

Chapter 15

Recreation

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 1-9). 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 State Water Project (SWP) and Central Valley Project (CVP) Export Service Areas, including a discussion of participation in Delta recreation.

15.0 Summary Comparison of Alternatives

A summary comparison of important recreation impacts is provided in Figure 15-0. This figure provides information on the magnitude of the most pertinent and quantifiable recreation impacts that are expected to result from implementation of the alternatives. Important impacts to consider include displacement of existing recreation facilities and the reduction of recreation opportunities.

As depicted in Figure 15-0, construction of some alternatives would result in the displacement of existing well-established recreation facilities available for public access. Alternative 9 would result in the greatest number of recreation sites (six) displaced by the water conveyance facilities. Alternatives 1A, 1C, 2A, 2B, 2C, 3, 5, 6A, 6C, 7, and 8 would result in the displacement of no recreation sites. Alternatives 4, 4A, 2D, and 5A would result in the displacement of two recreation sites.

Each alternative, with the exception of the No Action Alternative, would reduce recreation opportunities at some sites as a result of the construction of the water conveyance facilities. Alternatives 1B, 2B, and 6B would result in the greatest number of sites (18) with reduced opportunities. Alternative 9 would result in reduced opportunities at the fewest sites, three. Alternatives 4, 4A, 2D, and 5A would result in the reduction of recreation opportunities at eight sites.

Table ES-8 in the Executive Summary provides a summary of all impacts disclosed in this chapter.

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. Figure 15-1 identifies public and private recreational facilities in and near the study area.

1 Recreational Activities and Opportunities in the Study Area

2 The Delta is a maze of channels and islands at the confluence of the Sacramento and San Joaquin
3 Rivers. It encompasses the largest estuary system on the West Coast. The Delta region is a 1,150-
4 square-mile area that provides more than 500 miles of navigable waterways, equaling more than
5 57,000 navigable surface acres (California Department of Parks and Recreation's Division of Boating
6 and Waterways 2003). This vast network of rivers, channels, sloughs, and islands provides a unique
7 recreation resource in California.

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

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

23 This section provides a description of the recreational activities and facilities in the statutory Delta,
24 as well as a discussion of Delta recreation users and estimates of participation in Delta recreation
25 activities.

26 Water-Based Recreation Activities

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

32 **Boating**

33 Most recreational boating use is by small (under 26 feet long) powerboats (California Department of
34 Parks and Recreation 1997; California Department of Parks and Recreation's Division of Boating and
35 Waterways 2003), although larger cruising boats and houseboats are components of boating use in
36 the Delta. Common powerboating activities in the Delta are cruising (exploring the maze of Delta
37 channels), waterskiing, wakeboarding, and using personal watercraft. Opportunities for these
38 activities can be found throughout the Delta, with suitable locations depending on wind, water
39 temperature, channel width, orientation, depth, and proximity to facilities. The Delta provides
40 facilities for boaters including ramps, yacht clubs, and marinas, which often have amenities such as
41 fuel, supplies, waste pump-out facilities, and guest docks. Restaurants and other businesses in the

Chapter 15 – Recreation	Alternative																			
	Existing Condition	No Action	1A	1B	1C	2A	2B	2C	3	4	5	6A	6B	6C	7	8	9	4A	2D	5A
	n/a	n/a	0	3	0	0	0	0	0	2	0	0	3	0	0	0	6	2	2	2
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 the proposed water conveyance facilities (Number of sites)	n/a	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	LTS/NA	SU/A	LTS/NA	LTS/NA	LTS/NA	LTS/NA
REC-2: Result in long-term reduction of recreation opportunities and experiences as a result of constructing the proposed water conveyance facilities (Number of sites)	n/a	--	7	18	11	7	18	11	5	8	7	7	18	11	8	8	3	8	8	8
	n/a	LTS/NA	SU/A	SU/A	SU/A	SU/A	SU/A	SU/A												

Key

Level of significance or effect **before** mitigation
(Quantity of impact: number of sites, structures, acres, etc. affected)



n/a not applicable
> greater than
< less than
≈ about equal to

Level of significance or effect **after** mitigation
(CEQA Finding / NEPA Finding)

CEQA Finding	NEPA Finding
NI No Impact	B Beneficial
LTS Less than significant	NE No Effect
S Significant	NA Not Adverse
SU Significant and unavoidable	A Adverse

Figure 15-0
Comparison of Impacts on Recreation

1 Delta, as well as the towns of Walnut Grove and Isleton, also offer guest docks for temporary boat
2 tie-up.

3 The summer months (Memorial Day to Labor Day) are the peak times for powerboating activities in
4 the Delta, with the Fourth of July typically the single highest peak-use event of the year, followed by
5 other summer weekends and special event days (California Department of Parks and Recreation's
6 Division of Boating and Waterways 2003).

7 Boating participation is predicted to increase for the period of 2010–2020 (Plater and Wade 2002).
8 However, boat registration data from the 13 Delta Primary Market Area counties (California
9 Department of Parks and Recreation's Division of Boating and Waterways 2003) for 2002–2009
10 indicate a pattern of slight but steady declines in boat registrations over that period in most counties
11 (California Department of Parks and Recreation's Division of Boating and Waterways 2003–2010).
12 Overall, the number of registered boats in the Primary Market Area counties fell 5.3% between 2002
13 and 2009. Given that boats originating in the Primary Market Area account for more than 75% of
14 Delta boating trips (California Department of Parks and Recreation's Division of Boating and
15 Waterways 2003), these data suggest that predicted boating activity increases for the period 2000–
16 2010 have not occurred.

17 Nonpowered boating activities in the Delta include sailing, windsurfing, kiteboarding, canoeing, and
18 kayaking. All three wind-related activities (sailing, windsurfing, and kiteboarding) are conducted on
19 the main Sacramento and San Joaquin Rivers, with windsurfing and kiteboarding most common on
20 the Sacramento River from Rio Vista to Sherman Island, and on the San Joaquin River from Twitchell
21 Island to Little Sherman Island (California Department of Parks and Recreation's Division of Boating
22 and Waterways 2003). Sailing activities are conducted more widely on the main rivers. Motorized
23 sailboats can use those Delta waterways that are sufficiently deep. In the eastern Delta, canoeists
24 and kayakers can find tranquil, isolated waterways that provide shelter from strong winds and
25 abundant wildlife-viewing opportunities.

26 Weather conditions make the summer months a preferred time for sailing, windsurfing, and
27 kiteboarding, with peak use times on summer weekends and holidays. Paddle boaters prefer spring
28 and fall off-seasons because of cooler air temperatures, less boat traffic, and more wildlife-viewing
29 opportunities (California Department of Parks and Recreation's Division of Boating and
30 Waterways 2003).

31 *Water- and Land-Based Activity Participation*

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

40 Surveys of the small and large boat owners conducted in 2000–2001 for the *Delta Boating Needs*
41 *Assessment* (California Department of Parks and Recreation's Division of Boating and Waterways
42 2003) indicated, like the earlier DPR surveys, that cruising, fishing, and sightseeing were among the
43 most popular Delta recreation activities. Large-boat owners placed less emphasis on camping and

1 picnicking and more emphasis on cruising and sightseeing than small-boat owners (although a
 2 majority of both groups participated in those activities) (California Department of Parks and
 3 Recreation's Division of Boating and Waterways 2003). Table 15-1 compares the Delta participation
 4 rates among small- and large-boat owners in these and other water- and land-based recreation
 5 activities.

6 **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 Parks and Recreation's Division 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.

7

8 **Boat Fishing**

9 Boat fishing is a popular activity in the Delta. Game fish found in the Delta include catfish; sturgeon;
 10 steelhead; striped, largemouth (black), smallmouth, and spotted bass; American shad; Chinook
 11 salmon; crappie; and bluegill (California Department of Parks and Recreation 1997; California
 12 Department of Fish and Game 2011a). Boat fishing is a year-round activity in the Delta, with peak-
 13 use seasons varying by species, species abundance, and angling regulations. Striped bass are
 14 prevalent fall through spring, sturgeon winter through spring, Chinook salmon late summer through
 15 fall, and black bass fall through spring (California Department of Parks and Recreation's Division of
 16 Boating and Waterways 2003; SacDelta.com 1998). The Delta is one of the most productive trophy
 17 bass fisheries in the nation, and numerous bass tournaments are held in the Delta throughout the
 18 year, including several corporate-sponsored tournaments (California Department of Fish and Game
 19 2007a). Fishing is an important recreational activity in the Delta and supports commercial guiding
 and charter boat opportunities.

