24 **Result of Constructing the Proposed Water Conveyance Facilities**

25 **NEPA Effects:** Effects on recreational fishing under Alternative 8 would be the same as those
26 described under Alternative 4, Impact REC-4.

27 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15, Sacramento River and
28 Delta region fish populations would not be affected by changes to localized water quality conditions,
29 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
30 recreational fishing opportunities would be substantially reduced during construction. BDCP
31 environmental commitments to prevent water quality effects include environmental training;
32 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
33 hazardous materials management plans, and spill prevention, containment, and countermeasure
34 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
35 *Environmental Commitments*). RTM would be removed from RTM storage areas (which represent a
36 substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material
37 for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of
38 reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to
39 avoid and minimize adverse effects on sport fish populations from impact pile driving. However,
40 construction conditions would introduce noise and visual disturbances that would affect the
41 recreation experience for anglers. Although fish populations likely would not be affected to the
42 degree that fishing opportunities would be substantially reduced, construction conditions would
43 introduce noise and visual disturbances that would affect the recreation experience for anglers.

1 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
2 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
3 setting disruptions could distract from the recreation experience including on weekends. However,
4 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
5 specific noise-generating activities near recreation areas would be scheduled to the extent possible
6 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
7 also be available to address construction-related visual effects on sensitive receptors from
8 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
9 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
10 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
11 chapter identifies measures to address longer term visual effects associated with changes to the
12 landscape/visual setting from construction and the presence of new water conveyance features.
13 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
14 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
15 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
16 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
17 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
18 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
19 locations. Additionally, anglers could move to other locations along the Sacramento River and
20 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
21 sites further removed from areas affected by construction. This effect would not be adverse.

22 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
23 construction activities would be considered less than significant because the BDCP would include
24 environmental commitments to prevent water quality effects include environmental training;
25 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
26 hazardous materials management plans, and spill prevention, containment, and countermeasure
27 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
28 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
29 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
30 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
31 that there would be no long-term reduction of local fishing opportunities and experiences. This
32 impact would be less than significant.

33 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

34 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
35 1A.

36 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 37 of Pile Driving and Other Construction-Related Underwater Noise**

38 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
39 Alternative 1A, Impact AQUA-1.

1 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
2 **and Other Construction-Related Underwater Noise**

3 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
4 Alternative 1A, Impact AQUA-1.

5 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
6 **Construction**

7 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

8 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
9 **Tracking Program**

10 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

11 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
12 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
13 **Transmission Lines and Underground Transmission Lines Where Feasible**

14 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
17 **Sensitive Receptors**

18 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
21 **Material Area Management Plan**

22 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

25 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
28 **Extent Feasible**

29 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
32 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

33 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 2 **Landscaping Plan**

3 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 6 **Result of the Operation of the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** Operation of Alternative 8 may result in changes in entrainment, spawning, rearing
 8 and migration. However, in general, effects on (non-covered) fish species that are popular for
 9 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 10 recreational fishing. While there are some significant impacts to specific non-covered species, as
 11 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15, they are typically limited to
 12 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 13 would not result in a substantial long-term reduction in recreational fishing opportunities

14 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 15 operation of Alternative 8 would be considered less than significant because any impacts to fish and,
 16 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 17 not impact the species population of any popular sportfishing species overall.

18 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
 19 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
 20 **of-Delta Reservoirs**

21 **NEPA Effects:** Operation of Alternative 8 would result in changes in the frequency with which the
 22 end of September reservoir levels at study area reservoirs fall below levels identified as important
 23 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 24 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 25 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 26 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 27 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

28 **Existing Conditions (CEQA Baseline) Compared to Alternative 8 (2060)**

29 As shown in Table 15-12a and Table 15-12b, under Alternative 8 there would be from 4 to 73
 30 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 31 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 32 Trinity Lake, Lake Oroville, Folsom Lake, and San Luis Reservoir. However, as discussed under
 33 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
 34 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
 35 the exact extent of the changes due to implementation of the action alternative using these model
 36 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
 37 differences between Existing Conditions and Alternative 8 cannot be isolated in this comparison.
 38 Please refer to the comparison of the No Action Alternative (2060) to Alternative 8 (2060) for a
 39 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
 40 operation of Alternative 8.

1 **No Action Alternative (2060) Compared to Alternative 8 (2060)**

2 The comparison of Alternative 8 (LLT-2060) to the No Action Alternative (2060) condition most
3 closely represents changes in reservoir elevations that may occur as a result of operation of the
4 alternative because both conditions include sea level rise and climate change (see Appendix 5A,
5 *Modeling Methodology*).

6 In comparisons of Alternative 8 (2060) operations to No Action Alternative (2060), the CALSIM II
7 modeling results indicate that reservoir levels under Alternative 8 operations, with the exception of
8 San Luis Reservoir, would either not change (Lake Oroville and New Melones Lake) or would fall
9 below the individual reservoir thresholds less frequently than under No Action Alternative (2060)
10 (Table 15-12a and Table 15-12b). These changes in reservoir elevations would not be adverse at
11 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At Trinity Lake,
12 Shasta Lake, and Folsom Lake, these changes would be considered beneficial effects on recreation
13 opportunities and experiences under Alternative 8 operations because there would be fewer years
14 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
15 conditions. Operation of Alternative 8 would not adversely affect water-dependent or water-
16 enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation
17 conditions under operation of Alternative 8 because there would be fewer years in which end-of-
18 September reservoir levels would fall below the recreation thresholds thus indicating better boating
19 opportunities, when compared to No Action Alternative (2060) conditions.

20 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
21 frequently under Alternative 8 (2060) (67 years) relative to No Action Alternative (2060) for the
22 Dinosaur Point boat launch. In addition, modeling indicates that reservoir levels would fall below
23 the Basalt boat launch threshold levels more frequently under Alternative 8 (2060) conditions
24 (there would be 59 additional years) relative to the No Action Alternative (2060) conditions. These
25 increases in the loss of boating recreation opportunity at San Luis Reservoir would be considered
26 substantial changes from the No Action Alternative (2060) conditions and would be adverse.
27 Mitigation Measure REC-6 would be available to address this effect.

28 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
29 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
30 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
31 Alternative 8 (2060) operations would either not change (Lake Oroville and New Melones Lake) or
32 would fall below the individual reservoir thresholds less frequently than under No Action
33 Alternative (2060). Because there would be fewer years in which the reservoir or lake levels fall
34 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
35 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
36 Reservoir, boating opportunity would be reduced more frequently for the Dinosaur Point boat
37 launch (67 additional years relative to the No Action Alternative [2060]) and the Basalt boat launch
38 (59 additional years relative to the No Action Alternative [2060]). These changes in boat access to
39 the reservoir would be a greater than 10% change (8 years) and could be a significant impact on
40 opportunities at San Luis Reservoir. Mitigation Measure REC-6 would reduce this impact to less than
41 significant.

1 **Mitigation Measure REC-6: Provide a Temporary Alternative Boat Launch to Ensure**
2 **Access to San Luis Reservoir**

3 Consistent with applicable recreation management plans, DWR and Reclamation will work with
4 DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative
5 boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes
6 unavailable.

7 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
8 **Result of Maintenance of the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
10 intake facilities would be similar to those described for Alternative 1A; however, maintenance
11 activities would only be necessary for three intake facilities under this alternative. Maintenance
12 would result in periodic temporary but not substantial effects on boat passage and water-based
13 recreational activities. Any effects would be short-term (less than 2 years) and intermittent. Other
14 facility maintenance activities would occur on land and would not affect boat passage and
15 navigation. Implementation of the environmental commitment to provide notification of
16 construction and maintenance activities in waterways (Appendix 3B, *Environmental Commitments*)
17 would reduce these effects. These effects are not considered adverse.

18 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
19 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
20 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
21 environmental commitment to provide notification of construction and maintenance activities in
22 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
23 Intake maintenance impacts on recreation would be considered less than significant because
24 impacts, if any, on public access or public use of established recreation facilities would last for 2
25 years or less. Mitigation is not required.

26 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a**
27 **Result of Maintenance of the Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Changes to land-based recreation as a result of maintenance of conveyance facilities
29 under Alternative 8 would be the same as those described for Alternative 4, Impact REC-8.
30 Maintenance would be short-term and intermittent and would be conducted within the individual
31 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
32 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
33 water conveyance facilities.

34 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
35 would not result in any changes to land-based recreational opportunities. Therefore, there would be
36 no impact. Mitigation is not required.

37 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
38 **Implementing Conservation Measures 2-21**

39 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
40 components as part of Alternative 8 could have effects related to recreational fishing that are similar
41 in nature to those discussed above for construction, and operation and maintenance of proposed

1 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
2 likely be substantially lower because the nature of the activities associated with implementing the
3 conservation components would be different—less heavy construction equipment would be
4 required and the restoration actions would be implemented over a longer time frame than CM1.
5 Potential effects from implementation of the conservation components would be dispersed over a
6 larger area and would generally involve substantially fewer construction and operation effects
7 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
8 components would be expected to result in long-term benefits to aquatic species. Additional
9 discussion related to the individual conservation measures is provided below.

10 With regards to fishing opportunities, effects of implementing the conservation components under
11 Alternative 8 would be similar to those described for Alternative 1A; however, under this
12 Alternative, target acreages for enhancement or restoration may be altered. CM2–CM21 would be
13 expected to improve fishing opportunities in the study area although some effect on fishing
14 opportunities could take place during implementation of the conservation measures. Overall,
15 implementing the proposed conservation components would be expected to provide beneficial
16 effects on aquatic habitat and fish abundance thereby improving fishing opportunities

17 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
18 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
19 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
20 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
21 implementation stage, these measures could result in impacts on fishing opportunities by
22 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
23 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
24 onshore fishing opportunities. These impacts would be considered less than significant because the
25 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
26 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
27 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
28 and although these CMs would result in highly localized reductions of predatory species, overall,
29 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
30 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15). Construction of
31 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
32 recreational fishing. The potential impact on covered and non-covered sport fish species from
33 construction activities would be considered less than significant because the BDCP would include
34 environmental commitments to prevent water quality effects include environmental training;
35 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
36 hazardous materials management plans, and spill prevention, containment, and countermeasure
37 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
38 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
39 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
40 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
41 implementation of the other conservation components. Because construction of the conservation
42 measure component facilities would be less intense and of shorter duration than construction of
43 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
44 the construction-related impacts on recreational fishing associated with the other conservation
45 measures to a less-than-significant level. Further, the individual facilities or conservation elements

1 will undergo additional environmental review and permitting which will include identification of
2 site-specific measures to further protect resources.

3 Environmental commitments that will reduce construction-related impacts on recreation include a
4 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
5 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
6 REC-3, above). In addition, a number of mitigation measures will address construction-related
7 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
8 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
9 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
10 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-
11 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
12 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
13 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.15). Mitigation measures NOI-
14 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
15 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.15). Finally, should
16 construction of conservation measure facilities require pile-driving, mitigation measures to protect
17 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
18 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15).

19 In the long term, the impact on fishing opportunities would be considered beneficial because the
20 conservation measures are intended to enhance aquatic habitat and fish abundance.

21 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
22 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
23 **Transmission Lines and Underground Transmission Lines Where Feasible**

24 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
25 Alternative 1A, Impact AES-1.

26 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
27 **Sensitive Receptors**

28 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
29 Alternative 1A, Impact AES-1.

30 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
31 **Material Area Management Plan**

32 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
33 Alternative 1A, Impact AES-1.

34 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

35 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
36 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
 5 **of Pile Driving and Other Construction-Related Underwater Noise**

6 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 7 Alternative 1A, Impact AQUA-1.

8 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 9 **and Other Construction-Related Underwater Noise**

10 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 11 Alternative 1A, Impact AQUA-1.

12 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 13 **as a Result of Implementing Conservation Measures 2–21**

14 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 15 conservation components under Alternative 8 would be similar to those described for Alternative
 16 1A; however, under this Alternative, target acreages for enhancement or restoration may be altered.
 17 Implementing the conservation measures could result in an adverse effect on recreation by limiting
 18 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
 19 conservation measures could provide beneficial effects to recreation by expanding the extent of
 20 navigable waterways available to boaters, improving and expanding boat launch facilities, and
 21 removing nonnative vegetation that restricts or obstructs navigation.

22 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 23 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 24 BDCP proponents would implement environmental commitments to include a noise abatement plan
 25 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 26 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 27 available to address construction-related effects on recreational boating by reducing the degree of
 28 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 29 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 30 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 31 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 32 and transportation safety and access conditions of the marina (see additional discussion under
 33 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.15).
 34 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 35 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 36 *Noise*, Section 23.4.3.15).

37 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 38 some habitat restoration and enhancement measures and other conservation measures would limit
 39 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 40 water available to boaters. Temporary effects would also stem from construction, which may limit
 41 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of

1 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 2 experience by expanding the extent of navigable waterways available to boaters, improving and
 3 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 4 navigation. Because these measures would not be anticipated to result in a substantial long-term
 5 disruption of boating activities, this impact is considered less than significant for the conservation
 6 measures, with the exception of CM18, discussed further below.

7 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 8 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.
 9 The BDCP proponents would implement environmental commitments to include a noise abatement
 10 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 11 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 12 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 13 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 14 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 15 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 16 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 17 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 18 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.15). Mitigation measures NOI-
 19 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 20 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.15). Implementation of
 21 these measures, as determined applicable to construction of this facility under future site-specific
 22 environmental review, would reduce impacts on recreational boating to less than significant. No
 23 additional mitigation would be required.

24 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 25 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 26 **Transmission Lines and Underground Transmission Lines Where Feasible**

27 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 30 **Sensitive Receptors**

31 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 32 Alternative 1A, Impact AES-1.

33 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 34 **Material Area Management Plan**

35 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 36 Alternative 1A, Impact AES-1.

37 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

38 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
2 **Extent Feasible**

3 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
6 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

7 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
10 **Landscaping Plan**

11 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
14 **Construction**

15 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
16 Alternative 1A, Impact AES-4.

17 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
18 **to Prevent Light Spill from Truck Headlights toward Residences**

19 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
20 Alternative 1A, Impact AES-4.

21 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
22 **Plan**

23 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
26 **Congested Roadway Segments**

27 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
28 Impact TRANS-1.

29 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
30 **Agreements to Enhance Capacity of Congested Roadway Segments**

31 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
32 Impact TRANS-1.

33 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
34 **Construction**

35 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
5 **Result of Implementing Conservation Measures 2–21**

6 **NEPA Effects:** Implementing the conservation components under Alternative 8 would have similar
7 impacts on upland recreation activities as those described for Alternative 1A; however, under this
8 Alternative, target acreages for enhancement or restoration may be altered. Implementing the
9 conservation measures could result in an adverse effect on recreation opportunities by reducing the
10 extent of upland recreation sites and activities. Once implemented, the conservation measures could
11 adversely affect recreation by reducing the extent of upland areas suitable for hiking, nature
12 photography, or other similar activity. However, environmental commitments would reduce these
13 effects, and implementation of the measures would also restore or enhance new potential sites for
14 upland recreation thereby improving the quality recreational opportunities. CM17–CM21 involve
15 enforcement, management, or other individual, localized project components that would not affect
16 upland recreation opportunities. CM17 is an enforcement funding mechanism and would not result
17 in a physical change to upland areas; construction under CM18, CM19 or CM21 would not affect
18 existing upland recreation areas; and CM20 is an enforcement action primarily located at boat
19 launches and would not affect upland recreation areas and related opportunities. These measures
20 are not discussed further in this analysis.