21 **Boat Hunting**

22 Hunting has long been a recreational activity in the Delta, with waterfowl hunting being the primary
 23 type. Hunting by boat (typically used as a floating blind) is popular at the larger flooded islands, such
 24 as Franks Tract and Sherman Island, because hunters seek open, shallow waters and marsh areas
 25 where waterfowl congregate (California Department of Parks and Recreation's Division of Boating
 26 and Waterways 2003). Licenses and duck stamps to hunt waterfowl are required by the California
 27 Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS). CDFW manages
 28 hunting in California, including the public hunting programs at Sherman Island and other smaller
 29 wildlife areas. The California Department of Parks and Recreation (DPR) allows hunting at Franks

1 Tract, designated as Franks Tract State Recreation Area. Boat hunting is also allowed at Big Break,
2 which is managed by the East Bay Regional Park District (EBRPD) (Delta Protection
3 Commission 1997). Late fall through early winter is the designated waterfowl hunting season, with
4 starting and ending dates varying each year by species and by hunting method.

5 ***Other Boating-Related Activities***

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

9 ***Commercial Boat Tours and Fishing Guides***

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

14 ***Land-Based Recreation Activities***

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

18 ***Hunting***

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

24 The designated hunting season for waterfowl is generally late October through January; for upland
25 game birds such as pheasant, the season ranges from August through January, with opening and
26 closing days varying each year by species, geographic zone and hunting method (California
27 Department of Fish and Game 2011b; California Fish and Game Commission 2012). Licenses and
28 duck or upland game stamps are required. CDFW administers the Delta Island Hunting Program, a
29 late-season hunt for pheasants and waterfowl on state-owned lands on Twitchell and Sherman
30 Islands. Hunting days, which typically are Wednesdays and Saturdays, totaled 13 days in 2008,
31 including two junior hunt days and one women's hunt day (California Department of Fish and Game
32 2009a).

33 ***Shoreline Fishing***

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

1 ***Wildlife Viewing/Botanical Viewing/Nature Photography***

2 Opportunities for birding and other wildlife viewing, as well as nature photography, are widespread
3 throughout the Delta; however, only a few locations provide facilities for wildlife viewing. Most
4 wildlife viewing is informal or is secondary to another activity (e.g., fishing, boating). The Delta is a
5 critical stopover for migratory birds, which can be viewed and photographed at the Yolo Bypass
6 Wildlife Area, Stone Lakes NWR, Cosumnes River Preserve, and Woodbridge Ecological Reserve,
7 among other locations. Wildlife viewing and nature photography opportunities are available year-
8 round in the Delta, although opportunities to see and photograph particular migratory bird species
9 vary and generally occur in fall and spring. The arrival of overwintering sandhill cranes in the Delta
10 each fall provides viewing opportunities on public and private lands, and special events and tours
11 are held each year while the birds are present. Botanical viewing opportunities are available in
12 spring at the Jepson Prairie Reserve, where hundreds of plant species have been identified. Delta
13 Meadows River Park (DPR property) is among the last remnants of natural Delta uplands (California
14 Watchable Wildlife 2009). According to the California Department of Parks and Recreation website
15 at the time of the Draft EIR/EIS was prepared, some of the facilities at the Delta Meadows River Park
16 are closed to the public and the park currently provides no visitor services. The park continues to
17 serve as a preserve and remains a mooring site for boaters. (California Department of Parks and
18 Recreation 2012a; California Department of Parks and Recreation 2012b).

19 ***Camping***

20 Camping opportunities, including both tent and recreational vehicle (RV) camping sites, are
21 available in the Delta, mostly at large public parks and private resorts and marinas. Some private
22 resorts and marinas provide access to tenants and guests only, not the general public. Camping
23 opportunities for the general public, including tent, RV and group sites, are available at a few public
24 parks. In the past, Brannan Island State Recreation Area, offered boat-in camping, where a boat
25 berth is accompanied by a land campsite. Due to park closures, however, this activity is no longer
26 available until further notice. Camping is associated with general public recreational use of the
27 Delta, particularly boating and fishing, and therefore peaks during summer.

28 ***Picnicking***

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

35 ***Hiking/Walking/Biking***

36 Hiking, walking, and biking trail opportunities are fairly limited in the Delta, with only a few widely
37 scattered trails available for hiking/walking, and only a few trails available along the shoreline in the
38 Pittsburg, Antioch, and Oakley areas for hiking/walking and biking. The 6.5-mile Marsh Creek Trail
39 is accessible from the Big Break Regional Shoreline in Oakley. Several Delta parks have short, paved
40 walkways or footpaths; however, these are not considered "trails" for the purpose of this discussion.
41 The Delta Protection Commission (DPC) is leading the planning process for the Great California
42 Delta Trail System. The system will link the San Francisco Bay Trail and trails planned along the
43 Sacramento River in Yolo and Sacramento Counties to present and future trails in and around the

1 Delta and along shorelines in several counties (Delta Protection Commission 2007). This includes
2 the Mokelumne Coast to Crest Trail, which is anticipated to pass through the Delta (Mokelumne
3 Coast to Crest Trail 2012). Trail use in the Delta occurs year-round.

4 **Sightseeing**

5 There are few formal facilities in the Delta specifically for sightseeing (i.e., signage, markers), so this
6 activity typically is informal and self-led. Six recommended driving tours found on the California
7 Delta Chambers and Visitor's Bureau website (California Delta Chambers and Visitor's Bureau
8 2009b) lead visitors past historic sites, sloughs, rivers, marinas, resorts, ferries, and bridges in all
9 areas of the Delta. These driving tours combine travel and sightseeing on the main highways in the
10 Delta (State Routes [SRs] 160, 12, and 4) with viewing sites on smaller roads along sloughs or across
11 islands. The Sacramento County and Contra Costa County portions of SR 160 (River Road) are
12 designated as State Scenic Highways (California Department of Transportation 2011; California
13 Department of Transportation 2008; Cadd pers. comm.). The SR 4 Bypass from SR 160 near Antioch
14 to SR 84 near Brentwood (about 9.5 miles) is eligible for designation as a State Scenic Highway
15 (California Department of Transportation 2008). A 28-mile portion of SR 160 in Sacramento County
16 is also designated as a County Scenic Highway (Sacramento County 2011:25). Scenic highway
17 designations are discussed further in Chapter 17, *Aesthetics and Visual Resources*, Section 17.2.2.5.

18 **Winery Tours and Festivals**

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

25 **Visiting Historic Sites**

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

36 **Recreational Facilities in the Delta**

37 Numerous recreational facilities throughout the Delta support participation in the wide variety of
38 activities available (Figure 15-1). The following sections describe public recreation areas/facilities
39 and privately owned recreational facilities for each Delta county. A summary of the public and
40 private recreational facilities in each county is presented in Table 15-2. Additional details on the
41 privately owned facilities, including name, type of facility, and amenities provided, are presented in
42 Appendix 15A, *Privately Owned Recreation Facilities, by County*. Further county-specific information

about recreation in the Delta is located in Appendix 15B, *Delta Recreation*, and additional maps of existing recreational facilities in the Delta are included in Appendix 15C, *Additional Recreation Figures*.

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.

Alameda County

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

Public Facilities/Areas

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

Private Facilities

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

Contra Costa County

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

1 ***Public Facilities/Areas***

2 ***Antioch Dunes National Wildlife Refuge***

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

8 ***Antioch Marina and Barbara Price Marina Park***

9 The City of Antioch owns and manages a large marina on the San Joaquin River, approximately
10 3.25 miles west of the SR 160 Antioch Bridge. The 12.8-acre marina provides opportunities for
11 boating and fishing, consisting of fishing piers, an observation pier, 310 berths, pump-out facilities, a
12 fuel dock, a restaurant, a guest dock, and overnight berthing. The berthing facilities accommodate
13 both powerboats and sailboats (City of Antioch 2012). Adjacent to the marina is the Barbara Price
14 Marina Park, a city neighborhood park. The 7-acre park has picnic sites, a group picnic area, an
15 exercise course, a tot lot, and shoreline fishing access (City of Antioch 2011).

16 ***Antioch Municipal Boat Ramp***

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

19 ***Antioch/Oakley Regional Shoreline***

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

24 ***Big Break Regional Shoreline***

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

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

3 *Big Break Regional Trail*

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

9 *Browns Island Regional Preserve*

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

13 *Clifton Court Forebay*

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

20 *Franks Tract State Recreation Area*

21 Franks Tract State Recreation Area, just north of Bethel Island, occupies two flooded islands, Franks
22 Tract and Little Franks Tract. No recreational facilities are in the State Recreation Area, and both
23 flooded islands are accessible only by boat. Recreation opportunities in the State Recreation Area
24 include fishing, boating, and waterfowl hunting (on part of the open water) (California Department
25 of Parks and Recreation 2012c).

26 *Jersey Island*

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

32 *Marsh Creek Regional Trail*

33 EBRPD's Marsh Creek Regional Trail runs along Marsh Creek in eastern Contra Costa County, from
34 the Delta shores of Big Break south to Creekside Park in Brentwood. The paved, multiuse trail is
35 6.5 miles long. Plans exist to extend the trail to 14 miles, connecting the Delta to Morgan Territory
36 Regional Preserve and Round Valley Regional Park east of Mount Diablo State Park (East Bay
37 Regional Park District 2008c).

1 *Rhode Island Wildlife Area*

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

8 *Riverview Park*

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

12 ***Private Facilities***

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

21 **Sacramento County**

22 A narrow strip of Sacramento County, between the Sacramento River and Steamboat Slough on the
23 west and between the San Joaquin and Mokelumne Rivers on the east, extends across the northern,
24 central, and western portions of the Delta. This area includes a string of small historic towns on the
25 Sacramento River: Courtland, Hood, Isleton, Locke, Ryde, and Walnut Grove. Numerous private and
26 public recreational facilities are located in this portion of the Delta. These include more than
27 30 marinas and a yacht club, about half of which are concentrated on Andrus Island in an area
28 commonly referred to as the "Delta Loop," and which together account for more than 1,800 boat
29 berths. The county is also home to one of the largest public parks in the Delta, Brannan Island State
30 Recreation Area.

31 ***Public Facilities/Areas***

32 *Brannan Island State Recreation Area*

33 Brannan Island State Recreation Area, just south of the City of Rio Vista, is on the northern side of
34 Threemile Slough and occupies a peninsula between the slough and the Sacramento River from the
35 SR 160 bridge to Sevenmile Slough. Activities available in the State Recreation Area include camping,
36 picnicking, boating, fishing, and swimming. Facilities include a 10-lane boat ramp, visitor center,
37 group picnic area, day-use area, swim beach, fishing pier, more than 140 campsites, 13 RV sites with
38 boat berths, and an RV rally area (California Department of Parks and Recreation 2011a; California
39 Department of Parks and Recreation 2011b). Additional State Recreation Area day-use facilities and
40 windsurfing access at Windy Cove are on the western side of SR 160, across from the main portion
41 of the park (California Department of Parks and Recreation 2012d). However, DPR implemented

1 service reductions at Brannan Island State Recreation Area in May 2011 because of budget
2 reductions. In June 2012, some of those restrictions were removed and camping and day use are
3 available 7 days per week and the boat launch remains open every day. Delta Meadows and Windy
4 Cove parking areas and restrooms are closed. Windy Cove, the RV rally area, and Group Camp
5 remain closed. Delta Meadows River Park guided canoe tours are no longer offered (California
6 Department of Parks and Recreation 2011a).

7 *Cliffhouse and Georgiana Slough Fishing Access*

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

13 *Cosumnes River Preserve*

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

21 The preserve provides “non-consumptive” recreation activities such as bird watching, photography,
22 nature study, hiking, and canoeing/kayaking (Cosumnes River Preserve 2009c). A few specially
23 designated areas have been set aside for limited hunting. Fishing is only allowed from a boat and
24 with the proper license. In order to limit disturbance to the wildlife and habitat within the preserve,
25 recreation opportunities and public access are concentrated around the visitor center, which houses
26 interpretive displays, interactive educational exhibits, and a picnic area. The visitor center is open
27 and staffed by volunteers on Saturdays and Sundays and is often open during the weekdays, but
28 hours vary depending upon staff availability. The visitor center provides information on the
29 preserve’s self-guided driving tour, which travels public roads adjacent areas of the Cosumnes River
30 Preserve that are not accessible by the public (i.e., they are only accessible only by guided tours or
31 are privately owned) (Cosumnes River Preserve 2009d). From the center, visitors can access the 3-
32 mile Cosumnes River Walk Trail, located on levees that pass through different habitats, and the 1-
33 mile Lost Slough Wetlands Walk Trail, which tours through marshes and wetlands (Cosumnes River
34 Preserve 2009e, 2012a). The two trails are open to the public every day of the year from sunrise to
35 sunset. Other areas of the Preserve are not open to self-guided tours. There is no public fishing
36 access at the preserve, although boat fishing (with appropriate permits and licenses) is allowed in
37 the Cosumnes River main channel and sloughs accessible from the Mokelumne River. Limited
38 waterfowl hunts for youth and mobility-impaired hunters have been allowed in the Cougar Wetland;
39 however, hunting in the rest of the preserve is only allowed by boat on the river and sloughs
40 (Cosumnes River Preserve 2009f). The preserve has a courtesy boat dock south of the visitor
41 parking lot for paddle boats only (Cosumnes River Preserve 2012b).

1 *Delta Meadows River Park*

2 Delta Meadows River Park is behind the town of Locke, along Railroad Slough. Delta Meadows was
3 acquired to protect one of the last remnants of natural conditions in the Delta before Euro-American
4 settlement. It is primarily undeveloped, although a road passes through the parcel along Railroad
5 Slough. A 1-mile footpath on the old railroad levee parallel to the road provides walking/hiking
6 opportunities, although the property has been officially closed since May 2011 because of state
7 budget constraints. Canoe tours that used to be offered twice daily on Saturdays and Sundays during
8 spring and fall are no longer available. Boating and fishing opportunities in the area are still
9 available (California Watchable Wildlife 2009; California Department of Parks and Recreation
10 2011a; California Department of Parks and Recreation 2012b).

11 *Garcia Bend Park*

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

16 *Hogback Island Access*

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

20 *Isleton and Walnut Grove Courtesy Docks*

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

23 *Lower Sherman Island Wildlife Area*

24 A 3,115-acre marshland in the Lower Sherman Island Wildlife Area lies at the confluence of the
25 Sacramento and San Joaquin Rivers, accessible only by boat (California Department of Fish and
26 Game 2009c). The primary recreational activities at the wildlife area are fishing and hunting,
27 although other recreation activities include wildlife viewing, photography, and powered and
28 nonpowered boating. Waterfowl hunting is the primary hunting activity in the wildlife area; hunting
29 for upland game also is permitted (California Department of Fish and Game 2011b). Fishing occurs
30 year-round in the wildlife area; the site is known for striped bass, largemouth bass, and catfish
31 (California Department of Fish and Game 2007a). There are no recreational facilities.

32 *Sherman Island Public Access Facility*

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

1 Stone Lakes National Wildlife Refuge

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

17 Private Facilities

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

28 San Joaquin County

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

37 Public Facilities/Areas**38 Buckley Cove Park and Louis Park**

39 The City of Stockton manages Buckley Cove and Louis Parks, 53 and 74 acres, respectively. Both
40 parks have boat launches and pier fishing; Buckley Cove Park provides boat access to the San
41 Joaquin River Deep Water Ship Channel, and Louis Park provides boat access to the Smith Canal
42 (City of Stockton 2011a). Buckley Cove Park also has a few picnic sites and a children's play area.

1 Louis Park has footpaths; picnic sites, including two group picnic areas; and facilities for tennis,
2 softball, baseball, and handball (City of Stockton 2008).

3 *Calaveras River Bike Path*

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

6 *Dos Reis Regional Park*

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

11 *Grupe Park and Legion (American) Park*

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

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

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

22 *Morelli Park*

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

25 *Mossdale Crossing Regional Park*

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

29 *Westgate Landing Regional Park*

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

34 *White Slough Wildlife Area*

35 White Slough Wildlife Area consists of 880 acres of designed ditches, canals, marshes, grasslands,
36 riparian habitat, and nine ponds that were created during the construction of Interstate 5 (I-5). The
37 wildlife area, west of Lodi and north of Stockton, provides opportunities for fishing, hiking, and

wildlife viewing. Hunting opportunities are also available from September 1 through January 31, specifically for pheasant, quail, dove, and waterfowl (California Department of Fish and Game 2009d; California Department of Fish and Game 2011b).

Woodbridge Ecological Reserve

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

Private Facilities

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

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

Solano County

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

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

The total estimated annual recreation use of Suisun Marsh is about 130,000 user-days, about half of which is attributed to waterfowl hunting at the numerous private duck clubs (Delta Vision 2007). Each season, the Grizzly Island Wildlife Area Complex hosts 7,000–8,000 waterfowl hunters (California Department of Fish and Game 2010a); more than 1,000 pheasant hunters; and up to 100

1 elk, rabbit, and pig hunters. The manager of the complex has estimated more than 45,000 user-days
2 of fishing activity in the marsh (two-thirds in the wildlife area), and more than 12,000 user-days of
3 recreational activity are attributed to nonhunting and fishing activities such as wildlife viewing and
4 dog training, nearly all of which occur in the wildlife area (Delta Vision 2007).

5 ***Public Facilities/Areas***

6 *Hill Slough Wildlife Area*

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

12 *Peytonia Slough Ecological Reserve*

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

18 *Rush Ranch Open Space*

19 Rush Ranch is located 2 miles south of SR 12 on Grizzly Island Road. This 2,070-acre marsh and
20 grassland area on the northeastern side of Suisun Marsh provides opportunities for recreation and
21 education for thousands of visitors each year (Solano Land Trust 2010a). Recreation opportunities
22 include hiking, wildlife viewing, and bird watching; educational opportunities include visiting the
23 nature center, the Kit House museum, and visitor center. Visitors can also participate in one of the
24 monthly events held at the site, which include volunteer improvement day, blacksmith
25 demonstrations, horse-drawn wagon rides, and interpretive walks (Solano Land Trust 2010a;
26 Solano Land Trust 2010b; Rush Ranch Educational Council 2010). Facilities at the ranch include
27 three self-guided trails, a nature center, and a museum and visitor center. Facilities available for rent
28 at the ranch include a meeting room, picnic/barbeque area, and a fully furnished two-bedroom guest
29 quarters (Solano Land Trust 2010b).