21 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
22 conservation measures would temporarily limit opportunities for upland recreational activities
23 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
24 construction activities would also temporarily compromise the quality of upland recreation in and
25 around these areas. Additionally, it is possible that current areas of upland recreation would be
26 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
27 activities. These impacts on upland recreational opportunities would be considered less than
28 significant because the BDCP would include environmental commitments that would require BDCP
29 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
30 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental*
31 *Commitments*). Near-term implementation would also restore or enhance new potential sites for
32 upland recreation and the measure would improve the quality of existing recreational opportunities
33 adjacent to areas modified by the conservation measures. These measures would not be anticipated
34 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
35 considered less than significant.

36 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
37 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
38 **Addressing Recreation Resources**

39 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
40 Alternative 8 would generally have the same potential for incompatibilities with one or more plans
41 and policies related to protecting and promoting recreation opportunities in the study area as
42 described for Alternative 4, Impact AES-12. As described under Alternative 4, there would be
43 potential for the alternative to be incompatible with plans and policies related to protecting and

1 promoting recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright
2 Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan*
3 *for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas*
4 *General Plan*). In addition, with the exception of Solano County, the alternative may be incompatible
5 with county general plan policies that protect visual resources in the study area.

6 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
7 physical consequence to the environment. The physical effects are discussed in impacts REC-1
8 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
9 the alternative with relevant plans and polices.

10 **15.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs;** 11 **Operational Scenario G)**

12 Table 15-16 lists the recreation sites that fall within the construction impact area. Specific effects are
13 discussed below.

14 **Table 15-16. Recreation Sites Potentially Affected during Construction of Alternative 9**

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
Stone Lake National Wildlife Refuge	Access road	Noise and visual disturbances	Up to 1 year
Delta Meadows River Park (<i>note: this park remains closed until further notice</i>)	Channel enlargement and work area; operable barrier and work area; bridge; transmission line; access road; borrow and / or spoil site; fuel station	Noise and visual disturbances	Up to 2 years
Cosumnes River Preserve	Channel enlargement and work area; operable barrier and work area; bridge; transmission line; access road; borrow and / or spoil site	Noise and visual disturbances; access	Up to 2 years
Boathouse Marina	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbances; access	Up to 4 years Permanent displacement of area by fish screen
Landing 63	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbances; access	Up to 4 years
Deckhand's Marine Supply	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbances; access	Up to 4 years
Walnut Grove Dock	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbance; access	Up to 4 years Permanent displacement of area by fish screen
Boon Dox Dock	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbances; access	Up to 4 years Permanent displacement of area by fish screen
Dagmars Landing	Intake and work area; operable barrier; fish screen area; transmission line	Noise and visual disturbances; access	Up to 4 years

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
Brannan Island State Recreation Area <i>(Note: this park is closed until further notice)</i>	Operable barrier and work area; access road.	Noise and visual disturbances	Up to 2 years
Sherman Island	Operable barrier and work area; borrow and/or spoil site; access road; transmission line	Noise and visual disturbances	Up to 2 years
Bullfrog Landing & Marina	Dredging work area; spoil area; access road; operable barrier and associated work area.	Noise and visual disturbances; access	Up to 2 years
Union Point Marina Bar & Grill	Dredging work area; access road; spoil site	Noise and visual disturbances; access	Up to 2 years
Clifton Court Forebay	Canal; siphon and associated work area; borrow and/or spoil site; access road;	Noise and visual disturbances; access	Up to 2 years
Rivers End Marina & Storage	Canal; levee work area; new channel; transmission line	Noise and visual disturbances; access	Up to 2 years

Sources: GIS data layers available from DWR: CPAD, Green Info Network, 2011; USFWS Boundaries, USFWS 2012; Recreation Areas, AECOM/ICF 2012; Recreation Facilities, AECOM/ICF 2012.

Note: Construction duration information is approximate and subject to further revision.

1

2 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
3 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
4 **Proposed Water Conveyance Facilities**

5 **NEPA Effects:** There are six recreation sites or areas within the Alternative 9 construction footprint
6 (Mapbook Figure 15-5), three of which would be permanently displaced by placement of the fish
7 screen and intakes at the Delta Cross Channel and Georgiana Slough. Construction of the fish screens
8 and intakes would result in permanent direct effects on recreation opportunities available at the
9 Boathouse Marina, Walnut Grove Public Guest Dock, and Boon Dox guest dock in Walnut Grove. In
10 addition, although operable barriers are proposed within Delta Meadows River Park, Brannan Island
11 State Recreation Area, and Sherman Island, placement of these features within these areas would
12 not result in displacement of any existing facilities, but would result in temporary construction-
13 related effects which are discussed under Impact REC-2, below. In addition, it is noted that the effect
14 on recreation at Delta Meadows River Park and Brannan Island State Recreation Area would further
15 depend on whether these parks are reopened and operational at the time of construction.

16 **Boathouse Marina**

17 Recreation opportunities at Boathouse Marina at Locke would be directly affected by the fish screen
18 installed at the mouth of the Delta Cross Channel. The upstream most 650 feet of the 2,800-foot-long
19 fish screen would occupy about 50% of the riverbank area now occupied by the marina. The marina
20 provides 56 boat berths and indoor storage for 48 boats. In addition, modification of the river levee
21 in conjunction with the fish screen would require removal of the main marina building, a former
22 packing shed that provides indoor boat storage and houses the marina office, and other marina
23 services. Because installing the fish screen would require a portion of the marina berths and the
24 primary marina structure to be removed, the marina could no longer operate in this location, and
25 these berthing opportunities would be lost.

1 **Walnut Grove Public Guest Dock**

2 The Walnut Grove public guest dock, just upstream of the Walnut Grove Bridge, could also be
 3 affected by the fish screen at the mouth of the Delta Cross Channel. The downstream end of the fish
 4 screen would be immediately upstream of the guest dock. Addition of the fish screen to the
 5 waterway could make it more challenging for boats to navigate safely to and from the guest dock,
 6 and changes in river currents related to the fish screen could also affect boaters' use of the dock.
 7 Together, these factors could make continued operation of the dock infeasible. Therefore, this guest
 8 docking opportunity could be lost, reducing boater's access to the goods and services provided in
 9 Walnut Grove.

10 **Boon Dox Guest Dock**

11 The Boon Dox guest dock, downstream from the Walnut Grove public dock, on the other side of the
 12 Walnut Grove Bridge, would be affected by the fish screen planned for the mouth of Georgiana
 13 Slough. The upstream end of the fish screen would occupy the riverbank area now occupied by the
 14 guest dock, which is used by boating patrons of the Boon Dox convenience store and possibly by
 15 other boaters visiting Walnut Grove. Therefore, this guest docking opportunity would be lost, also
 16 reducing boater's access to the goods and services provided in Walnut Grove.

17 Construction of Alternative 9 fish screens and intakes would result in the direct permanent loss of
 18 well-established recreation facilities: Boathouse Marina, Walnut Grove public guest dock, and Boon
 19 Dox guest dock. As discussed under Impact REC-3 and in Appendix 3b, *Environmental Commitments*,
 20 BDCP proponents would contribute funds for the construction of new recreation opportunities as
 21 well as for the protection of existing recreation opportunities as outlined in Recommendation DP
 22 R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state
 23 recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. Potential
 24 uses of these funds could be for the reopening of Brannan Island State Recreation Area, completion
 25 of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
 26 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
 27 concurrent with, commencement of construction of the BDCP. This commitment serves to
 28 compensate for the loss of recreational opportunities within the project area by providing a
 29 recreational opportunity downstream/upstream in the same area for the same regional recreational
 30 users. However, these effects would still be adverse due to the permanent loss of these recreation
 31 facilities.

32 **CEQA Conclusion:** Construction of Alternative 9 fish screens and intakes would result in the direct
 33 permanent loss of well-established recreation facilities: Boathouse Marina, Walnut Grove public
 34 guest dock, and Boon Dox guest dock. BDCP proponents would contribute funds for the construction
 35 of new recreation opportunities as well as for the protection of existing recreation opportunities as
 36 outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in
 37 funding the expansion of state recreation areas in the Delta as described in Recommendation DP
 38 R13 of the Delta Plan. However, these impacts are considered significant and unavoidable.

39 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 40 **as a Result of Constructing the Proposed Water Conveyance Facilities**

41 **NEPA Effects:** Three recreation areas—Delta Meadows State Park, Brannan Island State Recreation
 42 Area, and Sherman Island—are within the construction footprint and would have temporary

1 construction-related activities occurring within or directly adjacent to their boundaries causing
2 temporary disruption to recreational opportunities and uses.

3 Adverse effects on recreational sites within the construction impact area may include restricted
4 access to a recreation facility or use; degraded recreation opportunities and experiences as a result
5 of construction noise or changes to the visual setting; or other conflict with construction activities
6 that adversely affects the ability of visitors to participate in recreational activities at the site. If these
7 effects were to occur, visitors may choose to visit different recreation areas or marinas during the
8 construction period.

9 The effects that have the potential to occur at each recreation facility site are discussed below.
10 Potential indirect effects include disrupted access, noise generated during construction, and changes
11 in the visual character of the area surrounding the recreation sites.

12 *Delta Meadows River Park*

13 ***Delta Meadows***

14 According to the California Department of Parks and Recreation website at the time of this draft
15 EIR/S, the Delta Meadows River Park is closed to the public and has no visitor services. It still serves
16 as a preserve, and is a popular mooring site among boaters. This analysis describes the park as if it is
17 accessible to recreationists.

18 Components of Alternative 9 that are within or adjacent to Delta Meadows include the fish screen at
19 the Delta Cross Channel, operable barrier on Snodgrass slough, channel connections and
20 improvements to Meadow Slough, and the construction of permanent access roads along the border
21 of the park, and associated work areas and potential borrow and/or spoil areas. For construction of
22 the fish screen at the Delta Cross Channel, an approximate 18.5 acre temporary work areas would be
23 located at the southwest corner of the park property. This area of open fields appears to receive
24 little recreation use. Construction of the new channel connection would require the use of
25 construction equipment, such as barges and dredges, which could cause construction noise.
26 Construction would also degrade or reduce non-motorized boating, fishing, or wildlife viewing
27 opportunities if wildlife avoids the area because of construction noise. Construction activity at the
28 site of the new connection would also have adverse effects on boaters using the adjacent Meadow
29 Slough, a popular mooring area for houseboaters and other boaters characterized by a relatively
30 quiet, sheltered natural setting. Recreation opportunities at this site could also be affected by the use
31 of the railroad levee road for temporary construction access during creation of the connecting
32 channel between the navigable portion of Meadow Slough and an isolated portion of the slough to
33 the southwest. This levee road is the primary access road into the park property and leads to a
34 parking area and portable restroom (when the park is open). This road is a primary walkway for
35 visitors to the park property engaged in wildlife viewing and other activities. It also provides access
36 to Snodgrass Slough for bank anglers. These recreational activities, if ongoing at the time of
37 construction, would be adversely affected by construction traffic.

38 The levee road on the south edge of the park property would also be used for construction access.
39 This use could disrupt the use of the levee road by recreationists for shore fishing activity, bird
40 watching, wildlife viewing, and walking along the levee.

1 *Brannan Island State Recreation Area*

2 Construction of the operable gate on Threemile Slough would also result in direct effects on
3 recreation opportunities and experiences available at Brannan Island State Recreation Area, if this
4 area is open during project construction. A temporary construction access road is planned to be
5 established at the south end of the State Recreation Area, generally following the route of an existing
6 gas well access road. A temporary work area covering about 5.3 acres in the same area of the State
7 Recreation Area would be needed. The main entrance road to the State Recreation Area would not
8 be used for construction traffic; therefore, recreation access to the State Recreation Area would not
9 be affected.

10 The southernmost portion of the State Recreation Area in the vicinity of these construction activities
11 is primarily undeveloped grassland with informal (user-developed) trails. Fishing activity may take
12 place along the adjacent reach of Threemile Slough. The presence of construction traffic on the
13 gravel road and presence of construction activities in the southern portion of the State Recreation
14 Area would effectively close these areas to this informal trail use and shoreline fishing; however, the
15 recreation use associated with these recreation activities in the past occurred at low levels in this
16 area, particularly on weekdays, when overall visitation to the State Recreation Area is low. Both
17 activities would be available on the extensive areas of the State Recreation Area and its Threemile
18 Slough shoreline that would be unaffected by construction activity.

19 Both land- and water-related construction activities would negatively affect the recreation setting
20 for land-based activities because of noise and visual presence of the construction, which in turn may
21 lead visitors to avoid the informal trails in the southern portion of the State Recreation Area and
22 campers to select campsites away from the construction area. However, weekday camping use in the
23 State Recreation Area (and presumably informal trail use associated with the campground at the
24 south end of the State Recreation Area) is generally low (California Department of Parks and
25 Recreation 2008c), and there are other informal and formal trails and more than 100 campsites
26 available for use in other portions of the State Recreation Area. Because the nearest developed
27 campsites are about 800 feet away from the construction site, and the undeveloped RV rally area is
28 located about 500 feet away, both visual and noise effects on campers would be somewhat lessened.

29 Although the construction activities and equipment would be visible to State Recreation Area
30 visitors using the primarily undeveloped south end of the park, the existing visual setting in the
31 vicinity already includes electric transmission line towers (on both sides of Threemile Slough), and a
32 communication tower with guy wires located close to the Threemile Slough Bridge.

33 *Sherman Island*

34 Land-based construction activities would also occur on Sherman Island, and construction traffic
35 would use East Sherman Island Levee Road. This traffic would be focused on the road entrance
36 located just before Threemile Slough Bridge and on the first 500 feet of the road leading to the
37 construction area. This road is also the main access to Outrigger Marina on Threemile Slough, about
38 1 mile beyond the construction site. Road access would be maintained throughout the construction
39 period, allowing patrons of Outrigger Marina to reach the marina without delays from construction
40 traffic or activities. In addition, adjacent landowners would still be able to access their private docks
41 or the shoreline for recreation activities. Therefore, there would be no effect on recreation
42 opportunities at Outrigger Marina or at private docks related to construction access to Sherman
43 Island.

1 A temporary work area adjacent to the gate on Threemile Slough includes a portion of Sherman
2 Island, which is included in CDFW's Delta Island Hunting Program, a late-season hunt for pheasants
3 and waterfowl on State-owned lands on Twitchell and Sherman islands (California Department of
4 Fish and Game 2009a). The 3.2-acre area on Sherman Island planned for construction is not used for
5 recreation; therefore, temporary use of this land for construction of project facilities would not
6 affect recreation. Construction noise and activities could affect hunting opportunities within the
7 vicinity of the construction activities, depending on the timing of gate construction. If construction is
8 occurring just before or during the hunt, recreation hunting near the gate construction could be
9 degraded, depending on the volume of noise and its effect on waterfowl and pheasants. As discussed
10 in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.16, mitigation would be available to
11 address effects on nesting birds and waterfowl populations. In addition, over the longer term of the
12 action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of
13 at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*,
14 Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species
15 and native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
16 cultivated lands will also benefit sandhill crane and other species. As described above in the Stone
17 Lakes National Wildlife section, implementation of CM11 would provide beneficial effects on
18 recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in
19 the BDCP reserve system. Permitted activities will include hiking, wildlife viewing, docent-led
20 wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating. Additional
21 habitat restoration projects would occur under an environmental commitment to remove RTM from
22 RTM storage areas (which represent a substantial portion of the permanent impact areas) and reuse
23 it, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration
24 projects, or other beneficial means of reuse identified for the material, as described in Appendix 3B,
25 *Environmental Commitments*.