30 *Grizzly Island Wildlife Area*

31 The 15,300-acre Grizzly Island Wildlife Area is a complex of 10 distinct parcels or units, most of
32 which are not connected and are surrounded by private property (California Department of Fish and
33 Game 2010b). The 10 units are located throughout most of Suisun Marsh south of the Hill Slough
34 Wildlife Area and Peytonia Slough Ecological Reserve (California Department of Fish and Game
35 2009f). The largest unit is the Grizzly Island Unit, which contains most of the wildlife area's facilities
36 and receives much of the hunting use.

37 The Grizzly Island Wildlife Area provides opportunities for hiking, fishing, wildlife viewing, bird
38 watching, photography, dog training, and hunting. Facilities in the wildlife area include levee trails,
39 parking areas, restrooms, fishing piers, a wildlife-viewing platform, and hunting blinds (California
40 Department of Fish and Game 2010b; California Department of Fish and Game 2010c; California
41 Department of Fish and Game 2010a). The Grizzly Island Unit has a 7.5-mile self-guided tour along

1 Grizzly Island Road with stops at the nine parking areas that provide access to the many levee trails
2 in the unit (California Department of Fish and Game 2010c). Fishing is allowed at the Grizzly Island
3 Unit, Island Slough Unit, and Belden's Landing, which is north of the Island Slough Unit on
4 Montezuma Slough and includes a boat launch facility (California Department of Fish and
5 Game 2010d; Solano County 2012). In the wildlife area, hunting for a variety of species, including
6 waterfowl, dove, pheasant, tule elk, and rabbit, is allowed; however, the different units in the wildlife
7 area have different hunting regulations (California Department of Fish and Game 2010a). Special
8 hunts in the wildlife area include a junior pheasant hunt and two tule elk hunts (one adult and one
9 apprentice). General public use of the wildlife area is not allowed during the tule elk hunts and
10 during the waterfowl hunting season (California Department of Fish and Game 2010e).

11 *Calhoun Cut Ecological Reserve*

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

15 *Decker Island Wildlife Area*

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

21 *Jepson Prairie Preserve*

22 At the far western edge of the Delta, native bunchgrass prairie and vernal pools are protected in the
23 Jepson Prairie Preserve. The Solano Land Trust owns the preserve, and the University of California,
24 Davis supports reserve management. Visitors can participate in docent-guided walks past vernal
25 pool and prairie habitat to glimpse some of the more than 400 plant species in the preserve. Walks
26 are provided on weekends from March through May. No other public recreational activities or
27 facilities are in the preserve (University of California Davis 2009).

28 *Miner Slough Wildlife Area*

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

35 ***Private Facilities***

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

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

10 **Yolo County**

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

16 **Public Facilities/Areas**

17 *Clarksburg Fishing Access*

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

21 *Yolo Bypass Wildlife Area*

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

32 *Fremont Weir Wildlife Area*

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

1 *Sacramento Bypass Wildlife Area*

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

8 **Private Facilities**

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

14 **Recreation Users in the Delta**

15 According to the Delta Boating Needs Assessment (California Department of Parks and Recreation's
16 Division of Boating and Waterways 2003), 75% of surveyed boat owners who had recently boated in
17 the Delta lived within 75 miles of the Delta. This area is referred to as the *Primary Market Area* and
18 consists of 13 counties: Alameda, Calaveras, Contra Costa, Marin, Napa, Sacramento, San Francisco,
19 San Joaquin, San Mateo, Santa Clara, Santa Cruz, Solano, and Stanislaus. The next largest source of
20 boaters who use the Delta is referred to as the *Secondary Market Area* and represents an additional
21 10% of Delta boaters. The Secondary Market Area consists of the following 14 counties: Amador,
22 Colusa, El Dorado, Lake, Mariposa, Mendocino, Merced, Monterey, Placer, San Benito, Sonoma,
23 Sutter, Tuolumne, and Yolo (California Department of Parks and Recreation's Division of Boating
24 and Waterways 2003).

25 **Recreation Participation**

26 The two dominant recreation uses in the Delta have historically been fishing and boating. The
27 results of the *Sacramento-San Joaquin Delta Outdoor Recreation Survey*, which evaluated recreation
28 use and recreation user characteristics, showed that boating and fishing were among the most
29 popular recreation uses at that time (California Department of Water Resources 1980:5, 6, 7, 74). Of
30 the individual visitors surveyed, 47.6% participated in boating and 47.6% also participated in
31 fishing (these estimates are not additive as the survey responses could include multiple activities by
32 each respondent). For groups visiting the Delta who participated in the survey, fishing was the
33 highest rated activity with 28.2% reporting participation fishing (these respondents were not asked
34 about participation in boating or camping activities). For residents using the Delta for recreation
35 uses, results for individuals also showed highest participation in fishing (69.1%) and boating
36 (68.1%), and resident groups identified fishing as the highest (24.7%)(these respondents were not
37 asked about participation in boating or camping activities). Other popular activities in which
38 respondents from the four survey groups reported participating in during their visits to the Delta
39 included relaxing, driving for pleasure, sightseeing, swimming, and water skiing (California
40 Department of Water Resources 1980:75–78). Estimates of recreation use in the Delta from a 2002
41 study (Plater and Wade 2002), which used 1997 as the baseline year, reinforce that recreational
42 boating and fishing are two of the main Delta recreation activities. The study estimated that total
43 1997 Delta recreation use consisted of almost 6.4 million visitor-days (Table 15-3). Almost 75% of

this total recreation use was attributed to boating, with 16% attributed to fishing. Day use, which for this study encompassed all other nonboating and fishing activities, accounted for the remaining 10% of total recreation use in 1997. Camping was not treated as a primary activity in the development of these estimates but rather as a secondary activity most often associated with boating and fishing (Plater and Wade 2002).

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

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 the Draft EIR/EIS was prepared, there was no data more current than 1997.

Hunting was described above as a seasonally popular activity in the Delta. Most public hunting use in the statutory Delta occurs at the Yolo Bypass Wildlife Area, with more than 6,000 people participating in the 2008–2009 season. Additional hunting activity occurs during more limited, reservation-only hunts on the DWR lands of Sherman and Twitchell Islands and at Stone Lakes NWR (Table 15-4). In addition to the Yolo Bypass Wildlife Area, CDFW allows hunting at several other small wildlife areas in the Delta where no special permits or reservations are required; no hunter use data are available for these locations.

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.

Although recreational activities occur year-round in the Delta, the most use occurs in summer. The 1996 survey of Delta boaters indicated that June, July, and August were the months with the greatest boating activity; the month with the least boating activity was December. The 1996 survey of Delta anglers indicated that May, June, and July were the most popular months for fishing, closely followed

1 by August and September (California Department of Parks and Recreation 1997). Concentrations of
 2 recreation activity in the Delta often are related to special events. The most common of these events
 3 are bass fishing tournaments, which occur year-round but are particularly prevalent during spring
 4 and early summer. As an example, Russo's Marina near Oakley hosts a bass tournament nearly every
 5 weekend throughout spring and summer. In a large bass tournament, participation can be as high as
 6 several hundred anglers.

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

15 **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.

16
 17 Numerous fireworks shows and other events are sponsored by Delta towns and marinas each
 18 Fourth of July (SacDelta.com 2012), and many hundreds of boats congregate at favored anchoring
 19 locations during that holiday weekend.

20 The Economic Sustainability Plan for the Sacramento-San Joaquin Delta (Delta Protection
 21 Commission 2012:167) provides a summary of actual visitation numbers to several Delta recreation
 22 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 Parks and Recreation's Division of Boating and Waterways 2003)
 8 identified a projection of 6.4 million boating-related visitor-days in 2000, and projected that annual
 9 visitation would increase at the rate of 0.79% per year from 2000 to 2010 (no published data are
 10 available to establish whether the 2010 use projections were realized) and at the rate of 0.46% per
 11 year from 2010 to 2020 to reach 8.1 million annual boating-related visitor-days by 2020 (Table 15-
 12 7). As discussed in the Existing Conditions section, the number of registered boats in the Primary
 13 Market Area counties fell 5.3% between 2002 and 2009. Boats originating in the Primary Market
 14 Area account for more than 75% of Delta boating trips (California Department of Parks and
 15 Recreation's Division of Boating and Waterways 2003), which suggests that predicted boating
 16 activity increases for the period 2000–2010 have not occurred.

1 **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 Parks and Recreation's Division of Boating and Waterways 2003.

2

3 **15.1.1.2 Description of Existing Conditions in the Upstream of the Delta
4 Region**

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

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

21 The CVP was originally authorized by the Rivers and Harbors Act of 1935. The CVP was
22 reauthorized by the Rivers and Harbors Act of 1937 for the purposes of "improving navigation,
23 regulating the flow of the San Joaquin River and the Sacramento River, controlling floods, providing
24 for storage and for the delivery of stored waters." The CVP was reauthorized in 1992 through the
25 Central Valley Improvement Project (CVPIA), which modified the 1937 Act and added mitigation
26 protection and restoration of fish and wildlife as a project purpose. Further, the CVPIA specified that
27 the dams and reservoirs of the CVP should now be used "first, for river regulation, improvement of
28 navigation, and flood control; second, for irrigation and domestic uses and fish and wildlife
29 enhancement."

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

1 **Recreational Activities and Opportunities Upstream of the Delta, New Melones 2 Lake and San Luis Reservoir**

3 The SWP and CVP water storage facilities provide substantial opportunity for recreational activities
4 throughout the year. The reservoirs provide on-water boating and angling opportunities in addition
5 to shoreline angling, camping, and day uses. These facilities release flows to the downstream rivers,
6 which also support boating, angling, and shoreline activities. Figure 15-2 identifies recreational
7 facilities upstream of the Delta.

8 **Reservoirs**

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

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

16 ***Trinity Lake***

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

28 ***Shasta Lake***

29 Shasta Lake is the largest reservoir in California, with 29,500 surface acres when full. The U.S. Forest
30 Service manages the lake and surrounding lands as the centerpiece of the Shasta Unit of the
31 Whiskeytown-Shasta-Trinity NRA. Water-based recreation is the main attraction, and boating is the
32 predominant recreation activity at the lake.

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

1 ***Whiskeytown Lake***

2 Whiskeytown Lake is 8 miles west of Redding and is a main feature of the National Park Service-managed Whiskeytown Unit of the Whiskeytown-Shasta-Trinity NRA. The lake provides 36 miles of shoreline and 3,200 surface acres for a variety of water-based recreation opportunities, such as swimming, scuba diving, kayaking, canoeing, rowing, fishing, sailing, waterskiing, and powerboating (personal watercraft are prohibited) (National Park Service 2011a). Recreation facilities at the lake include boat launches, campgrounds, fishing piers, picnic areas, and beaches. The area adjacent to the lake includes many primitive campsites and trails for hiking, mountain biking, and horseback riding (National Park Service 2011b).

10 ***Lake Oroville***

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

25 ***Folsom Lake***

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

38 ***New Melones Lake***

39 New Melones Lake is owned and managed by Reclamation; it was constructed in the late 1970s and provides 100 miles of shoreline and 12,500 surface acres of water. New Melones Reservoir is operated primarily for purposes of water supply, flood control, power generation, fishery enhancement, and water quality improvement in the lower San Joaquin River. The reservoir also provides recreation benefits. Two developed recreation areas at the reservoir provide three boat

1 launches, five campgrounds, two group camps, six day-use areas, and one marina. Also located at the
2 reservoir are hiking and biking trails, as well as a visitor center and museum that provide
3 information on prehistoric and historic use of the Stanislaus River area (Bureau of Reclamation
4 2012).

5 ***San Luis Reservoir***

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

20 The San Luis Reservoir State Recreation Area is open year round. Boat access is available by a boat
21 ramp at the Basalt area at the southeastern portion of the reservoir and at Dinosaur Point at the
22 northwestern portion of the reservoir. The boat ramp at Basalt becomes difficult to use because of
23 low reservoir levels at elevation 340 feet; the boat ramp at Dinosaur Point is difficult to access at
24 elevation 360 feet (San Joaquin River Group 1999:3-116). There are no designated swimming areas
25 or beaches at San Luis Reservoir, but O'Neill Forebay has swimming, boating, fishing, and camping
26 opportunities. At Romero Overlook there is a popular SWP Visitors Center, easily accessible off of SR
27 152.

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

33 **Waterways**

34 ***Trinity River Downstream of Lewiston Dam***

35 The Trinity River from Lewiston Dam downstream to the confluence with the Klamath River at
36 Weitchpec is designated as a federal and California wild and scenic river that runs through private
37 lands, BLM, and U.S. Forest Service (Shasta-Trinity and Six Rivers National Forests) lands, as well as
38 the Hoopa Valley Indian Reservation (Wild and Scenic Rivers Council 2011). SR 299, which follows
39 the river through the Trinity River Gorge west of Junction City, is a designated scenic byway and
40 provides access to the river's recreation facilities (Trinity County 2007; Bureau of Land Management
41 2012; USDA Forest Service 2012b). The Trinity River is well known for its salmon and steelhead
42 fishing and its whitewater boating opportunities, with the river waters ranging in difficulty from

1 Class I to Class V (Trinity River Rafting 2011). Access points are provided along the river, as well as
2 campgrounds and day-use areas (Bureau of Land Management 2012; USDA Forest Service 2012c).

3 ***Sacramento River Downstream of Keswick Dam***

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

16 ***Feather River Downstream of Lake Oroville***

17 Below Lake Oroville, the Feather River runs through the Oroville Wildlife Area and the communities
18 of Gridley, Live Oak, Yuba City, and Marysville before joining the Sacramento River approximately 70
19 miles below Lake Oroville at Verona. Recreation activities along the lower Feather River include
20 fishing, boating, hunting, camping, swimming, wildlife viewing, and picnicking. The several miles of
21 river near Oroville and the Oroville Wildlife Area are renowned for trout and salmon fishing (Neville
22 2008). Recreation facilities along this stretch of the Feather River include public and private launch
23 ramps, day-use facilities, camping facilities, and trails (City of Marysville 2012a; Yuba County 2009;
24 Sutter County 2012). Riverfront Park in Marysville also offers a golf driving range, OHV course,
25 bicycle motocross (BMX) track, soccer and softball fields, a nature area, and a pavilion (City of
26 Marysville 2012b).

27 ***American River Downstream of Folsom Lake***

28 Most of the first 6 miles of the American River below Folsom Lake is occupied by Lake Natoma,
29 formed by Nimbus Dam, a downstream regulating reservoir (California Department of Parks and
30 Recreation 2010a) for Folsom. Park lands surrounding Lake Natoma are included in the Folsom
31 Lake State Recreation Area, managed by DPR (California Department of Parks and Recreation
32 2010b). Lake Natoma and the surrounding lands provide opportunities for waterskiing, sailing,
33 windsurfing, rowing, canoeing, kayaking, swimming, fishing, and picnicking. Facilities at three sites
34 on the lake include boat launches, picnic areas, a group camping area, a fishing platform, and a
35 swimming area (California Department of Parks and Recreation 2010c; California Department of
36 Parks and Recreation 2010d). Motorized boating is allowed (with a 5-mph speed limit), but Lake
37 Natoma is best known for nonmotorized boat recreation. At the downstream end of Lake Natoma,
38 the Sacramento State Aquatic Center provides the general public with boating and water safety
39 classes and summer camp and youth programs. The center is a cooperative operation of the
40 Associated Students Inc. of California State University, Sacramento, the University Union of
41 Sacramento State, the California Department of Parks and Recreation's Division of Boating and
42 Waterways (CDBW), and DPR. The center is a regional boating instruction safety center and rents

1 canoes and kayaks, other types of nonmotorized watercraft, and cruiser bicycles (Sacramento State
2 Aquatic Center 2012a; Sacramento State Aquatic Center 2012b).

3 The 23-mile American River Parkway encompasses the entire stretch of the American River from
4 Nimbus Dam to the Sacramento River confluence (Sacramento County Regional Parks 2010b;
5 Sacramento County Regional Parks 2010c). The parkway is administered by the Sacramento County
6 Department of Parks and Recreation. Approximately 8 million people visit this recreation area each
7 year, participating in activities such as fishing, boating, rafting, picnicking, walking, biking,
8 swimming, horseback riding, and wildlife viewing (Sacramento County Regional Parks 2008;
9 Sacramento County Regional Parks 2010b). Parks and access points are located along the parkway
10 (Sacramento County Regional Parks 2010c; Sacramento County Regional Parks 2010d). The
11 Jedediah Smith Memorial Trail, a 32-mile paved trail that extends the length of the parkway and
12 Lake Natoma, links many of the parkway's facilities and access points (Sacramento County Regional
13 Parks 2010c).

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

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

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

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

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

2 Recreational activities in and along the San Joaquin River downstream of Friant Dam and at
3 Millerton Lake are limited and not always on public lands. Activities include fishing, boating, nature
4 interpretation and education, trail use, camping, hunting, picnicking, and wildlife viewing/nature
5 observation. The San Joaquin River Parkway is a mosaic of parks, trails, and ecological reserves
6 located along the San Joaquin River between Friant Dam and SR 145 and managed by the San
7 Joaquin River Parkway and Conservation Trust (San Joaquin River Conservancy 2000; San Joaquin
8 River Conservancy 2010; San Joaquin River Parkway and Conservation Trust 2012). Use of the
9 parkway is heaviest in summer, and a user survey estimated that the parkway received more than
10 200,000 visits in 2000, mostly from trail users (Houser and North 2001).