26 *Stone Lakes National Wildlife Refuge*

27 The construction impact area associated with an access road to be built within the Cosumnes River
28 Preserve at the southwestern corner of the Stone Lakes National Wildlife Refuge and near Delta
29 Meadows River Park, would result in minor noise disturbance within the Stone Lakes National
30 Wildlife Refuge. The access road lies within the Cosumnes River Preserve. The noise disturbance
31 associated with constructing the access road would have no effect on limited public recreation
32 amenities within the refuge.

33 *Cosumnes River Preserve*

34 The impact area encompasses a portion of the Cosumnes River Preserve in the vicinity of the
35 Mokelumne River and east of the McCormack-Williamson Tract.

36 Within the Cosumnes River Preserve, the southernmost portion of the Cosumnes River Walk 3-mile
37 nature trail passes within about one-third of a mile of the beginning of a construction access road
38 planned for the south levee of the Mokelumne River. The construction access road extends west
39 from that point on Franklin Boulevard to the operable gate site on the Mokelumne River at Lost
40 Slough. Recreation use of the Cosumnes River Walk would not, therefore, be directly affected by the
41 project; however, the recreation experience of trail users may be affected by construction traffic
42 noise.

1 *Dagmar's Landing, Deckhands Marine Supply, and Landing 63*

2 The impact area for Alternative 9 also includes three private commercial marinas; Dagmar's
3 Landing, Deckhands Marine Supply, and Landing 63 are small marinas on the Sacramento River near
4 Walnut Grove with a total of 12–30 berths. These marinas are on the west bank of the Sacramento
5 River, opposite the proposed fish screen and intakes at Meadow Slough and the Delta Cross Channel.
6 In-water work in the Sacramento River may require speed zones and access detours; however, on-
7 water access and use of these marinas would be maintained throughout construction.

8 Construction activities would degrade the recreation experience for boaters using these marinas.
9 These facilities would be directly adjacent to construction activities. Users of these facilities would
10 likely experience undesirable boat traffic delays, congestion, and construction noise effects that
11 would contribute to their loss of enjoyment of boating in the affected area. Environmental
12 commitments for a water navigation plan and noise abatement plan would lessen the adverse effects
13 on recreation experience near construction areas. However, boaters may cease their recreation
14 activities on affected waterways or pursue their recreation activities at a different time or location.

15 *Walnut Grove Marina*

16 The Walnut Grove Marina is a large facility on Snodgrass Slough near Walnut Grove with 180 berths
17 that also offers RV campsites. On-water and vehicular access to the marina would be maintained,
18 and use of the marina's boating facilities would not be affected by land-based construction activities.
19 Boating, picnicking, and camping opportunities would still be available at the marina during
20 construction; however, the recreation experience of marina users may be affected by construction
21 activities.

22 *Bullfrog Landing & Marina, Union Point Marina Bar & Grill, Clifton Court Forebay*

23 The Middle River corridor encompasses Bullfrog Landing & Marina, which provides 43 berths and a
24 small store near Railroad Cut, and Union Point Marina Bar & Grill, a restaurant and bar with a guest
25 dock near Victoria Canal/North Canal. In the south Delta, the impact area encompasses a portion of
26 Clifton Court Forebay and one private commercial marina, Rivers End Marina & Storage. The marina
27 is situated on an inlet off Old River near the Tracy Fish Facility and provides a boat ramp, dry boat
28 storage, and 13 RV campsites.

29 *Campgrounds*

30 Nighttime construction activities would require the use of bright lights that would negatively affect
31 nighttime views of and from the work area. This would affect any overnight camping at the
32 recreation sites and areas discussed above, although day use areas that close at sunset would not be
33 adversely affected. Mitigation Measures AES-4a, AES-4b, and AES-4c would be available to reduce
34 the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.4.3.16,
35 another nighttime effect on recreation would be construction noise levels that could adversely affect
36 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
37 construction would adversely affect camping sites. Nighttime construction would not occur on
38 weekends or holidays. Mitigation Measures NOI-1a and NOI-1b would be available to address these
39 effects.

40 Temporary disruption of use of facilities in the impact area ranges from no effect on recreation
41 amenities to effects relating to construction and noise, dust and degradation of the recreational
42 setting. In the case of the sites discussed above, access to all facilities will be maintained.

1 Environmental commitments to prepare and implement a water navigation plan and noise
2 abatement plan would be implemented to reduce these effects. Because these effects would not be
3 substantial and construction activities would not directly occur within these facilities, effects are not
4 considered adverse.

5 **Summary**

6 Construction of Alternative 9 water conveyance facilities would result in temporary effects related
7 to disruption of recreational opportunities and experiences in the study area during construction.
8 Indirect effects on recreation experiences may occur as a result of impaired access, construction
9 noise, or negative visual effects associated with construction. Overall, construction may occur year-
10 round and last up to 9 years; however, construction in the vicinity of identified recreation facilities
11 would last from 1 to 6 years and in-river construction would be primarily limited to June 1 through
12 October 31 each year.

13 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
14 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
15 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
16 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
17 measures, environmental commitments, and conservation measures would provide several benefits
18 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
19 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
20 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
21 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
22 degradation associated with accidental spills, runoff and sedimentation, and dust could have
23 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
24 sandhill crane would be minimized with BDCP AMM20 (Greater Sandhill Crane) and BDCP AMM31
25 (Noise Abatement). These measures, designed to avoid and minimize effects on greater sandhill
26 crane, would be implemented by the BDCP proponents where determined necessary for all covered
27 activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix
28 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental*
29 *Commitments*, DWR would implement an environmental commitment that would dispose of and
30 reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes
31 such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term
32 of the action alternatives, implementation of CM3 and CM11 will result in protection and
33 enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation*
34 *Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for
35 covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also
36 protect cultivated lands, which will benefit sandhill crane and other species. Implementation of
37 CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on
38 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
39 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
40 4, Section 4.2.3.9.2 *Recreation*). The reserve system would comprise more than 170 miles of trail (25
41 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility,
42 as well as a new boat launch facility within the footprint of the North Delta diversion facilities.
43 Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours,
44 bicycling, equestrian use, hunting, fishing, and boating.

1 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.16, identifies a number of mitigation
2 measures that would be available to address construction-related visual effects on sensitive
3 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
4 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
5 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
6 addition, the chapter identifies measures to address longer term visual effects associated with
7 changes to the landscape/visual setting from construction and the presence of new water
8 conveyance features. These include developing and implementing a spoil/borrow and RTM area
9 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
10 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
11 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
12 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
13 would also make a commitment to enhance the visual character of the area by creating new wildlife
14 viewing sites and enhancing interest in the construction site by constructing viewing areas and
15 displaying information about the project, which may attract people who may use the recreation
16 facilities to the construction site as part of the visit.

17 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
18 proponents will work with the California Department of Parks and Recreation to help insure the
19 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
20 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
21 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
22 helping to fund or construct elements of the American Discovery Trail and the potential conversion
23 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
24 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
25 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
26 proposal. The BDCP project proponents will also work with DPR to determine if some of the
27 constructed elements of CM1 could incorporate elements of the DPR's proposal.

28 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
29 involve preparation of site-specific construction traffic management plans that would address
30 potential public access routes and provide construction information notification to local residents
31 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
32 of access to affected recreation areas as an environmental commitment. Where construction
33 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
34 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
35 construction sites. These would be designed to be safe, pleasant and would integrate with
36 opportunities to view the construction site as an additional area of interest. These physical facilities
37 would be combined with public information, including sidewalk wayfinding information that would
38 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
39 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
40 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
41 congested roadway segments.

42 Chapter 23, *Noise*, Section 23.4.3.16, discusses that construction noise effects could be addressed
43 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
44 implementation of a complaint/response tracking program (NOI-1b), and an environmental
45 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments*). In
46 addition, specific noise-generating activities near recreation areas would be scheduled to the extent

1 possible so as to avoid effects on passive recreation activities such as walking, picnicking, and
 2 viewing the aesthetic amenities of the area.

3 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
 4 2 would ensure continued access to existing recreation experiences. The Delta offers many
 5 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
 6 all of which would continue to be available for recreationists. However, due to the length of time that
 7 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
 8 related to temporary disruption of existing recreational activities at facilities within the impact area
 9 would be adverse.

10 **CEQA Conclusion:** Construction of Alternative 1A intakes and related water conveyance facilities
 11 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
 12 years) impacts on well-established recreational opportunities and experiences in the study area,
 13 notably at Delta Meadows State Park, Brannan Island State Recreation Area, and Sherman Island,
 14 because of access, noise, and visual setting disruptions that could result in loss of public use. These
 15 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
 16 commitments, and BDCP AMMs would reduce these construction-related impacts by implementing
 17 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
 18 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
 19 and implement noise reduction and complaint tracking measures. However, the level of impact
 20 would not be reduced to less than significant because even though mitigation measures and
 21 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
 22 and noise conditions that could detract from the recreation experience, due to the dispersed effects
 23 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
 24 of these impacts to less than significant in all instances such that there would be no reduction of
 25 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
 26 considered significant and unavoidable. However, the impacts related to construction of the intakes
 27 would be less than significant.

28 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

29 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 30 1A.

31 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 32 **Disturbance of Nesting Birds**

33 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
 34 Alternative 1A, Impact BIO-75.

35 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to** 36 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New** 37 **Transmission Lines and Underground Transmission Lines Where Feasible**

38 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-1.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
17 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

18 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
25 **Residents**

26 Please refer to Mitigation Measure AES-4a in Chapter 17, *Aesthetics and Visual Resources*,
27 Alternative 1A, Impact AES-4.

28 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
29 **Construction**

30 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
31 Alternative 1A, Impact AES-4.

32 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
33 **to Prevent Light Spill from Truck Headlights toward Residences**

34 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
35 Alternative 1A, Impact AES-4.

1 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
2 **Plan**

3 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
4 Impact TRANS-1.

5 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
6 **Congested Roadway Segments**

7 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
8 Impact TRANS-1.

9 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
10 **Agreements to Enhance Capacity of Congested Roadway Segments**

11 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
12 Impact TRANS-1.

13 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
14 **Construction**

15 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

16 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
17 **Tracking Program**

18 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

19 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
20 **Result of Constructing the Proposed Water Conveyance Facilities**

21 **NEPA Effects:** Adverse changes to boat passage and navigation, including obstructions to boat
22 passage and boat traffic delays, would occur during the construction of Alternative 9. Temporary
23 channel closures may also be required that could impede boat movement. Construction of fish
24 screens, operable gates, and boat passage facilities would include the installation of cofferdams in
25 the waterways and the use of barges, barge-mounted cranes, or other large waterborne equipment.
26 Piers or temporary barge unloading facilities could also be located at the fish screens, gate sites, or
27 spoil/dredged material storage areas. Construction equipment, such as barges and dredges, could
28 obstruct boat passage or cause congestion in high traffic areas, as could the placement of cofferdams
29 or barge unloading facilities. Channel obstructions and potential congestion may pose navigational
30 and safety hazards to boaters. Reduced boat speed limits could cause further boat traffic delays in
31 the vicinity of the construction sites.

32 **Conveyance Facilities—Operable Gates, Fish Screens, Dredging, and Channel Modifications**

33 Construction of Alternative 9 conveyance facilities would result in temporary obstruction of boat
34 passage and may cause boat traffic delays or navigation hazards to boaters.

35 *Operable Gates and Fish Screens*

36 On the waterways where an operable gate is planned, boat passage and navigation would be
37 adversely affected by restriction in the width of the channels open to boat passage and in-channel

1 obstructions during construction. Construction activities would typically include the installation of
 2 cofferdams in the waterways and the use of barges, barge-mounted cranes, or other large
 3 waterborne equipment that would obstruct portions of the channel. For culvert siphons and
 4 operable gate sites, construction, including the installation of cofferdams, would be phased, allowing
 5 for at least half of the waterway to remain open at any one time. In this way, use of the waterway for
 6 recreational navigation would be allowed to continue during construction.

7 Boats would be unable to use the portion of the waterway where construction was occurring and
 8 would be required to navigate around obstructions within the channel. Effects to boat passage and
 9 navigation as a result of construction would be temporary and reduced with implementation of
 10 environmental commitments to prepare and implement a water navigation plan and provide
 11 notification of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
 12 *Commitments*).

13 Reduced boat speed limits would be required and would be posted in the vicinity of the construction
 14 sites. Some of the gate sites are within existing speed restriction zones because of the presence of
 15 marinas and private docks.⁶ Reduced speeds in areas of moderately high- or high-volume boat traffic
 16 (primarily during summer weekends) could increase congestion on the water in those areas.
 17 However, the waterways in the vicinity of the gate construction sites would remain open to boat
 18 passage at most times, and any necessary channel closures would be short-term (typically less than
 19 1–2 days) and avoid weekends.

20 Boaters may be able to use alternative routes to reach their desired destinations and avoid traffic
 21 delays while passing through the construction zones. However, most detours would require
 22 traveling a considerably greater distance and may not be practical or desirable for many boaters.
 23 Because gates could be constructed in multiple locations simultaneously, alternative routes without
 24 construction activity may not be available between some destinations (e.g., between the Sacramento
 25 and Mokelumne rivers near Walnut Grove or between Old and Middle Rivers in the south Delta).

26 Effects on boat passage and navigation on the Sacramento River, near Locke and Walnut Grove,
 27 would be associated with construction of fish screens and intakes would be similar to the effects of
 28 operable gate construction. The navigation channel would be narrowed and boat speeds could be
 29 reduced in the vicinity of the fish screen and channel construction sites, but boat passage would
 30 remain open and available at most times.

31 The operable gate at Georgiana Slough would be built in conjunction with a fish screen across the
 32 mouth of the slough, with a boat lock. The fish screen would occupy a portion of the Sacramento
 33 River channel along the east bank of the river, restricting the width of the channel available for boat
 34 passage and potentially increasing congestion in this busy area. This could also have an adverse
 35 effect on boating recreation on this portion of the Sacramento River.

36 *Siphons*

37 Effects on boat passage and navigation during the construction of siphons on Old River and West
 38 Canal, on the east and west sides of Coney Island, would also be similar to the effects of operable
 39 gate construction.

⁶ State law restricts speed to 5 miles per hour when passing within 200 feet of any docks or boat mooring location.

1 Both Old River and West Canal are popular south Delta boating routes with probable high traffic
2 volume at peak-use times. In particular, boaters use these waterways to move between access
3 points, such as Rivers End Marina & Storage, a few miles to the south, and waterskiing and
4 wakeboarding channels, such as Victoria Canal/North Canal and Woodward Canal, to the north.
5 These waterways are also used by waterskiers, wakeboarders, other pleasure boaters, and anglers.

6 *Channel Modifications*

7 Channel connections would occur in two areas on Meadow Slough, one portion would connect a
8 navigable portion of the slough to a non-navigable isolated portion of the slough. From the
9 westernmost point of the slough a new channel connection would be made to the Sacramento River
10 as part of the fish corridor. There is currently no boat passage at this point on Meadow Slough;
11 therefore, there would be no effect on boat passage and navigation related to construction at that
12 location.

13 Modification of the channel of Old River near the mouth of the Delta-Mendota Canal would involve
14 filling in the existing channel between the Tracy Fish Facility and Fabian Tract, thereby eliminating
15 access to and from the Rivers End Marina & Storage and connectivity between Old River and Delta-
16 Mendota Canal. A new channel would be designed and constructed between Old River and Rivers
17 End Marina & Storage. This channel would maintain a connection between Old River and Delta-
18 Mendota Canal and would allow for continued access to Rivers End Marina & Storage from Old
19 River. Although the new channel would preserve the continuity of the Old River channel north and
20 south of the Delta-Mendota Canal, boat passage likely would be disrupted periodically during
21 construction. Boat traffic in this area would be expected to be moderately high at peak-use times
22 because the Rivers End Marina & Storage launch ramp and dozens of boat docks associated with
23 private homes and cabins are in the vicinity.

24 Construction of the new channel would require the use of construction equipment, such as barges
25 and dredges, which could cause construction noise. Construction activities would also degrade or
26 reduce fishing or wildlife viewing opportunities if wildlife avoids the area because of construction
27 noise. The effects on fishing, hunting, or wildlife viewing opportunities in the vicinity of the
28 construction from noise would be temporary, but long-term, lasting up to 9 years.

29 *Dredging Activities*

30 Dredging activities are proposed on the Middle River between Empire Cut and Victoria Canal and in
31 Victoria Canal/North Canal. Dredging in these waterways would require the establishment of safety
32 zones around the dredge while it is in operation. The dredge and any associated barges or pipeline
33 used for sediment disposal would be marked with signage and lights as required by U.S. Coast Guard
34 regulations. Dredging on narrow reaches of the Middle River channel and on Victoria Canal/North
35 Canal may require temporary closure of the channel in the vicinity of the dredge. A side channel that
36 would not be dredged would be available alongside most portions of the reach of Middle River to be
37 dredged, which would allow unimpeded boat passage. Similarly, the parallel channels of Victoria and
38 North Canals, each about 200 feet wide, would allow continued boat passage at most times because
39 the dredger would be used on only one side of the waterway at a time. However, closure or other
40 limitation of one side of the waterway will interfere with the waterskiing activity here, where each
41 channel is informally regarded as "one way."

42 The dredging on Middle River and Victoria Canal/North Canal also would require the construction of
43 barge unloading facilities at two locations on Middle River and one location on North Canal

1 (Mapbook Figure 15-5). The facilities would be used to transfer dredged material to spoil sites and
2 would be removed after construction was completed. On Middle River, the barge unloading facilities
3 would occupy about 850 feet of the west bank of the river, at a site about 0.5 mile north of Railroad
4 Cut and a similar portion of the east bank of the river at a site about 1 mile south of Woodward Cut.
5 At the site north of Railroad Cut, the river splits into two channels around a large, vegetated island,
6 and the west channel is about 400–500 feet wide. Although the barge facility and operations would
7 occupy part of the channel and would restrict boat passage, boat traffic could continue to use the
8 west channel and could also use the east channel, which would be unobstructed and which is not
9 subject to dredging. At the site south of Woodward Cut, the river also splits into two channels
10 around a large, vegetated island, but the east channel is only about 200 feet wide. Therefore, the
11 barge unloading facility and barge operations at this location could occupy a substantial portion of
12 the east channel of the river, constricting or preventing boat passage in that channel. The 200- to
13 250-foot-wide west channel would be unaffected and would continue to permit unobstructed boat
14 passage. However, peak boat traffic volume is high at this location. Because all or most boat traffic
15 would be confined to the west channel by the barge unloading facility and barge operations,
16 increased boat traffic congestion is likely to occur during peak use (primarily summer weekends).

17 On North Canal, the barge unloading facility would occupy about 1,200 feet of the north bank of the
18 canal, at a site about 1 mile west of Middle River. The canal is about 150–200 feet wide at this
19 location. Therefore, the barge unloading facility and barge operations at this location could occupy a
20 substantial portion of the canal, constricting or preventing boat passage. The parallel and similarly
21 sized Victoria Canal would be unaffected by the barge unloading facility and would continue to
22 permit unobstructed boat passage, although dredging activity would occur in both canals. Peak boat
23 traffic volume is high at this location. Because all or most boat traffic would be confined to Victoria
24 Canal by the barge unloading facility and barge operations, increased boat traffic congestion is likely
25 to occur during peak use (primarily summer weekends).

26 *Temporary Barge Unloading Facilities*

27 Temporary barge unloading facilities may be located adjacent to four of the operable gate
28 construction sites: Fishermen’s Cut at San Joaquin River, Old River at San Joaquin River, Railroad Cut
29 at Middle River, and Woodward Cut at Middle River. The facilities would be used to transfer
30 operable gate construction equipment and materials to and from the gate sites and would be
31 removed after construction is completed. At the Fishermen’s Cut and Old River gate sites, the barge
32 unloading facilities would be built on the San Joaquin River and would occupy about 800 feet of the
33 riverbank. In both of these locations, the San Joaquin River is about 0.5-mile wide. Therefore, the
34 barge unloading facilities and the barges using them would temporarily occupy a relatively small
35 portion at one side of the channel.

36 Similar barge unloading facilities would be built on Middle River, immediately south of the Railroad
37 Cut and Woodward Cut gate construction sites. The facilities would be used to transfer operable gate
38 construction equipment and materials to and from the gate site and to transfer dredged material to
39 spoil sites. The facilities would be removed after construction is completed. These facilities would
40 occupy about 1,100 feet and 900 feet, respectively, of the riverbank in those areas. The Middle River
41 in both locations is about 600–650 feet wide and is characterized by a split channel, with a vegetated
42 island in the middle of the river. The barge unloading facilities and barge operations at these two
43 locations could occupy a substantial portion of the west channel of the river, constricting or
44 preventing boat passage in that channel. At both locations the 150- to 200-foot-wide east channel
45 would be unaffected and would continue to permit unobstructed boat passage. However, peak boat

1 traffic volume is high at these locations. Because all or most boat traffic would be confined to the
2 east channel by the barge facility and barge unloading operations, increased boat traffic congestion
3 is likely to occur during peak use (primarily summer weekends) at these locations.

4 Adverse direct and indirect effects on boat passage and navigation and associated recreational
5 activities such as waterskiing and wakeboarding would occur as a result of construction of the
6 conveyance facility features. Boats would be unable to use the portion of the waterways where
7 construction was occurring and would be required to navigate around obstructions within the
8 channel and observe speed restrictions. Mitigation Measure TRANS-1a would be available to reduce
9 effects to marine navigation by development and implementation of site-specific construction traffic
10 management plans, including specific measures related to management of barges and stipulations to
11 notify the commercial and leisure boating communities of proposed barge operations in the
12 waterways. Additionally, BDCP proponents would contribute funds for the construction of new
13 recreation opportunities as well as for the protection of existing recreation opportunities as outlined
14 in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the
15 expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the
16 Delta Plan. For the reopening of Brannan Island State Recreation Area, completion of Delta
17 Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
18 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
19 concurrent with, commencement of construction of the BDCP. This mitigation serves to compensate
20 for the loss of recreational opportunities within the project area by providing a recreational
21 opportunity downstream/upstream in the same area for the same regional recreational users. These
22 commitments are further described in Appendix 3B, *Environmental Commitments*.

23 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. CM13 (*Invasive*
24 *Aquatic Vegetation Control*) provides for the control of egeria, water hyacinth, and other IAV
25 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
26 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
27 Agriculture Research Service, University of California Cooperative Extension Weed Research and
28 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
29 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
30 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
31 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
32 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
33 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
34 Enhanced ability to control these invasive vegetation would lead to increased recreation
35 opportunities which would compensate for the loss of recreational opportunities within the project
36 area by providing a recreational opportunity downstream/upstream in the same area for the same
37 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
38 *Commitments*.

39 CM13 (*Invasive Aquatic Vegetation Control*) and the environmental commitments would create and
40 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
41 proponents would also ensure through various outreach methods that recreationists were aware of
42 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
43 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be
44 considered adverse because of the reduced recreation opportunity and experiences expected to
45 exist near construction activity.

1 **CEQA Conclusion:** Significant impacts on boat passage and navigation and associated recreational
 2 activities such as waterskiing and wakeboarding would occur as a result of construction of the
 3 conveyance facility features of Alternative 9. In areas where construction is occurring, boats would
 4 be unable to use the portion of the waterways and be required to navigate around obstructions
 5 within the channel and observe speed restrictions. Mitigation Measure TRANS-1a would reduce
 6 impacts on marine navigation by development and implementation of site-specific construction
 7 traffic management plans, including specific measures related to management of barges and
 8 stipulations to notify the commercial and leisure boating communities of proposed barge operations
 9 in the waterways. While the environmental commitments would reduce impacts on water-based
 10 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
 11 opportunities for those eliminated during construction, these impacts would be long-term and
 12 therefore considered significant and unavoidable.

13 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management** 14 **Plan**

15 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1

17 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a** 18 **Result of Constructing the Proposed Water Conveyance Facilities**

19 **NEPA Effects:** Effects on recreational fishing under Alternative 9 would be similar to those described
 20 under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section
 21 11.3.4.16, Sacramento River and Delta region fish populations would not be affected by changes to
 22 localized water quality conditions, underwater noise, fish stranding or other physical disturbances,
 23 or reduced habitat areas such that recreational fishing opportunities would be substantially reduced
 24 during construction. BDCP environmental commitments to prevent water quality effects include
 25 environmental training; implementation of stormwater pollution prevention plans, erosion and
 26 sediment control plans, hazardous materials management plans, and spill prevention, containment,
 27 and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations
 28 plan (Appendix 3B, *Environmental Commitments*). RTM would be removed from RTM storage areas
 29 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
 30 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
 31 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
 32 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
 33 driving. However, construction conditions would introduce noise and visual disturbances that
 34 would affect the recreation experience for anglers. Although fish populations likely would not be
 35 affected to the degree that fishing opportunities would be substantially reduced, construction
 36 conditions would introduce noise and visual disturbances that would affect the recreation
 37 experience for anglers.

38 While construction noise would be temporary, and primarily be limited to Monday through Friday, it
 39 would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual
 40 setting disruptions could distract from the recreation experience including on weekends. However,
 41 Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally,
 42 specific noise-generating activities near recreation areas would be scheduled to the extent possible
 43 so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would
 44 also be available to address construction-related visual effects on sensitive receptors from

1 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
 2 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
 3 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
 4 chapter identifies measures to address longer term visual effects associated with changes to the
 5 landscape/visual setting from construction and the presence of new water conveyance features.
 6 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
 7 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
 8 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
 9 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
 10 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
 11 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
 12 locations. Additionally, anglers could move to other locations along the Sacramento River and
 13 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
 14 sites further removed from areas affected by construction. This effect would not be adverse.

15 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 16 construction activities would be considered less than significant because the BDCP would include
 17 environmental commitments to prevent water quality effects include environmental training;
 18 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
 19 hazardous materials management plans, and spill prevention, containment, and countermeasure
 20 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
 21 *Environmental Commitments*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and
 22 minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure
 23 REC-2 would ensure continued access for bank fishing at established sport fishing locations such
 24 that there would be no long-term reduction of local fishing opportunities and experiences. This
 25 impact would be less than significant.

26 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

27 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
 28 1A.

29 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects** 30 **of Pile Driving and Other Construction-Related Underwater Noise**

31 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
 32 Alternative 1A, Impact AQUA-1.

33 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving** 34 **and Other Construction-Related Underwater Noise**

35 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 36 Alternative 1A, Impact AQUA-1.

37 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during** 38 **Construction**

39 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 2 **Tracking Program**

3 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

4 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 5 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 6 **Transmission Lines and Underground Transmission Lines Where Feasible**

7 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-1.

9 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 10 **Sensitive Receptors**

11 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-1.

13 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 14 **Material Area Management Plan**

15 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 16 Alternative 1A, Impact AES-1.

17 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

18 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 21 **Extent Feasible**

22 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 25 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

26 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 27 Alternative 1A, Impact AES-1.

28 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 29 **Landscaping Plan**

30 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
 33 **Result of the Operation of the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** Operation of Alternative 9 may result in changes in entrainment, spawning, rearing
 35 and migration. However, in general, effects on (non-covered) fish species that are popular for

1 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
 2 recreational fishing. While there are some significant impacts to specific non-covered species, as
 3 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.16, they are typically limited to
 4 specific rivers and not the population of that species as a whole. The effect is not adverse because it
 5 would not result in a substantial long-term reduction in recreational fishing opportunities.

6 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 7 operation of Alternative 9 would be considered less than significant because any impacts to fish and,
 8 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 9 not impact the species population of any popular sportfishing species overall.

10 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial** 11 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-** 12 **of-Delta Reservoirs**

13 **NEPA Effects:** Operation of Alternative 9 would result in changes in the frequency with which the
 14 end of September reservoir levels at study area reservoirs fall below levels identified as important
 15 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 16 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 17 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 18 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 19 *Modeling Methodology*, for an explanation of the CALSIM II model and assumptions.

20 **Existing Conditions (CEQA Baseline) Compared to Alternative 9 (2060)**

21 As shown in Table 15-12a and Table 15-12b, under Alternative 9 there would be from 3 to 26
 22 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 23 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 24 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and San Luis Reservoir. However, as discussed
 25 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
 26 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
 27 specifically define the exact extent of the changes due to implementation of the action alternative
 28 using these model simulation results. Thus, the precise contributions of sea level rise and climate
 29 change to the total differences between Existing Conditions and Alternative 9 cannot be isolated in
 30 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 9
 31 (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
 32 attributable to operation of Alternative 9.

33 **No Action Alternative (2060) Compared to Alternative 9 (2060)**

34 The comparison of Alternative 9 (2060) to the No Action Alternative (2060) condition most closely
 35 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 36 because both conditions include sea level rise and climate change (see Appendix 5A, *Modeling*
 37 *Methodology*).

38 In comparisons of Alternative 9 (2060) operations to No Action Alternative (2060), the CALSIM II
 39 modeling results indicate that reservoir levels under Alternative 9 operations, with the exception of
 40 Lake Oroville and San Luis Reservoir, would fall below the individual reservoir thresholds less
 41 frequently than under No Action Alternative (2060) (Table 15-12a and Table 15-12b). At Lake
 42 Oroville, the modeling indicates there would be three additional years in which recreation

1 thresholds may be exceeded. This is a less than 10% change. These changes in reservoir elevations
 2 would not be adverse at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones
 3 Lake. At Trinity Lake, Shasta Lake, Folsom Lake, and New Melones Lake these changes would be
 4 considered beneficial effects on recreation opportunities and experiences under Alternative 9
 5 operations because there would be fewer years in which the lake levels fall below the recreation
 6 threshold relative to No Action Alternative (2060) conditions. Operation of Alternative 9 would not
 7 adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these
 8 conditions represent improved recreation conditions under operation of Alternative 9 because there
 9 would be fewer years in which end-of-September reservoir levels would fall below the recreation
 10 thresholds thus indicating better boating opportunities, when compared to No Action Alternative
 11 (2060) conditions.