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

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

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

38 The West Hilmar Wildlife Area, on the western bank of the river a few miles downstream of the
39 Merced River confluence, is a 340-acre State Wildlife Area. It has no facilities and is accessible only
40 by boat (California Department of Fish and Game 2010i). The San Joaquin River NWR is located
41 along the San Joaquin River between the Tuolumne and Stanislaus Rivers, two tributaries to the San
42 Joaquin River. The refuge boundaries encompass more than 7,000 acres of riparian woodlands,
43 wetlands, and grasslands. Although the refuge is primarily undeveloped, a wildlife-viewing platform
44 has been constructed at a favored location for viewing geese and other waterfowl. The 3.8-mile

1 Pelican Nature Trail with interpretive kiosks and picnic areas opened in 2011 (U.S. Fish and Wildlife
 2 Service 2011b).

3 **Recreation Users Upstream of the Delta**

4 As previously described, the reservoirs upstream of the Delta are large, and most are the central
 5 features of federally designated or state-designated recreation areas that provide a variety of public
 6 and commercial recreation facilities. Some of these reservoirs are among the largest lakes in the
 7 state as measured by surface area. The large areas available for water-based and water-related
 8 recreation, and the associated large-scale recreation facilities, allow these areas to host large
 9 numbers of visitors each year. Each of these seven upstream reservoirs and the surrounding
 10 recreation areas host from nearly 0.5 million to more than 2 million visitors each year. Table 15-8
 11 provides a summary of annual attendance at these locations.

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

17 **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.

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.

19 **15.2 Regulatory Setting**

20 **15.2.1 Federal Plans, Policies, and Regulations**

21 **15.2.1.1 New Melones Lake Area Final Resource Management Plan**

22 The Bureau of Reclamation (Reclamation) released the New Melones Lake Area Final Resource
 23 Management Plan in early 2010, superseding the 1976 New Melones Lake Area Master Plan. Two of
 24 the purposes for the Resource Management Plan are (1) to provide for recreation management and

development and ensure that recreation facility management and opportunities are compatible with other resources, and (2) to ensure that planning is based on public need and the ability of land and water resources to accommodate increased visitor use and enhanced facilities. The plan is aimed at balancing “management of recreation uses and resources with management of natural and cultural resources.” The alternative involves increasing watercraft use, moderately updating the amount of 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 with wildlife-dependent recreation, education, and interpretation opportunities that help them develop an understanding of the unique wildlife and habitat in the refuge. Objectives of this goal include recruiting volunteers, constructing visitor facilities, developing an environmental education program that includes two interpretation programs, providing boat-only fishing and day-use parking, and continuing to expand the outreach program. Proposed facilities to be developed include two photography blinds, restrooms, trails, parking areas, and wildlife-viewing platforms, as well as a boat-accessible haul-out site and boat launch. An objective of the cultural resource protection goal also includes developing a minimum of two interpretive panels and exhibits.

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

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

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

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

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

The General Management Plan for the Whiskeytown unit of the Whiskeytown-Shasta-Trinity NRA (National Park Service 1999) provides recreation-related goals and action programs that emphasize providing a range of water-related activities in a predominantly natural setting, improving

backcountry experiences, improving visitor safety, and providing additional interpretation and education opportunities. The plan also outlines a park-wide zoning system. The following goals in the plan relate to recreation.

Public Enjoyment and Visitor Experience

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

15.2.1.5 Boat Navigation Jurisdiction, Rules, and Regulations

U.S. Coast Guard

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

15.2.2 State Plans, Policies, and Regulations

15.2.2.1 Delta Protection Act and Delta Protection Commission Land and Resource Management Plan

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

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

- Section 29702 indicates that the basic goals of the state for the Delta include the protection, maintenance, and, where possible, the enhancement and restoration of the overall quality of the

- 1 Delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational
2 activities.
- 3 ● Section 29705 indicates that the Delta's wildlife and wildlife habitats are valuable, unique, and
4 irreplaceable resources of critical statewide significance and should be preserved and protected
5 for the enjoyment of current and future generations.
- 6 ● Section 29710 declares that agricultural, recreational, and other uses of the Delta can best be
7 protected by implementing projects that protect wildlife habitat before conflicts arise.
- 8 ● Section 29712 acknowledges that the Delta's waterways and marinas offer recreational
9 opportunities of statewide and local significance, are a source of economic benefit to the region,
10 and that public safety requirements will heighten because of increased demand and use.

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

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

1 boating education and enforcement, maintenance of existing anchorage, mooring, and berthing
 2 areas, and emergency response in the Delta.

3 The Act also established a provision in the Public Resources Code that calls for local governments
 4 with lands in the Primary Zone to ensure that their general plans are consistent with the plan:
 5 "Within 180 days from the date of the adoption of the resources management plan or any
 6 amendments by the commission, all local governments shall submit to the commission proposed
 7 amendments that will cause their general plans to be consistent with the resources management
 8 plan with respect to land located within the primary zone" (Office of Planning and Research
 9 2003:200).

10 **15.2.2.2 Delta Protection Commission, Great California Delta Trail System**

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

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

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

33 **15.2.2.3 California Department of Parks and Recreation Plans**

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

35 The Sacramento-San Joaquin Delta Reform Act mandated that the Department of Parks and
 36 Recreation develop recommendations to expand state recreation areas in the region. To comply
 37 with the legislation, the Department of Parks and Recreation issued the Recreation Proposal for the
 38 Sacramento-San Joaquin Delta and Suisun Marsh in May 2011. While the Recreation Proposal is not
 39 a binding policy document and it concedes that funding is not currently available to implement the
 40 recommendations, the Recreation Proposal does represent the department's vision for the region
 41 (California State Parks 2011). The document states, "The proposal recommends a network of
 42 recreation areas, including parks, resorts, boating facilities, historic communities, agritourism

1 attractions, and other visitor-oriented businesses. These areas would be connected by scenic driving
 2 routes, boating trails, or bicycling and hiking trails... Proposal recommendations aim to provide
 3 visitors and residents authentic outdoor experiences rooted in the unique and enduring character of
 4 the Delta and Suisun Marsh."

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

13 Central Valley Vision

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

27 Folsom Lake State Recreation Area General Plan and Amendment

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

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

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

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

22 General Plan for Brannan Island and Franks Tract State Recreation Areas

23 Brannan Island State Recreation Area

24 The approved purpose of Brannan Island State Recreation Area is “to make permanently available to

25 the people the opportunity to use and enjoy a portion of the Delta region of California and its

26 extensive inland waterways” (California Department of Parks and Recreation 1988a). In addition,

27 “the function of the Department of Parks and Recreation at Brannan Island State Recreation Area is

28 to provide facilities and opportunities for the enjoyment of a variety of water-oriented and other

29 recreational activities, consistent with the declared purpose of the unit” (California Department of

30 Parks and Recreation 1988a).

31 *The General Plan for Brannan Island and Franks Tract State Recreation Areas* (California Department

32 of Parks and Recreation 1988a) describes the resource management policies, allowable use levels,

33 land use and facility recommendations, and interpretive recommendations for the two State

34 Recreation Areas. The policies for Brannan Island State Recreation Area focus on maintaining and

35 enhancing the natural resources in the State Recreation Area, some of which relate to recreation,

36 including reducing human-caused erosion and enhancing viewsheds in the State Recreation Area.

37 Allowable use levels in the park vary from low to high, with higher use areas throughout most of the

38 central and southern (along Threemile Slough) portions of the park and low to moderate use areas

39 on the eastern, western (along Threemile Slough near the SR 160 bridge), and northern portions of

1 the park. The general plan also recommends proposed uses, facilities, and interpretive programs;
 2 many have been implemented since 1988.

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

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

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

19 **Franks Tract State Recreation Area**

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

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

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

- 40 • Provide low-intensity recreational opportunities by creating additional land base (especially
 41 beaches) for recreation activities.

- 1 • Provide only the minimum of recreation facilities to accommodate the needs of boat-in visitors.

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

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

14 **San Luis Reservoir State Recreation Area General Development Plan and**
 15 **Amendment**

16 The *General Development Plan for the San Luis Reservoir State Recreation Area* was approved in
 17 1971, although the plan was not developed to the same level of detail as later DPR general plans. In
 18 1986, the general development plan was amended to revise the land use designation for about 65
 19 acres of land on the northern side of O'Neill Forebay from undesignated to a day and overnight use
 20 designation, thus allowing development of overnight facilities in the Meadows area and boat-in, day-
 21 use, and camping facilities in the Grant Line area (California Department of Parks and Recreation
 22 1986). DPR is currently updating the general plan for the San Luis Reservoir State Recreation Area
 23 (California Department of Parks and Recreation 2010f).

24 **15.2.2.4 California Department of Fish and Wildlife Plans**

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

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

33 The *Yolo Bypass Wildlife Area Land Management Plan* (California Department of Fish and Game
 34 2008b), prepared for the 16,770-acre state wildlife area, provides guidance on managing habitats,
 35 species, and programs, and compatible, appropriate public uses. Two elements of the plan relate to
 36 recreational use: (1) the Authorized Public Use Element, and (2) the Unauthorized Public Use
 37 Element. Goals of the Authorized Public Use Element include providing new and increased
 38 opportunities for appropriate wildlife-dependent activities, supporting and expanding
 39 environmental education and interpretation opportunities, coordinating public access and use to
 40 accommodate a variety of users, fostering partnerships, expanding the volunteer program,
 41 minimizing user conflicts, supporting use of the wildlife area by Native Americans, and facilitating

safe use of the wildlife area. Tasks identified for these goals are numerous and include such items as expanding automobile tour routes, adding signage, adding wildlife-viewing facilities, expanding hunting opportunities, improving the entrance, evaluating the feasibility of additional trails, and considering adding boating and fishing opportunities without incurring any liability. The Unauthorized Public Use Element focuses on preventing unauthorized uses, such as camping or dumping, through such tasks as patrolling the areas and installing signage.

Lower Sherman Island Wildlife Area Land Management Plan

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

15.2.2.5 California Department of Parks and Recreation's Division of Boating and Waterways Regulations and Programs

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

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

CDBW supports the purpose of providing boaters with adequate facilities on the water by providing boat launch facility grants and small craft harbor development loans to public entities. Private marina owners can also apply for construction loans for improvements, such as berthing, restrooms, vessel pump-out stations, boat launching and parking facilities, and dry boat storage. The Aquatic Weed Control Program is authorized to control water hyacinth (*Eichhornia crassipes*), Brazilian

waterweed (*Egeria densa*), and South American spongeplant (*Limnobium laevigatum*) in the Delta, its tributaries, and Suisun Marsh. The Program is focused on controlling water hyacinth and Brazilian waterweed, which are highly invasive aquatic plant species that are widespread in the Delta and have substantial impacts on recreational activities in the Delta, its tributaries, and Suisun Marsh. Finally, the Abandoned Watercraft Abatement Fund is administered by CDBW with the purpose of providing funds to public agencies to remove and dispose of abandoned or wrecked vessels that pose a significant hazard to navigation.

15.2.2.6 California State Lands Commission Regulations

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

15.2.3 Regional and Local Plans, Policies, and Regulations

15.2.3.1 City and County General Plans

Alameda County

East County Area Plan

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

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

Contra Costa County

Contra Costa County General Plan

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

The county has identified Parks and Open Space Areas, some of which are in the statutory Delta. Browns Island Regional Shoreline, Antioch Dunes NWR, Big Break Regional Shoreline, and Franks Tract State Recreation Area are identified as existing parks. The county identifies CALFED Bay-Delta Program wetlands and the Jersey Island Management Area as existing open space. A number of existing neighborhood and community parks are also located in the Delta, with one of each type proposed for Bethel Island. The general plan also illustrates existing and proposed biking, hiking, and equestrian trails on Bethel Island, Hotchkiss Tract, along the Delta shoreline, and in the northeastern portion of the county.

The general plan includes the following policies related to recreation.

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

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

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

City of Antioch General Plan

The *City of Antioch General Plan* (City of Antioch 2003) aims to provide a range of parks, specialized recreational facilities, and natural open spaces. Objectives and policies encourage the preservation of significant natural features and specifically seek to secure and develop a shoreline park along the San Joaquin River, with recreational trails and viewing areas for public enjoyment of the waterfront. The Rivertown/Urban Waterfront Focus Area targets the downtown and waterfront areas for

1 revitalization, with an emphasis on creating new land uses along the riverfront, including
2 developing water-oriented recreational facilities. Plans may include expansion of the marina,
3 improvement of the boat launch, constructing a shoreline trail, bocce ball courts, and a continuous
4 park to provide public access to the entire riverfront. The general plan contains the following
5 policies on recreation.

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

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

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

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

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

17 **City of Brentwood General Plan**

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

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

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

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

31 **Community Facilities Element Action Program**

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

35 **City of Oakley General Plan**

36 The *City of Oakley 2020 General Plan* (City of Oakley 2002) identifies goals and policies to create a
37 strong connection to the Delta, including the development of recreational facilities and public access.
38 Delta Recreation is a specific land-use designation for open space and recreation lands and
39 encompasses approximately 5 acres in the lowlands of the San Joaquin Delta along the city's

1 northern edge. Because of their proximity to the Delta, these lands have substantial recreational
2 value and offer opportunities for public access to the Oakley waterfront, including parklands and
3 trails. Agriculture and wildlife habitat are also considered appropriate uses, and the City of Oakley
4 may also allow marinas, shooting ranges, duck and other hunting clubs, campgrounds, golf courses,
5 and other outdoor recreation complexes in this designation (City of Oakley 2002).

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

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

20 **City of Pittsburg General Plan**

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

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

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

- Waterfront Trail/Bikeway. A linear park along the shoreline, featuring a path for both walking and biking, would encourage more vibrant activity along the waterfront.

Sacramento County

Sacramento County General Plan

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

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

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

The general plan includes the following goal and policies.

- **Goal LU 2.2—City of Rivers:** Preserve and enhance Sacramento’s riverfronts as signature features and destinations within the City and maximize riverfront access from adjoining neighborhoods to facilitate public enjoyment of this unique open space resource.
 - **Policy LU 2.2.1—World-Class Rivers:** The City shall encourage development throughout the City to feature (e.g., access, building orientation, design) the Sacramento and American Rivers and shall develop a world-class system of riverfront parks and open spaces that 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.

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

Solano County

Solano County General Plan

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

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

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

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

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

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

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

City of Rio Vista General Plan

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

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

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

Sutter County

Sutter County General Plan

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

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

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

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

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

City of West Sacramento General Plan

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

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

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

Actions

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

East Bay Regional Park District Master Plan

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

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

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

- The District will manage riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these resources and to prevent the destruction, loss, or degradation of habitat. The District will participate in the preservation, restoration, and management of riparian and wetland areas of regional significance, and will not initiate any action that could result in a net decrease in park wetlands. The District will encourage public access to the Bay/Delta shoreline, but will control access to riparian and wetland areas, when necessary, to protect natural resources.
- The District will continue to plan, develop and provide a regional system of aquatic facilities at parks that can support these activities. The District will strive to improve public access to lakes and to the San Francisco Bay and Delta shorelines for boating and fishing, and will increase access to swimming beaches.
- The District will acquire property in accordance with the Master Plan 1997, giving careful 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 and Alternatives 4A, 2D, and 5A

The assessment methods for Conservation Measure (CM) 1, and Alternatives 2D, 4A, and 5A, which don't include CMs, 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 23.3.3 (see Table 23-16. *Predicted Noise Levels from Construction Activities* and Table 23-17. *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).

1 **Table 15-9. Recreation Opportunity Thresholds for North-of-Delta and South-of-Delta Recreation**
 2 **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, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*. 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 Late Long-Term (LLT) (with sea level rise and climate change) and action alternatives (with sea level rise and climate change that would occur at around Year 2060), for CM1.
- No Action Alternative Early Long Term (ELT) (with sea level rise and climate change) and action alternatives (with sea level rise and climate change that would occur at around Year 2025), for Alternatives 2D, 4A, and 5A.

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.

1 As discussed in Chapter 5, *Water Supply*, in evaluating effects under different SWP/CVP operational
 2 scenarios around Year 2060 conditions, readers should be aware that some of the differences
 3 between those anticipated future conditions and Existing Conditions for CEQA are solely
 4 attributable to sea level rise and climate change, and not to the action alternative operational
 5 scenarios. The results depicting differences between action alternatives scenarios under year 2060
 6 conditions and the CEQA baseline may therefore seem to exaggerate the effects of proposed
 7 operational changes. In these results, some portion of the environmental changes depicted are solely
 8 attributable to sea level rise and climate change (i.e., anticipated reductions in snowfall and effects
 9 on precipitation generally). Please refer to Chapter 5, *Water Supply*, for additional discussion of
 10 changes due to sea level rise and effects due to climate change.

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

17 Comparison of each action alternative (2060) to Existing Conditions (CEQA baseline), shows
 18 changes in SWP/CVP reservoir elevations that are caused by three factors: sea level rise, climate
 19 change, and implementation of the action alternative. Comparison of each action alternative (2060)
 20 to No Action Alternative LLT (2060) and No Action Alternative ELT (2025) will indicate the general
 21 extent of changes in SWP/CVP reservoir levels and related recreation conditions due to
 22 implementation of the action alternatives. Because sea level rise and climate change are reflected in
 23 each action alternative and in the No Action Alternative (ELT and LLT), this comparison allows
 24 isolation of the extent of changes in SWP/CVP reservoir elevations attributable to the differences in
 25 operational scenarios amongst the different action alternatives.