12 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
 13 frequently under Alternative 9 (2060) (20 years) relative to No Action Alternative (2060) for the
 14 Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to
 15 reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative
 16 (2060) (there would be five additional years below the threshold). This is a less than 10% change
 17 and would not result in a substantial reduction in recreation opportunities or experiences. Shoreline
 18 fishing would still be possible, and other recreation activities at the reservoir—picnicking, biking,
 19 hiking, and fishing—would be available. These changes would not be adverse.

20 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 21 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 22 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 23 Alternative 9 (2060) operations would either result in a less than 10% change (Lake Oroville) or
 24 would fall below the individual reservoir thresholds less frequently than under No Action
 25 Alternative (2060). Because overall there would be fewer years in which the reservoir or lake levels
 26 fall below the recreation threshold relative to No Action Alternative (2060) conditions, these
 27 impacts would be considered beneficial impacts on recreation opportunities and experiences. At San
 28 Luis Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur
 29 Point boat launch, access to the Basalt boat launch would not substantially change. The modeling
 30 indicates there would be five additional years when reservoir elevations would exceed the
 31 recreation threshold under operation of Alternative 9 (2060) relative to the No Action Alternative
 32 (2060). This would be a less than 10% change and would be less than significant. Operation of
 33 Alternative 9 would not substantially affect water-dependent or water-enhanced recreation at these
 34 reservoirs. Overall, Alternative 9 would result in a less-than-significant impact on recreation
 35 opportunities and experiences. No mitigation is required.

36 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a** 37 **Result of Maintenance of the Proposed Water Conveyance Facilities**

38 **NEPA Effects:** Maintenance activities, such as painting, cleaning, making repairs, conducting
 39 biofouling prevention, conducting corrosion prevention, and maintaining equipment, could have a
 40 minor effect on boat passage and in the waterways where operable barriers, intakes and fish screens
 41 are installed. Repair efforts requiring barges and divers, as well as activities to remove debris and
 42 sediment, could cause a temporary impediment to boat movement and result in slowing of boat
 43 traffic in the immediate vicinity of the affected structure and reduce opportunities for waterskiing,
 44 wakeboarding and tubing in the immediate vicinity of the structures. However, boat passage and

1 navigation would still be possible around any barges or other maintenance equipment and these
2 effects would be expected to be short-term (2 years or less).

3 Maintenance of Alternative 9 facilities would result in temporary, but not substantial adverse effects
4 on boat passage and water-based recreational activities. Any effects would be short-term and
5 intermittent. Other facility maintenance activities would occur on land and would not affect boat
6 passage and navigation. Implementation of the environmental commitment to provide notification
7 of construction and maintenance activities in waterways (Appendix 3B, *Environmental*
8 *Commitments*) would reduce these effects. These effects are not considered adverse.

9 **CEQA Conclusion:** Effects resulting from the maintenance of intake facilities would be short-term
10 and intermittent and would not result in any significant effects on boat passage, navigation, or
11 water-based recreation within the vicinity of the intakes. In addition, implementation of the
12 environmental commitment to provide notification of construction and maintenance activities in
13 waterways (Appendix 3B, *Environmental Commitments*) would further minimize these effects.
14 Maintenance impacts on recreation would be considered less than significant because impacts, if
15 any, on public access or public use of established recreation facilities would last for 2 years or less.
16 No mitigation is required.

17 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a** 18 **Result of Maintenance of the Proposed Water Conveyance Facilities**

19 **NEPA Effects:** Maintenance activities for the conveyance facilities may include painting, landscaping,
20 equipment replacement, and mechanical repairs that would be short-term and intermittent and
21 would not affect recreation opportunities. Maintenance activities for these facilities would occur
22 within the individual facility right-of-way, which does not include any recreation facilities or
23 recreation use areas. In addition, there would be no public recreation use of the new facilities.
24 Maintenance activities would not result in any significant noise that would affect nearby
25 recreational opportunities. Therefore, there would be no effects on recreation opportunities as a
26 result of maintenance of Alternative 9 facilities.

27 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
28 would not result in any changes to recreational opportunities. Therefore, there would be no impact.
29 Mitigation is not required.

30 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of** 31 **Implementing Conservation Measures 2-21**

32 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
33 components as part of Alternative 9 could have effects related to recreational fishing that are similar
34 in nature to those discussed above for construction, and operation and maintenance of proposed
35 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
36 likely be substantially lower because the nature of the activities associated with implementing the
37 conservation components would be different—less heavy construction equipment would be
38 required and the restoration actions would be implemented over a longer time frame than CM1.
39 Potential effects from implementation of the conservation components would be dispersed over a
40 larger area and would generally involve substantially fewer construction and operation effects
41 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
42 components would be expected to result in long-term benefits to aquatic species. Additional
43 discussion related to the individual conservation measures is provided below.

1 With regards to fishing opportunities, effects of implementing the conservation components under
2 Alternative 9 would be similar to those described for Alternative 1A; however, locations or target
3 acreages may vary for proposed conservation activities. CM2–CM21 would be expected to improve
4 fishing opportunities in the study area although some effect on fishing opportunities could take
5 place during implementation of the conservation measures. Overall, implementing the proposed
6 conservation components would be expected to provide beneficial effects on aquatic habitat and fish
7 abundance thereby improving fishing opportunities.

8 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
9 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
10 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
11 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
12 implementation stage, these measures could result in impacts on fishing opportunities by
13 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
14 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
15 onshore fishing opportunities. These impacts would be considered less than significant because the
16 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
17 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta
18 Plan (Appendix 3B, *Environmental Commitments*). CM4, CM13, and CM15 target predator fish species
19 and although these CMs would result in highly localized reductions of predatory species, overall,
20 these measures would not result in an appreciable decrease in Delta-wide abundances of predatory
21 game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.16). Construction of
22 facilities could have short-term impacts on the noise or visual setting and could indirectly affect
23 recreational fishing. The potential impact on covered and non-covered sport fish species from
24 construction activities would be considered less than significant because the BDCP would include
25 environmental commitments to prevent water quality effects include environmental training;
26 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
27 hazardous materials management plans, and spill prevention, containment, and countermeasure
28 plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B,
29 *Environmental Commitments*). In addition, mitigation measures and environmental commitments
30 identified to reduce the effects of constructing CM1 would also be used to minimize effects of
31 construction on recreation (i.e., visual conditions, noise, transportation/access) associated with
32 implementation of the other conservation components. Because construction of the conservation
33 measure component facilities would be less intense and of shorter duration than construction of
34 CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce
35 the construction-related impacts on recreational fishing associated with the other conservation
36 measures to a less-than-significant level. Further, the individual facilities or conservation elements
37 will undergo additional environmental review and permitting which will include identification of
38 site-specific measures to further protect resources.

39 Environmental commitments that will reduce construction-related impacts on recreation include a
40 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
41 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and Impact
42 REC-3, above). In addition, a number of mitigation measures will address construction-related
43 impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
44 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
45 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, and AES-4c; also see
46 additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation measures TRANS-

1 1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access conditions
2 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
3 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.16). Mitigation measures NOI-
4 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
5 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.16). Finally, should
6 construction of conservation measure facilities require pile-driving, mitigation measures to protect
7 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
8 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.16).

9 In the long term, the impact on fishing opportunities would be considered beneficial because the
10 conservation measures are intended to enhance aquatic habitat and fish abundance.

11 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
12 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
13 **Transmission Lines and Underground Transmission Lines Where Feasible**

14 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
15 Alternative 1A, Impact AES-1.

16 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
17 **Sensitive Receptors**

18 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-1.

20 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
21 **Material Area Management Plan**

22 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
23 Alternative 1A, Impact AES-1.

24 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

25 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
26 Alternative 1A, Impact AES-1.

27 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
28 **Extent Feasible**

29 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-1.

31 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
32 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

33 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
34 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
2 **Landscaping Plan**

3 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
6 **Construction**

7 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
10 **to Prevent Light Spill from Truck Headlights toward Residences**

11 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
14 **Plan**

15 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
18 **Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
22 **Agreements to Enhance Capacity of Congested Roadway Segments**

23 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
24 Impact TRANS-1.

25 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
26 **Construction**

27 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
29 **Tracking Program**

30 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

31 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects**
32 **of Pile Driving and Other Construction-Related Underwater Noise**

33 Please refer to Mitigation Measure AQUA-1a in Chapter 11, *Fish and Aquatic Resources*,
34 Alternative 1A, Impact AQUA-1.

1 **Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving**
 2 **and Other Construction-Related Underwater Noise**

3 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
 4 Alternative 1A, Impact AQUA-1.

5 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 6 **as a Result of Implementing Conservation Measures 2–21**

7 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
 8 conservation components under Alternative 9 would be similar to those described for Alternative
 9 1A; however, locations or target acreages may vary for proposed conservation activities.
 10 Implementing the conservation measures could result in an adverse effect on recreation by reducing
 11 the extent of navigable waterways available to boaters. Once implemented, the conservation
 12 measures could provide beneficial effects to recreation by expanding the extent of navigable
 13 waterways available to boaters, improving and expanding boat launch facilities, and removing
 14 nonnative vegetation that restricts or obstructs navigation. Because these measures would not be
 15 anticipated to result in a substantial long-term disruption of boating activities, this would not be an
 16 adverse effect.

17 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 18 the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The
 19 BDCP proponents would implement environmental commitments to include a noise abatement plan
 20 (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2 and
 21 Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures are
 22 available to address construction-related effects on recreational boating by reducing the degree of
 23 aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual*
 24 *Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f,
 25 AES-1g, AES-4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3,
 26 above). Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c are available to address traffic
 27 and transportation safety and access conditions of the marina (see additional discussion under
 28 Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.16).
 29 Mitigation measures NOI-1a and NOI-1b are available to address construction-related noise
 30 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
 31 *Noise*, Section 23.4.3.16).

32 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 33 some habitat restoration and enhancement measures and other conservation measures would limit
 34 some opportunities for boating and boating-related recreation by reducing the extent of navigable
 35 water available to boaters. Temporary effects would also stem from construction, which may limit
 36 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
 37 implementation. However, BDCP conservation measures would also lead to an enhanced boating
 38 experience by expanding the extent of navigable waterways available to boaters, improving and
 39 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
 40 navigation. Because these measures would not be anticipated to result in a substantial long-term
 41 disruption of boating activities, this impact is considered less than significant for the conservation
 42 measures, with the exception of CM18, discussed further below.

43 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve near
 44 the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this site.

1 The BDCP proponents would implement environmental commitments to include a noise abatement
 2 plan (Appendix 3B, *Environmental Commitments*; also see additional discussion under Impact REC-2
 3 and Impact REC-3, above) to lessen these impacts. In addition, a number of mitigation measures
 4 address construction-related impacts on recreational boating by reducing the degree of aesthetic
 5 and visual degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*,
 6 Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-
 7 4b, and AES-4c; also see additional discussion under Impact REC-2 and Impact REC-3, above).
 8 Mitigation measures TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation
 9 safety and access conditions of the marina (see additional discussion under Impact REC-2 and
 10 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.16). Mitigation measures NOI-
 11 1a and NOI-1b will address construction-related noise concerns (see additional discussion under
 12 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.4.3.16). Implementation of
 13 these measures, as determined applicable to construction of this facility under future site-specific
 14 environmental review, would reduce impacts on recreational boating to less than significant. No
 15 additional mitigation would be required.

16 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
 17 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
 18 **Transmission Lines and Underground Transmission Lines Where Feasible**

19 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 20 Alternative 1A, Impact AES-1.

21 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
 22 **Sensitive Receptors**

23 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
 24 Alternative 1A, Impact AES-1.

25 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
 26 **Material Area Management Plan**

27 Please refer to Mitigation Measure AES-1c in Chapter 17, *Aesthetics and Visual Resources*,
 28 Alternative 1A, Impact AES-1.

29 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

30 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
 31 Alternative 1A, Impact AES-1.

32 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
 33 **Extent Feasible**

34 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
 35 Alternative 1A, Impact AES-1.

36 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
 37 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

38 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
 39 Alternative 1A, Impact AES-1.

1 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
 2 **Landscaping Plan**

3 Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*,
 4 Alternative 1A, Impact AES-1.

5 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
 6 **Construction**

7 Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*,
 8 Alternative 1A, Impact AES-4.

9 **Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary,**
 10 **to Prevent Light Spill from Truck Headlights toward Residences**

11 Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*,
 12 Alternative 1A, Impact AES-4.

13 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
 14 **Plan**

15 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
 16 Impact TRANS-1.

17 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
 18 **Congested Roadway Segments**

19 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
 20 Impact TRANS-1.

21 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
 22 **Agreements to Enhance Capacity of Congested Roadway Segments**

23 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
 24 Impact TRANS-1.

25 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
 26 **Construction**

27 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
 29 **Tracking Program**

30 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

31 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 32 **Result of Implementing Conservation Measures 2-21**

33 **NEPA Effects:** Implementing the conservation components under Alternative 9 would have similar
 34 effects on upland recreation activities as those described for Alternative 1A; however, locations or
 35 target acreages may vary for proposed conservation activities. Implementing the conservation

measures could result in an adverse effect on recreation opportunities by reducing the extent of upland recreation sites suitable for hiking, nature photography, or other similar activities. However, environmental commitments would reduce these effects, and implementation of the conservation measures also could provide a benefit to recreation from improved quality of upland recreation opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project components that would not affect upland recreation opportunities. CM17 is an enforcement funding mechanism and would not result in a physical change to upland areas; construction under CM18, CM19, or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement action primarily located at boat launches and would not affect upland recreation areas and related opportunities. These measures are not discussed further in this analysis.

CEQA Conclusion: Site preparation and earthwork activities associated with a number of conservation measures would temporarily limit opportunities for upland recreational activities where they occur in or near existing recreational areas. Noise, odors, and visual effects of construction activities would also temporarily compromise the quality of upland recreation in and around these areas. Additionally, it is possible that current areas of upland recreation would be converted to wetland or other landforms poorly suited to hiking, nature photography, or other activities. These impacts on upland recreational opportunities would be considered less than significant because the BDCP would include environmental commitments that would require BDCP proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments*). Near-term implementation would also restore or enhance new potential sites for upland recreation and the measure would improve the quality of existing recreational opportunities adjacent to areas modified by the conservation measures. These measures would not be anticipated to result in a substantial long-term disruption of upland recreational activities; thus, this impact is considered less than significant.

Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations Addressing Recreation Resources

NEPA Effects: Constructing the proposed water conveyance facilities (CM1) and implementing CM2–CM21 under Alternative 9 could result in the potential for incompatibilities with plans and policies related to protecting recreation resources of the Delta. A number of plans and policies that coincide with the study area provide guidance for recreation resource issues as overviewed in *Section 17.2, Regulatory Setting*. This overview of plan and policy compatibility evaluates whether Alternative 9 is compatible or incompatible with such enactments, rather than whether impacts are adverse or not adverse or significant or less than significant. If the incompatibility relates to an applicable plan, policy, or regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such physical effects of Alternative 9 on recreation resources is addressed in Impacts REC-1 through REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.4.3.16, and Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.16. The following is a summary of compatibility evaluations related to recreation resources for plans and policies relevant to the BDCP.

The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation Area Resource Management Plan

1 *and General Development Plan, and San Luis Reservoir State Recreation Area General Development*
2 *Plan* all have policies or goals to protect the recreation resources and promote a range of
3 opportunities to visitors to these areas. Construction and operation of the proposed water
4 conveyance facilities and other conservation measures would not affect recreation opportunities in
5 these areas and would be compatible with these plans.

6 The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
7 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta,*
8 *Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are all focused
9 on the protection of resources, including recreation resources, within the Delta. These plans have
10 policies, objectives, or goals intended to protect and enhance existing recreation and encourage
11 development of new local and regional opportunities. Constructing the proposed conveyance
12 facilities would result in long term disruption to existing established recreation areas in the study
13 area and change the nature of the recreation setting. The proposed water conveyance elements
14 could be considered incompatible with measures to protect existing recreation opportunities in the
15 study area.

16 The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System, and
17 the Great California Delta Trail *Blueprint Report for Contra Costa and Solano Counties* all promote
18 development of a regional trail system providing a continuous regional recreational corridor to
19 provide bikeways and hiking trails. The BDCP proponents would work with these regional and local
20 efforts to design proposed restoration areas to be compatible with and complement the goals of
21 creating a regional trail network and where feasible to adapt restoration proposals to incorporate
22 recreational amenities and opportunities in these areas.

23 Regional plans and those geared toward the management of specific areas, including the *Stone Lakes*
24 *National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island and Franks*
25 *Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land Management Plan, the Yolo*
26 *County General Plan, Lower Sherman Island Wildlife Area Land Management Plan, San Francisco Bay*
27 *Plan, Suisun Marsh Protection Plan, and Solano County General Plan Suisun Marsh Policy Addendum*
28 are primarily designed to preserve and enhance the natural resource and recreation qualities of
29 these areas. Implementing the BDCP alternatives may create disruptions related to facility and
30 restoration improvements. Proposed restoration areas in the Yolo Bypass, on Sherman Island, and in
31 Suisun Marsh would be designed to be compatible with and complement the current management
32 direction for these areas and would be required to adapt restoration proposals to meet current
33 policy established for managing these areas.

34 The BDCP would be constructed and operate in compliance with regulations related to boat
35 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
36 Department of Boating and Waterways), and federal (including the U.S. Coast Guard) boating law
37 enforcement. The alternative would be compatible with California State Land Commission
38 regulations related to recreational piers or marinas.

39 EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
40 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
41 alternative.

42 Alternative 9 would result in the construction of permanent and temporary features associated with
43 the proposed water conveyance facility across land governed by the general plans of Sacramento,
44 San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have policies related

1 to the protection of recreation resources and encourage the development of new water-based and
2 land-based recreation opportunities. Sacramento and San Joaquin Counties recognize the Delta as an
3 area of international importance and as a major recreational resource of these counties.

4 Construction activities that disrupt and degrade recreation opportunities in the study area would be
5 incompatible with policies designed to protect recreation resources, including those intended to
6 protect open space and natural areas and those that discourage development of public facilities and
7 infrastructure unless it is related to agriculture, natural resources and open space, and has
8 recreational value. Alternative 9 would not be incompatible with Yolo County and Solano County
9 policies because conveyance facilities would not be located in these areas.

10 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
11 physical consequence to the environment. The physical effects are discussed in impacts REC-1
12 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
13 the alternative with relevant plans and polices.

14 **Impact REC-13: Permanent Alteration of Recreational Boat Navigation as a Result of** 15 **Operating the Water Conveyance Facilities**

16 **NEPA Effects:** With operation of Alternative 9, boat passage and navigation would be affected to
17 varying degrees at each of the 14 waterway locations where an operable gate is planned. Table 15-
18 17 lists the affected waterways associated with each type of conveyance facility. Boat passage would
19 be unavailable at three waterway locations where a fish screen or an operable gate without a boat
20 passage facility would be constructed and no boat passage would be provided. Boats would be able
21 to pass the Threemile Slough operable gate when it is open; passage here would be restricted for
22 several hours twice per day. Boat passage would be unimpeded at the two locations where siphons
23 are planned to cross beneath the waterway.

1 **Table 15-17. Waterways Affected by Construction and Maintenance of Alternative 9 Conveyance**
 2 **Facilities**

Type of Conveyance Facility and Waterway Location
Operable Gate with Boat Passage Facility
Mokelumne River downstream of Lost Slough
Snodgrass Slough upstream of Delta Cross Channel
Georgiana Slough at Sacramento River
Connection Slough at Middle River
Railroad Cut at Middle River
Woodward Canal at Middle River
Fishermen's Cut at San Joaquin River
Old River at San Joaquin River
Meadow Slough
Victoria Canal at Old River
Operable Gate without Boat Passage Facility—Boat Passage When Gate Open
Threemile Slough near Sacramento River
Fish Screen and Operable Gates without Boat Passage
Delta Cross Channel at Sacramento River (Fish Screen)
San Joaquin River downstream of Old River
Middle River upstream of Victoria Canal
Dredging/Channel Reconfiguration
Middle River between Empire Cut and Victoria Canal (Dredging)
Victoria Canal / North Canal (Dredging)
Old River at Delta-Mendota Canal (Reconfigured Channel)

3
 4 Boat navigation could be enhanced by dredging on the two waterways where dredging and
 5 realignment of Old River are planned.

6 ***Operable Gates with Boat Passage Facilities***

7 At the 10 waterway locations where an operable gate with a boat passage facility is planned, boaters
 8 would no longer have unimpeded passage through the waterway but would instead be required to
 9 stop at the gate and wait to be directed through the boat passage facility. Wait times could be
 10 greater than 30 minutes at locations where boat traffic volume is high particularly during peak-use.
 11 For example, summer weekend and holiday boat traffic at the Old River gate site was in the range of
 12 250–400 boats per day and at the Snodgrass Slough and Railroad Cut gate sites was in the range of
 13 150–300 boats per day. Summer weekend afternoon boat traffic at these sites was as high as 50–80
 14 boats per hour. If estimated increases in boat traffic between 2010 and 2020 occur and continue
 15 beyond 2020 into the early long-term period, wait times at planned boat passage facilities could be
 16 longer than 30 minutes. (Plater and Wade 2002)

17 The rate at which boats could be passed through the passage facility would depend in part on the
 18 capacity of the passage facility chamber and other design factors. The skill of boat drivers at
 19 negotiating the passage facilities and the diversity of boat types and sizes using the facilities would
 20 also be factors in determining traffic flow and thus length of delays. Some of the high-traffic sites

1 also host a wide variety of boat types, with numerous large boats. Wait times would be expected to
2 be short at locations where boat traffic volume is low. At gate locations where boaters would be
3 delayed longer than 30 minutes, there would be an adverse effect on boating recreation.

4 A new connection for boaters would be created with the construction of a channel and boat passage
5 facility between the navigable portion of Meadow Slough and the Sacramento River. When the Delta
6 Cross Channel gate is closed, the expectation would be that most of the traffic that now uses the
7 Delta Cross Channel would be transferred to this location. This new connection may become the
8 preferred route between the Sacramento River and Meadow Slough, Snodgrass Slough, and the
9 Mokelumne River when the Delta Cross Channel is closed.

10 ***Operable Gates without Boat Passage Facilities***

11 At Threemile Slough, an operable gate would be installed without a boat passage facility but where
12 boats would be able to pass the gate when it was open. The gate would operate tidally which means
13 that the gate would be closed on the incoming or outgoing tides, depending on the operational
14 objective (fish migration control or salinity control) taking precedence at the time. In either mode of
15 operation, the gate would be closed for several hours twice per day, prohibiting boat passage.

16 No other practical route exists between this reach of the Sacramento River and the San Joaquin
17 River. If Threemile Slough were closed to boat passage, boaters wanting to travel between the
18 Sacramento River and the San Joaquin River would be required to make a detour of 20 miles to the
19 west around Sherman Island.

20 Many of the boats using Threemile Slough are launched from the Brannan Island State Recreation
21 Area boat launch, 1 mile east of the planned gate site. In addition, Outrigger Marina, on the opposite
22 bank of Threemile Slough from the State Recreation Area, draws a portion of its restaurant and fuel
23 dock patrons from the Sacramento River, and the Sacramento River is a destination for many of the
24 boats berthed at the marina. When the gate is closed, boaters would be unable to travel to or from
25 these locations and the Sacramento River.

26 Threemile Slough on the Sacramento River side of the gate does not provide space sufficient for a
27 large number of boats to wait for the gate to open, and the Sacramento River in this area has strong
28 winds and currents, making it an unsuitable place for most boats to moor. For these reasons, this
29 change in boat navigation would have an adverse effect on boating recreation.

30 ***Operable Gates without Boat Passage Facility and No Boat Passage***

31 The fish screen and modified gate without boat passage at the Delta Cross Channel would eliminate
32 boat access between the Delta Cross Channel and the Sacramento River because modifications
33 would lack provisions for boat passage. In combination with the closure of the gate at the new
34 connecting channel between the Sacramento River and Meadow Slough, 0.75 mile upstream, this
35 gate would eliminate the ability for most boaters to travel between this reach of the Sacramento
36 River and Snodgrass Slough, Meadow Slough, or the Mokelumne River.

37 The fish screen would occupy a portion of the Sacramento River channel along the east bank of the
38 river, restricting the width of the channel available for boat passage and potentially increasing
39 congestion in this area. For these reasons, this change in boat navigation would have an adverse
40 effect on boating recreation.

1 Because the Delta Cross Channel would no longer provide boat passage with implementation of this
2 alternative, the new Meadow Slough channel would become the preferred route between the
3 Sacramento River and Meadow Slough, Snodgrass Slough, and the Mokelumne River. The
4 expectation would be that most of the traffic that now uses the Delta Cross Channel would be
5 transferred to the new Meadow Slough channel.

6 ***San Joaquin River at Old River***

7 The operable gate planned for the San Joaquin River north of the head of Old River would prevent
8 boaters who launch at downstream locations on the San Joaquin River from traveling on the San
9 Joaquin River beyond Old River or into Old River because no boat passage would be provided. Dos
10 Reis Park launch ramp is 2.5 miles downstream, and the Haven Acres Resort boat ramp and guest
11 dock are 4 miles downstream. The nearest marinas and boat ramps in the Stockton area are more
12 than 13 miles downstream.

13 The gate would prevent boaters navigating from upstream areas of the San Joaquin River or from
14 Old River from moving downstream beyond the gate. The Mossdale Crossing Park boat ramp and the
15 Mossdale Marina guest dock are located about 2.5 miles upstream on the San Joaquin River.

16 Boat traffic volume at this location appears to average about 100 boats per day during weekends
17 and holidays based on surveys conducted by DWR in the 1990s (California Department of Water
18 Resources and Bureau of Reclamation 2005). However, given the relatively few ramps, marinas, or
19 other boating facilities in the vicinity and the availability of many unimpeded miles of the San
20 Joaquin River and Old River available to boaters on either side of this gate, this change in boat
21 navigation would not have an adverse effect on boating recreation.

22 ***Middle River Upstream of Victoria Canal***

23 The operable gate planned for Middle River just upstream of Victoria Canal would primarily prevent
24 boaters navigating from downstream on Middle River and waterways connecting Middle and Old
25 Rivers from traveling farther upstream because no boat passage would be provided. The only
26 boating facility in the vicinity is the Union Point Resort, about 0.5 mile downstream, which has a
27 restaurant and bar with guest dock but no boat berthing. Boat traffic volume at this location is light,
28 with fewer than 20 boats per day observed during surveys conducted by DWR in the 1990s
29 (California Department of Water Resources and Bureau of Reclamation 2005).

30 A few miles upstream of the gate site, the waterway becomes increasingly narrow and shallow,
31 which limits use to small fishing boats and nonmotorized boats (e.g., canoes and kayaks). Boaters
32 may access this reach of Middle River from upstream by launching at a county park ramp on the San
33 Joaquin River. In addition, since 1987, DWR has installed a temporary rock barrier at this location
34 from May through September of each year. No boat passage is provided at the rock barrier.
35 Therefore, boat passage is blocked each year throughout the primary summer boating season, as
36 well as during part of the spring and fall seasons. Because of the low level of boating activity on this
37 reach of Middle River, the availability of public launch sites upstream, and the seasonal nature of the
38 effect, placement of the operable gate planned for Middle River just upstream of Victoria Canal effect
39 on recreation would be minor.

40 ***Dredging and Channel Reconfiguration***

41 Dredging is planned for Middle River between Empire Cut and Victoria Canal, a distance of about 7
42 miles. Studies to date of Railroad Cut at Middle River and on Victoria Canal / North Canal

1 (immediately south of the dredging area, and the probable source or destination for much of the
2 Middle River boat traffic in this area) indicate that weekend and holiday boat traffic volume on this
3 reach of Middle River is high. Although the dredging is not intended to widen the channel, the
4 deepening of the channel would eliminate shallow areas and reduce areas where aquatic vegetation
5 could become established. This would have a beneficial effect on boat navigation.

6 Dredging is also planned for the length of Victoria Canal / North Canal, terminating at the operable
7 gate at the west end of the canals. The dredging would eliminate the narrow, vegetated berm that
8 separates the two canals for much of their lengths. Boaters may consider the berm separating the
9 two canals to be desirable because it provides a separation for the boat traffic on the two canals and
10 facilitates the normal traffic pattern whereby eastbound traffic uses North Canal and westbound
11 traffic uses Victoria Canal. The berm also serves to reduce boat wakes from traffic on the adjacent
12 canal, which improves waterskiing conditions. However, the widening and deepening of the
13 waterway could have a beneficial effect on boat navigation by creating a less restrictive channel and
14 discouraging aquatic vegetation growth. Overall, loss of the central berm from the dredging would
15 have an adverse effect on boating recreation.

16 Reconfiguration of the Old River channel at the mouth of the Delta-Mendota Canal inlet is planned to
17 close off the inlet from Old River (the inlet would receive water from Clifton Court Forebay via a new
18 canal). The inlet would be blocked by fill between the Tracy Fish Facility and Fabian Tract and
19 between Fabian Tract and the tract south of Clifton Court Forebay. A new Old River channel would
20 be cut across the tip of Fabian Tract. This new channel would allow boaters to continue to pass
21 between the Rivers End Marina & Storage and numerous cabins and docks near the marina and Old
22 River to the north of Fabian Tract. Two small islands with cabins and boat docks located in the area
23 to be filled would be eliminated by the channel reconfiguration, and a wider channel between the
24 Rivers End Marina & Storage inlet and Old River would be created. The effect on boat recreation
25 would be beneficial.

26 ***Changes in Flow Velocity during Gate Operations***

27 Effects from the operation of operable gates would result in a substantial change and reduction of
28 use of established recreational activities. At the 10 waterway locations where an operable gate with
29 a boat passage facility is planned, boaters would no longer have unimpeded passage through the
30 waterway. At locations where an operable barrier is proposed without boat passage, boaters would
31 lose access to waterways typically traveled. Mitigation Measures REC-14a and REC-14b would be
32 available to reduce these effects.

33 As discussed under Impact REC-3, BDCP proponents would contribute funds for the construction of
34 new recreation opportunities as well as for the protection of existing recreation opportunities as
35 outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in
36 funding the expansion of state recreation areas in the Delta as described in Recommendation DP
37 R13 of the Delta Plan. For the reopening of Brannan Island State Recreation Area, completion of
38 Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
39 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
40 concurrent with, commencement of construction of the BDCP. This commitment serves to
41 compensate for the loss of recreational opportunities within the project area by providing a
42 recreational opportunity downstream/upstream in the same area for the same regional recreational
43 users.

1 BDCP would also contribute funds to further the DBW's aquatic weed control programs in the Delta.
 2 Enhanced ability to control these invasive vegetation would lead to increased recreation
 3 opportunities which would compensate for the loss of recreational opportunities within the project
 4 area by providing a recreational opportunity downstream/upstream in the same area for the same
 5 regional recreational users. The funds will be transferred prior to, or concurrent with,
 6 commencement of construction of the BDCP. This commitment is described in Appendix 3B,
 7 *Environmental Commitments*.

8 Because of the permanent loss of boat passage and navigation and the delays associated with
 9 operable gates, these effects are considered adverse.

10 **CEQA Conclusion:** Impacts from the operation of operable gates would result in a substantial change
 11 and reduction of use of established recreational areas and activities. At the 10 waterway locations
 12 where an operable gate with a boat passage facility is planned, boaters would no longer have
 13 unimpeded passage through the waterway. At locations where an operable barrier is proposed
 14 without boat passage, boaters would lose access to waterways typically traveled. These effects
 15 would be reduced with the implementation of Mitigation Measure REC-14a and Mitigation Measure
 16 REC-14b as well as other commitments made by the BDCP proponents, but not to a less-than-
 17 significant level. Therefore, these effects would be considered significant and unavoidable.

18 **Mitigation Measure REC-13a: Minimize Congestion at Passage Facilities**

19 To reduce the impacts on boater's recreation experiences and to facilitate boat passage at the
 20 gate locations, the following will be implemented at the time of gate construction.

- 21 ● Boat passage facilities will be designed to accommodate the average peak number of boaters
 22 and the range of boat types that use the affected waterway and minimize wait times.
- 23 ● To provide for a safe and convenient place to wait for the gate to open, floating docks, each
 24 200 feet long and 12 feet wide, will be provided along the shoreline on each side of the boat
 25 passage facility to provide boaters a location to wait and use the facility. Mooring bits will be
 26 provided on the docks. Boaters may also choose to wait in the channel on either side of the
 27 gate.

28 **Mitigation Measure REC-13b: Implement Boater Information and Education Program on** 29 **Operation of Barriers and Boat Passage Facilities**

30 Before and during project operation, a boater information program will be implemented to
 31 provide information and details on the locations and operation of barriers throughout the study
 32 area. The program will include education on the three types of barriers (with boat locks, without
 33 boat locks, and the Threemile Slough barrier which would be passable when it is not operating).
 34 Boaters will be informed of typical timing of gate operations (as in the case of Threemile Slough
 35 operable barrier), potential alternative navigation routes during closures, and on procedures for
 36 waiting and using the boat passage facilities. This program will use a variety of printed media
 37 (e.g., posters, brochures) to provide the necessary information, and the media will be displayed
 38 and distributed at publicly accessible boat access facilities, including public and commercial boat
 39 ramps and marinas in the study area. The information will also be provided for dissemination on
 40 the websites of public recreation and boater safety organizations and agencies (e.g., DPR, CDBW,
 41 CDFW, U.S. Coast Guard, marine patrol agencies). Additional means of dissemination, such as

1 distribution of materials or presentations at public meetings and events hosted or participated
2 in by these organizations and agencies, will be used when the opportunity arises.

3 **Impact REC-14: Substantial Reduction in Other Recreation Opportunities as a Result of the**
4 **Operation of the Water Conveyance Facilities**

5 **NEPA Effects:** Permanent speed zone restrictions in the vicinity of operable gate and boat passage
6 facilities would include speed limits that could adversely affect high-speed recreation opportunities,
7 such as waterskiing, wakeboarding, and tubing, to the point they would be effectively eliminated.
8 Table 15-18 presents the waterways where recreation would be affected. Railroad Cut, Woodward
9 Cut, and Victoria Canal are popular wakeboarding and waterskiing destinations.

10 **Table 15-18. Waterways where Recreation would be Affected by Operation and Maintenance of**
11 **Alternative 9 Conveyance Facilities (Early Long-Term)**

Type of Conveyance Facility and Waterway	Primary Boating Activity
Operable Gate with Boat Passage Facility	
Railroad Cut at Middle River	Waterskiing and Wakeboarding
Woodward Canal at Middle River	Waterskiing and Wakeboarding
Operable Gate without Boat Passage Facility—Boat Passage when Gate is Open	
Meadow Slough	Mooring
Threemile Slough near Sacramento River	Cruising (Pass-through Traffic)
Fish Screen and Operable Gates without Boat Passage	
Victoria Canal at Old River	Waterskiing and Wakeboarding

Sources: California Department of Boating and Waterways 2003.

12
13 At Brannan Island State Recreation Area, the gate on Threemile Slough and associated structures
14 and access roadway would require construction on State Recreation Area lands located along the
15 Threemile Slough waterway. The location of the operable gate at Threemile Slough is in a primarily
16 undeveloped portion of the State Recreation Area where recreational use is low. In addition, only a
17 small percentage of the approximately 1-mile-long State Recreation Area shoreline on Threemile
18 Slough would be affected. The portion of shoreline affected is the most distant from developed
19 campsites, where most informal use in the undeveloped area is likely to originate.

20 Other than levee improvements, there would be no permanent changes to the lands on the Sherman
21 Island side of the planned gate structure. No recreational activity is known to occur in that area.
22 Road access via East Sherman Island Levee Road to Outrigger Marina would be restored via the
23 existing levee road following completion of levee work. For these reasons, the potential effect of
24 Alternative 9 on recreation opportunities at Brannan Island State Recreation Area or the Sherman
25 Island side of Threemile Slough would be minimal.

26 A new connection for boaters would be created with the construction of a channel and boat passage
27 facility between the navigable portion of the Meadow Slough and the Sacramento River. This
28 connection would provide for new boating opportunities within Delta Meadows; however, the
29 introduction of a potential increase in motor boating activities within Delta Meadows may degrade
30 the recreation opportunities and experience for mooring.

1 Operation of the operable gates would result in permanent changes to recreation opportunities
 2 including recreational boating activities such as waterskiing and wakeboarding. Mitigation
 3 Measures REC-13a and REC-13b would be available to reduce these effects.

4 As discussed under Impact REC-3, BDCP proponents would contribute funds for the construction of
 5 new recreation opportunities as well as for the protection of existing recreation opportunities as
 6 outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in
 7 funding the expansion of state recreation areas in the Delta as described in Recommendation DP
 8 R13 of the Delta Plan. For the reopening of Brannan Island State Recreation Area, completion of
 9 Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
 10 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
 11 concurrent with, commencement of construction of the BDCP. This commitment serves to
 12 compensate for the loss of recreational opportunities within the project area by providing a
 13 recreational opportunity downstream/upstream in the same area for the same regional recreational
 14 users. These commitments are further described in Appendix 3B, *Environmental Commitments*.

15 BDCP would also contribute funds to further the DBW's aquatic weed control programs in the Delta.
 16 Enhanced ability to control these invasive vegetation would lead to increased recreation
 17 opportunities which would compensate for the loss of recreational opportunities within the project
 18 area by providing a recreational opportunity downstream/upstream in the same area for the same
 19 regional recreational users. The funds will be transferred prior to, or concurrent with,
 20 commencement of construction of the BDCP. This commitment is described in Appendix 3B,
 21 *Environmental Commitments*.

22 Due to the permanent speed zone restrictions in the vicinity of operable gate, and speed limits at
 23 boat passage facilities that could adversely affect high-speed recreation opportunities, such as
 24 waterskiing, wakeboarding, and tubing, at a number of existing recreational areas, these would be
 25 considered adverse effects.

26 **CEQA Conclusion:** Operation of the operable gates would result in permanent changes to recreation
 27 opportunities including recreational boating activities such as waterskiing and wakeboarding. These
 28 effects are significant. Mitigation Measures REC-13a and REC-13b as well as other commitments
 29 made by the BDCP proponents would reduce these effects, but not to a less-than-significant level.
 30 Therefore, these effects are considered significant and unavoidable.

31 **15.3.4 Cumulative Analysis**

32 **15.3.4.1 Assessment Methodology**

33 This section analyzes the potential for the BDCP to contribute to cumulative impacts on recreational
 34 facilities, opportunities, and resources in the Delta. This section first describes the cumulative
 35 setting for recreation in the Delta to identify the effects of other foreseeable projects and programs
 36 on recreational opportunities and resources. This section then describes the contribution of the
 37 impact mechanisms associated with the BDCP to determine if they would make a considerable
 38 contribution to the impacts on recreation in the Delta. Table 15-19 summarizes other foreseeable
 39 projects and programs that may affect recreation resources to provide a context for the evaluation
 40 of the cumulative effects on recreation opportunities. This list has been drawn from a more
 41 substantial compilation of past, present, and reasonably foreseeable programs and projects included

1 in Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative*
 2 *Impact Conditions.*

3 **Table 15-19. Recreation Effects of Plans, Policies, and Programs Considered for Cumulative Analysis**

Agency	Program/ Project	Status	Description of Program/Project	Recreation Effect
California Department of Water Resources	Delta Levees Flood Protection Program	Ongoing	This is a grants program that works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta including water supply, habitat, and wildlife. The program, through its two main components (Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects), works with the local agencies to maintain, plan, and complete levee rehabilitation projects.	Maintenance and rehabilitation of levees in the Delta will require construction that may temporarily disrupt recreational access to Delta waterways and fishing locations in the footprint of proposed repair and rehabilitation projects.
California Department of Water Resources	Dutch Slough Tidal Marsh Restoration Project	EIR certified in 2010, project is ongoing.	The Dutch Slough Tidal Marsh Restoration Project, located near Oakley in Eastern Contra Costa County, would restore wetland and uplands, and provide public access to the 1,166-acre Dutch Slough property owned by the Department of Water Resources (DWR). The property is composed of three parcels separated by narrow man-made sloughs.	The project would have a net benefit on recreational opportunities (DWR 2008: 3.11-12).
Department of Water Resources	Clifton Court Forebay Fishing Facility	Initial Study/ Proposed Mitigated Negative Declaration Completed in 2013.	The proposed project consists of installing a fishing pier extending approximately 500 feet into Clifton Court Forebay that is compliant with the Americans with Disabilities Act (ADA). Other appurtenant features to be installed include a staging area; concrete pad and retaining wall; security fencing, and gates; ADA-compliant public restroom; bicycle rack; equipment shed; ADA-compliant boat dock and road section on West Canal; two ADA-compliant parking spaces next to the Clifton Court Forebay public entrance gate; and lighting and signage.	The project would expand recreational fishing opportunities (DWR 2013).

Agency	Program/ Project	Status	Description of Program/Project	Recreation Effect
Bureau of Reclamation California and California Department of Water Resources	South Delta Improvements Program	Ongoing program. Final EIR/EIS 2006	Project to increase water levels and improve circulation patterns and water quality while improving operational flexibility of the State Water Project	No adverse effects on recreation would result from the program (California Department of Water Resources and Bureau of Reclamation 2005:7.4-1).
California Department of Fish and Game (now CDFW), U.S. Fish and Wildlife Service, and Bureau of Reclamation	Suisan Marsh Habitat Management, Preservation, and Restoration Plan (SMP)	Final EIS/EIR 2011	The SMP is intended to balance the benefits of tidal wetland restoration with other habitat uses in the Marsh by evaluating alternatives that provide a politically acceptable change in Marsh-wide land uses, such as salt marsh harvest mouse habitat, managed wetlands, public use, and upland habitat.	Effects on recreational opportunities would be beneficial or less than significant (California Department of Fish and Game et al. 2011:ES-28).
Bureau of Reclamation	Delta-Mendota Canal/California Aqueduct Intertie	Program under development. Final EIS in 2009. Record of Decision (ROD) in 2009	The purpose of the intertie is to better coordinate water delivery operations between the California Aqueduct (state) and the Delta-Mendota Canal (federal) and to provide better pumping capacity for the Jones Pumping Plant. New project facilities include a pipeline and pumping plant	No effects on recreation would result from the project (Bureau of Reclamation 2009:1-13).
Sacramento County	Sacramento County 2030 General Plan	The general plan document provides a template for growth in Sacramento County to 2030, including the portion of the County in the Delta. The general plan was approved in 2011, buildout is ongoing.	The plan identifies a potentially significant effect on recreational resources that will be mitigated to less than significant through in-lieu fees required under buildout to mitigate for additional demand for recreational facilities.	Effects on recreational facilities would be less than significant after mitigation (Sacramento County 2011:1-11).

Agency	Program/ Project	Status	Description of Program/Project	Recreation Effect
California Department of Water Resources and Bureau of Reclamation	Franks Tract	Delayed (California Department of Water Resources 2012)	DWR and Reclamation propose to implement the Franks Tract Project to improve water quality and fisheries conditions in the Delta. DWR and Reclamation are evaluating installing operable gates to control the flow of water at key locations in the Delta. Boat passage facilities would be included to allow for passing of watercraft when the gates are in operation.	The scoping report identifies the potential for adverse effects on recreational boating (California Department of Water Resources 2009b:16)
NMFS/ USFWS	2008 and 2009 Biological Opinions	Ongoing.	The Biological Opinions issued by NMFS and USFWS establish certain RPAs to be implemented requiring habitat restoration	Construction of habitat may temporarily disrupt recreational access to Delta waterways and fishing locations in the footprint of proposed habitat restoration areas.

1

2 The cumulative effect of ongoing projects, programs, and plans under the No Action Alternative is

3 not anticipated to substantially change recreation opportunities or experiences in the Delta region.

4 Effects on recreation would either be beneficial, or short-term disruptions that would be considered

5 less than significant. Temporary adverse effects on water-dependent recreation include restrictions

6 on boat passage and navigation and a decrease in recreational fishing as a result of loss of access to

7 the water resources during construction and operation of in-water projects. Environmental

8 conditions occurring within upstream rivers and reservoirs, the Delta, and ocean may adversely

9 affect the abundance of sport-fish harvested within the Delta. Ongoing resources management plans

10 may benefit water-dependent recreation by controlling nonnative aquatic vegetation, which would

11 help maintain access to some Delta waterways that could otherwise be inaccessible because of the

12 presence of dense aquatic vegetation. Ongoing restoration and environmental enhancement projects

13 may benefit non-consumptive recreation within the Delta and enhance wildlife viewing, non-

14 motorized boating, and other passive recreation opportunities by increasing wildlife habitat and

15 public access. Land-based recreation activities are expected to increase in response to changes in

16 local and regional demand and land management plans that may lead to the installation of additional

17 recreational facilities. Projects and programs upstream of the Delta would have beneficial effects on

18 recreation opportunities and experiences by increasing the abundance of sport fish. Conditions

19 under the No Action Alternative would have more years in which reservoir levels fall below the

20 recreation threshold relative to the existing condition due to sea level rise, climate change, and

21 future no action conditions. The resulting inundation of many water-based facilities in the Delta

22 would cause long-term adverse effects on recreation opportunities and experiences, but it is not

23 possible to specifically define the exact extent of the changes due to future no action operations

24 using model simulation results.

1 This survey of ongoing and foreseeable projects and programs in the Delta reveals that there is not
2 an ongoing or cumulatively significant loss of recreational resources or opportunities in the Delta.
3 While some projects such as levee repair projects or habitat restoration may temporarily impair or
4 disrupt particular recreational facilities or locations, upon completion such projects do not result in
5 a loss of recreational resources. Habitat restoration projects such as the creation of additional tidal
6 marsh tend to have a net benefit on some recreational resources such as fishing opportunities
7 because these projects increase the abundance of fish and areas that are useful for fishing. In
8 addition, temporary effects simply displace recreational activities to alternative venues that are
9 abundant in the Delta. The Delta Protection Commission performed an inventory of recreational
10 facilities (1997), which describes 36 identified fishing access sites in the Delta and 106 marinas in
11 the Delta.

12 Foreseeable land development in the region may result in some loss of recreational resources,
13 however under typical general plan policies and state law, payment of in-lieu fees or dedication of
14 land for parks and recreation is required for subdivisions for development (e.g., Cal. Government
15 Code Section 66477).

16 The Delta and vicinity are within a highly active seismic area, with a generally high potential for
17 future earthquake events along nearby and/or regional faults, and with the probability for such
18 events increasing over time. Based on the location, extent and non-engineered nature of many
19 existing levee structures in the Delta area, the potential for significant damage to, or failure of, these
20 structures during a local seismic event is generally moderate to high. Levees constructed on
21 liquefiable foundations are expected to experience large deformations (in excess of 10 feet) under a
22 moderate to large earthquake in the region. Earthquake damage could result in breaching/failure of
23 existing levees within the Delta area, with a substantial number of these structures exhibiting
24 moderate to high failure probabilities. The most immediate and significant effect to water quality
25 under such a scenario would be the influx of large volumes of seawater and/or brackish water into
26 the Delta, which would alter the “normal” balance of freshwater/seawater flows and result in
27 flooding of the associated islands. The corresponding shift in Delta water quality conditions would
28 be characterized by an increase in salinity levels, including specific associated constituents such as
29 bromide (which affects total dissolved solids concentrations and can contribute to the formation of
30 undesirable chemical byproducts in treated drinking water). (See Appendix 3E, *Potential Seismic and
31 Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion). This could result in
32 permanent displacement of existing, well-established public use or private commercial recreation
33 facilities as well as result in long-term reduction of recreation opportunities, recreational navigation
34 opportunities and recreational fishing opportunities. To reclaim land or rebuild levees after a
35 catastrophic event due to climate change or a seismic event would potentially also result in adverse
36 impacts to recreational resources. While similar risks would occur under implementation of the
37 action alternatives, these risks may be reduced by BDCP-related levee improvements along with
38 those projects identified for the purposes of flood protection in Table 15-19.

39 **15.3.4.2 Action Alternatives**

40 The following analysis reviews the contribution of the alternatives to this cumulative setting. This
41 analysis first briefly reviews the contribution of impacts that are not adverse. While, in some
42 instances, individual effects that are less than significant may cumulatively result in significant
43 effects that are “cumulatively considerable” (see CEQA Guidelines Section 15065[a][3]), here,
44 because there is not a cumulatively significant loss of recreational resources or opportunities in the
45 Delta, these effects do not have the potential to result in a cumulatively considerable impact.

1 Accordingly, the contribution of the following impacts are not carried forward for detailed analysis
2 for their contribution to the cumulative setting:

- 3 • **Impact REC-5: Result in long-term reduction of recreational fishing opportunities as a**
4 **result of the operation of the proposed water conveyance facility**
- 5 • **Impact REC-6: Cause a change in reservoir or lake elevations resulting in substantial**
6 **reductions in water-based recreation opportunities and experiences at north- and south-**
7 **of-Delta reservoirs**
- 8 • **Impact REC-7: Result in long-term reduction in water-based recreation opportunities as a**
9 **result of maintenance of the proposed water conveyance facilities**
- 10 • **Impact REC-8: Result in long-term reduction in land-based recreation opportunities as a**
11 **result of maintenance of the proposed water conveyance facilities**
- 12 • **Impact REC-9: Result in long-term reduction in fishing opportunities as a result of**
13 **implementing Conservation Measures 2-21**
- 14 • **Impact REC-10: Result in long-term reduction in boating-related recreation opportunities**
15 **as a result of implementing Conservation Measures 2-21**
- 16 • **Impact REC-11: Result in long-term reduction in upland recreational opportunities as a**
17 **result of implementing Conservation Measures 2-21**

18 Impact REC-5 analyzes the potential for long-term reduction of recreational fishing opportunities as
19 a result of operating the proposed water conveyance facility. Entrainment, spawning, rearing and
20 migration may affect non-covered fish species that are popular for recreational fishing, but will
21 typically be limited to specific rivers and not affect the population of a species as a whole, so it
22 would not adversely affect recreational fishing.

23 Impact REC-6 analyzes the potential effects on water-based recreation at north and south-of-Delta
24 reservoirs based on the predicted future operational conditions implemented under the BDCP
25 modeled through CALSIM. Water-based recreation is primarily dependent on water levels in the
26 relevant reservoirs and accordingly is not subject to cumulative effects in same manner as other
27 resources. The impact analysis for REC-6 incorporates mitigation where necessary, and identifies no
28 adverse effects after mitigation.

29 Impact REC-7 describes the potential for intermittent maintenance of conveyance facilities to
30 disrupt water-based recreation. Because these activities are transitory in nature and would not
31 substantially affect adjacent recreational opportunities, they would not combine with the effects of
32 other projects to result in adverse cumulative effects on recreation.

33 Impact REC-8 analyzes the potential effect on land-based recreation associated with maintenance of
34 proposed conveyance facilities. These activities would occur in the conveyance right-of-way and
35 therefore would not disrupt adjacent or nearby recreational facilities. Because these effects would
36 not occur in recreational opportunity areas they would not have the potential to combine with the
37 effects of other projects to result in cumulative and adverse effects on recreation.

38 Impact REC-9 describes the potential changes to fishing opportunities that would result from the
39 conservation components. Because implementing the proposed conservation components would be
40 expected to provide beneficial effects on aquatic habitat and fish abundance this impact would result

1 in a beneficial effect and does not have the potential to contribute to cumulatively significant
2 impacts on fishing.

3 Impact REC-10 describes the effect that implementation of conservation measures would have on
4 recreational boating opportunities. During construction, implementation of conservation measures
5 may have localized adverse effects on recreational boating, but this effect would be transitory and is
6 not considered significant. During the long-term, conservation measures would lead to an enhanced
7 boating experience by expanding the extent of navigable waterways available to boaters, improving
8 and expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
9 navigation. Because construction-related effects are temporary and because the overall effect is
10 beneficial, this impact does not have the potential to contribute to a cumulative effect on
11 recreational boating, given the diversity and abundance of alternative boating venues in the Delta.

12 Impact REC-11 describes the effect of conservation measures on upland recreation opportunities.
13 While restoration activities may disrupt or displace some locations for upland recreation such as
14 upland hiking, nature viewing, and photography, the conservation measures would also restore or
15 enhance new potential sites for upland recreation and the measures would improve the quality of
16 existing recreational opportunities adjacent to areas modified by the conservation measures. The
17 combined effect on upland recreation is considered less than significant. Because the combined
18 effect of the conservation measures would not diminish upland recreation opportunities, this impact
19 would not contribute to cumulative effects on upland recreation.

20 **Impact REC-16: Cumulative Displacement of Recreational Facilities**

21 ***Alternative 9***

22 ***NEPA Effects:*** Construction of Alternative 9 fish screens and intakes for CM1 would result in the
23 direct permanent loss of well-established recreation facilities: Boathouse Marina, Walnut Grove
24 public guest dock, and Boon Dox guest dock, as described in Impact REC-1. While this project-level
25 effect is adverse, it would not contribute to a cumulatively considerable loss of recreational
26 resources in the Delta. The 106 identified marinas in the Delta provide an abundance of alternative
27 venues for boating and mooring (Delta Protection Commission 1997). Foreseeable projects and
28 programs identified in Table 15-19 do not typically identify adverse effects on recreation that could
29 combine with this impact to result in a cumulative and adverse effect. This impact would not
30 contribute to a cumulative and adverse loss of recreational facilities.

31 ***CEQA Conclusion:*** Because the Delta has an abundance of alternative venues for boating and
32 mooring, the loss of recreational facilities under Alternative 9 would not contribute to a
33 cumulatively significant loss of recreational resources.

34 **Impact REC-17: Temporary Disruption of Recreation Opportunities and Experiences as a** 35 **Result of Construction Projects in the Delta**

36 ***All Alternatives***

37 ***NEPA Effects:*** Construction of conveyance facilities would result in temporary and adverse
38 disruptions of recreational opportunities and experiences under all BDCP Alternatives, as described
39 in Impact REC-2. Specific effects include construction noise that would diminish the quality of the
40 recreational experience and long-term loss of access to some facilities. While some mitigation is
41 available such as noise abatement, this mitigation would not avoid all effects in all instances.

1 Accordingly, Impact REC-2 is considered adverse for these alternatives. While the project-level
2 impact would be adverse, the temporary loss of recreational facilities and quality would simply
3 displace recreation to alternate venues that are accessible or higher in quality. While other ongoing
4 projects and programs may also temporarily displace or diminish recreational opportunities and
5 experiences, the size of the Delta and the diversity of recreational venues identified in the inventory
6 of recreational facilities indicates the combined effect would not be cumulative and adverse (see
7 Delta Protection Commission 1997).

8 **CEQA Conclusion:** Because the Delta has a diversity of fishing and boating venues, the temporary
9 loss of recreation facilities and recreational quality associated with the BDCP would not contribute
10 to a cumulatively considerable effect. Temporary loss of access and diminished recreational quality
11 would be expected to displace recreation to abundant alternative venues in the region. The BDCP
12 would not result in a cumulatively considerable contribution to a cumulatively significant impact on
13 recreational opportunities and resources.

14 **Impact Rec-18: Temporary Alteration of Recreational Navigation**

15 **All Alternatives**

16 **NEPA Effects:** Impact REC-3 identifies adverse effects on recreational navigation under all BDCP
17 Alternatives. Specific effects include navigational delays and disruption of some high-speed
18 recreation such as waterskiing and wakeboarding. While this effect would be temporary, it is
19 considered adverse because in the affected locations, the recreation activities would be entirely
20 displaced. While it is possible that other foreseeable projects may result in localized disruption of
21 recreational navigation, these effects would not combine to result in a cumulative and adverse loss
22 of recreational navigation opportunities. Because motorized boaters are by nature mobile, and
23 because the Delta offers alternative venues for high-speed boating, this recreational activity could be
24 pursued at other locations, which are anticipated to be available and abundant. The California Delta
25 Chambers and Visitors Bureau identifies numerous venues for waterskiing and wakeboarding
26 (2010b).

27 **CEQA Conclusion:** The BDCP would result in significant and unavoidable temporary effects on
28 recreational navigation under all alternatives. Because the Delta offers numerous alternate venues
29 for wakeboarding and waterskiing, and because other foreseeable projects and programs do not
30 identify significant effects on recreation, this impact would not contribute to a cumulatively
31 considerable effect on recreational navigation.

32 **Impact REC-19: Temporary Effects on Recreational Fishing**

33 **All Alternatives**

34 **NEPA Effects:** Under all alternatives, effects on sport fish species would be less than significant, but
35 construction would result in a temporary but long-term disruption of some recreational fishing
36 locations, as described in Impact REC-4. The alternatives vary primarily according to the number of
37 intakes, and thus the range of fishing locations that would be affected. Although the potential impact
38 on covered and non-covered sport fish species from construction activities would not be adverse
39 because the BDCP would include several environmental commitments to avoid and minimize
40 possible water quality and other temporary construction-related disturbances, the overall
41 experience for anglers would be degraded because of elevated noise and degraded visual conditions.
42 In some instances, construction would last up to 5 years, resulting in a temporary but adverse

1 disruption of recreational fishing for anglers and other recreational fishermen. Other foreseeable
2 projects and programs may result in some temporary effects on fishing quality at localized fishing
3 opportunities resulting from construction noise or loss of access. However, the Delta contains a wide
4 range of identified fishing venues. The Delta Protection Commission identified 36 fishing access
5 points in the Delta (Delta Protection Commission 1997). Additionally, informal access points also
6 likely occur throughout the Delta. Collectively, the diversity of fishing venues and temporary nature
7 of these effects indicates that while the localized effect may be adverse, this effect would not result
8 in a cumulative and adverse loss of recreational fishing opportunities in the Delta.

9 **CEQA Conclusion:** The BDCP would result in significant and unavoidable temporary effects on
10 fishing by disrupting access or degrading fishing quality through construction-generated noise
11 under all alternatives. Because the Delta offers numerous alternate venues for fishing, this
12 temporary impact would not contribute to a cumulatively considerable loss of fishing quality or
13 access.

14 **Impact REC-20: Permanent Alteration of Recreational Boat Navigation**

15 **Alternative 9**

16 **NEPA Effects:** Under Alternative 9 the construction of conveyance facilities would result in adverse
17 effects on recreational boat navigation as a result of the construction of operable gates, as described
18 in Impact REC-14. While construction of boat passage facilities and implementation of Mitigation
19 Measures REC-14a and REC-14b would reduce this effect, the effect would remain adverse. While
20 most foreseeable projects in the Delta would not result in permanent alteration or disruption of
21 navigation, some planned projects such as Franks Tract, may result in adverse effects on
22 recreational boating through construction of similar operable gates (California Department of Water
23 Resources 2009a:16). Collectively these effects would result in a cumulative and adverse alteration
24 of recreational boat navigation.

25 **CEQA Conclusion:** Alternative 9 would result in a significant and unavoidable impact associated
26 with alteration of recreational navigation where operable gates would be constructed. While some
27 boat passage facilities would be constructed, delays would nonetheless result. Because the
28 construction of other operable gates at Franks Tract has the potential to disrupt recreational boat
29 navigation a significant cumulative condition may result from the combined effects of these projects.
30 While construction of boat passage facilities and implementation of Mitigation Measures REC-14a
31 and REC-14b would reduce the contribution of the BDCP, Impact REC-14 would remain significant
32 and unavoidable, thus contributing to a cumulatively significant impact.

33 **Impact REC-21: Changes to Other Recreation Opportunities**

34 **Alternative 9**

35 **NEPA Effects:** Under Alternative 9 permanent speed zone restrictions in the vicinity of operable gate
36 and boat passage facilities would limit high-speed recreation opportunities, such as waterskiing,
37 wakeboarding, and tubing at three locations, as described in Impact REC-13. Table 15-18 identifies
38 specific facilities that would be affected. Additional effects include the potential loss of one mooring
39 facility and one location supporting pass-through traffic. While project-level effects would be
40 reduced with Mitigation Measures REC-14a and REC-14b, the effect would remain adverse despite
41 mitigation. However, because there are numerous alternative venues that support recreational high-
42 speed boating, this loss is not expected to contribute to a cumulatively significant effect. In addition,

1 most other foreseeable projects and programs identify impacts on recreation as less-than-
 2 significant. Because there are alternative venues for waterskiing and wakeboarding, and because
 3 other foreseeable projects would not result in a cumulative loss of these opportunities, this impact
 4 would not be adverse.

5 **CEQA Conclusion:** Alternative 9 would result in significant and unavoidable effects on high-speed
 6 recreational boating at three locations where speed-restrictions would be enforced, and would also
 7 result in the loss of one mooring facility and one portion of Threemile Slough to boat traffic. Because
 8 the number of facilities lost is small in relation to the number of recreational venues in the Delta,
 9 and because other foreseeable projects identified in Table 15-19 above do not typically identify
 10 significant effects on recreation, this contribution to the loss of venues for high-speed boating would
 11 not be a cumulatively considerable contribution to a cumulatively significant impact.

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12 **15.4.2 Personal Communications**

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