26 **Conservation Measures 2 through 21 and Environmental Commitments**

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

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

36 The BDCP Implementation Office would implement measures to avoid and minimize effects on
 37 covered species and natural communities that could result from BDCP covered activities. The
 38 avoidance and minimization measures (AMMs) that would be implemented through this framework
 39 are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*.¹ These measures would
 40 be implemented for covered activities throughout the BDCP permit term. These AMMs would be

¹ As described in Chapter 1, *Introduction*, Section 1.1, the Final EIR/EIS includes the 2013 Draft EIR/EIS, BDCP, 2015 RDEIR/SDEIS, and all associated appendices with these documents; as well as revisions to these documents as contained in this Final EIR/EIS.

1 implemented under all action alternatives but would not be expected to result in any meaningful
2 effects on recreation sites, opportunities, or experiences in the study area because they either
3 involve planning, surveying, or other non-land-based activities; or involve implementation of short-
4 term and localized best management practices to protect covered species but would not disrupt
5 recreation activities in the study area.

6 As described in detail in Section 3.5.18.3 of Chapter 3, *Description of Alternatives*, portions of the
7 actions proposed under CM3, CM4, CM6, CM7, CM8, CM9, CM10, CM11, CM12, CM15, and CM16
8 would be included in Alternatives 2D, 4A, and 5A. However, these activities would not be
9 “conservation measures.” The term “conservation measure” is often used in the context of Habitat
10 Conservation Plans under Section 10(a)(2) of the Endangered Species Act (ESA) and Natural
11 Community Conservation Plans under the Natural Community Conservation Planning Act. As noted,
12 these Environmental Commitments are actions primarily intended to satisfy CEQA, California
13 Endangered Species Act (CESA) Section 2081, and ESA Section 7. This Final EIR/EIS describes and
14 analyzes Environmental Commitments 3, 4, 6–12, 15, and 16 at a level of detail consistent with that
15 applied to these activities under the BDCP alternatives (Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5,
16 6A, 6B, 6C, 7, 8, and 9). Specific locations for implementing many of the activities associated with
17 these commitments have not been identified at this time. Therefore, the analyses considers typical
18 construction, operation, and maintenance activities that would be undertaken for implementation of
19 the habitat restoration and enhancement and stressor reduction efforts. Where appropriate and
20 necessary, implementation of individual projects associated with an Environmental Commitment
21 would be subject to additional environmental review. Additionally, pertinent elements included as
22 AMMs and the proposed Adaptive Management and Monitoring Program would be implemented as
23 applicable during the activities proposed under Alternatives 2D, 4A, and 5A (the non-HCP
24 alternatives).

25 **15.3.2 Determination of Effects**

26 The criteria used for determining the significance of an effect on recreational resources are based on
27 Appendix G of the State CEQA Guidelines (Environmental Checklist) and professional standards and
28 practices. Effects on both water-dependent and water-enhanced recreation opportunities may be
29 considered adverse for purposes of the National Environmental Policy Act (NEPA) and significant
30 for purposes of CEQA if an alternative would result in any one of the following conditions.

- 31 • Locate alternative facilities that would result in the permanent displacement of well-established
32 recreational facilities. For purposes of this analysis, the permanent displacement of a well-
33 established recreation facility is defined as circumstances in which construction or operational
34 activities would result in the permanent loss or closure of such facility or activity.
- 35 • Result in substantial long-term reduction of recreation opportunities and experiences, such as
36 reduce the amount of area available for a particular type of recreation. Recreation experiences
37 in the study area include consideration of visual effects attributable to construction and
38 operation activities associated with water conveyance facilities. For purposes of this analysis,
39 the long-term loss of recreation opportunities and experiences is defined as circumstances in
40 which construction or operations and maintenance activities would result in loss of public
41 access to or public use of well-established recreation facilities or activities lasting for more than
42 2 years.

- 1 ● Cause a change in river flows or reservoir elevations that would result in substantial reductions
2 in water-based recreation opportunities. For the purposes of this analysis, effects on water-
3 dependent and water-enhanced recreation activities at reservoirs are considered substantial or
4 adverse if there would be a 10% or greater (more than 8 years) reduction in the frequency of
5 recreation facility availability, using the reservoir recreation thresholds (Table 15-9),
6 attributable to action alternative operations (U.S. Fish and Wildlife Service et al. 1999:3-281-3-
7 282). An increase or decrease in the frequency at which reservoir levels exceed the recreation
8 reservoir elevation threshold of less than 10% (8 years or fewer), attributable to action
9 alternative, operations would not be adverse. An increase in the frequency at which reservoir
10 levels exceed the recreation reservoir elevation threshold attributable to action alternative
11 operations, is considered a beneficial effect on the recreation activities and experience.
- 12 ● Cause an increase in the use of existing neighborhood and regional parks or other recreational
13 facilities such that substantial physical deterioration of the facility would occur or be
14 accelerated. For purposes of this analysis, substantial physical deterioration is defined as
15 circumstances in which construction or operational activities would increase study area
16 population levels such that well established recreation facilities would deteriorate at an
17 accelerated rate resulting in loss of use of neighborhood or regional park facilities.

18 In addition, constructing the proposed water conveyance facilities (CM1) and implementing the
19 other conservation measures (CM2–CM21) could result in potential inconsistencies with plans and
20 policies related to the protection of recreation resources in the Delta region. A number of plans and
21 policies that coincide with the study area boundaries provide guidance for recreation issues as
22 overviewed in Section 15.2, *Regulatory Setting*. The analysis of the alternatives provides an
23 assessment of whether the alternatives are consistent or inconsistent with these plans and policies,
24 rather than determining whether impacts would be adverse or not adverse or significant or less
25 than significant. If an inconsistency relates to an applicable plan, policy, or regulation adopted to
26 avoid or mitigate effects on recreation, then an inconsistency might be indicative of a related
27 significant or adverse effect under CEQA and NEPA, respectively. Such physical effects of the
28 alternatives on resources are addressed in the impact discussions under each alternative and in
29 other chapters, such as Chapter 23 *Noise*, Sections 23.3.3.2 through 23.3.3.16 and Sections 23.3.4.2
30 through 23.3.4.4, and Chapter 17, *Aesthetics and Visual Resources*, Sections 17.3.3.2 through
31 17.3.3.16 and Section 17.3.4.2 through 17.3.4.4.

32 **15.3.3 Effects and Mitigation Approaches**

33 Overall construction of the water conveyance facilities is expected to last up to 12 years for all
34 alternatives except Alternatives 4 and 4A; construction under Alternatives 4 and 4A would last 13
35 years. Implementation of the other conservation measures would be ongoing for the term of the
36 BDCP (50 years). Construction activities adjacent to or within certain recreation areas or sites could
37 last from 1 to 7.5 years; activities that do not require removal of a recreation facility or permanent
38 use of a site would be considered temporary effects. Temporary effects (loss of recreation
39 opportunity) are considered short-term if the duration is 2 years or less, or long-term, if the
40 duration is more than 2 years.

41 Chapter 16, *Socioeconomics*, Sections 16.3.3.2 through 16.3.3.16 and Sections 16.3.4.2 through
42 16.3.4.4, discuss tourism and recreation as economic drivers in the Delta region and how the
43 potential effects of the alternatives on recreation opportunities discussed in this chapter could affect
44 regional economics, community character, local government fiscal conditions, and recreation

1 economics as a result of constructing, operating and maintaining the proposed water conveyance
2 facilities and conservation measures. The reader is referred to Chapter 16, *Socioeconomics*, Sections
3 16.3.3.2 through 16.3.3.16 and Sections 16.3.4.2 through 16.3.4.4, for further discussion of this topic.

4 Chapter 17, *Aesthetics and Visual Resources*, Sections 17.3.3.2 through 17.3.3.16 and Sections
5 17.3.4.2 through 17.3.4.4, discuss the long-term changes in the local visual setting on sensitive
6 receptors from introduction of the alternative water conveyance facilities to the project area.

7 Chapter 20, *Public Services and Utilities*, Sections 20.3.3.2 through 20.3.3.16 and Sections 20.3.4.2
8 through 20.3.4.4, describe the estimated increase in study area population associated with
9 construction of the action alternatives. It is anticipated that many of the construction jobs would be
10 filled from the existing labor force in the five-county study area region although construction of the
11 conveyance tunnels may require specialized skills resulting in recruitment of specially trained
12 workers coming from outside this region. As described in Chapter 16, *Socioeconomics*, Section
13 16.3.3.2, Impact ECON-2, this additional population would constitute a minor increase in the total
14 2020 projected regional population of 4.6 million. Because the construction population would
15 primarily come from the five-county labor force and because the minor increase in demand from the
16 worker population that would move into the area for specialized jobs (e.g., tunnel construction)
17 would be spread across the large multi-county study area, construction of the alternative is not
18 anticipated to result in an increased demand or adverse effects on existing neighborhood and
19 regional parks or other recreational facilities such that substantial physical deterioration of the
20 facility would occur or be accelerated. This effect is not discussed further in this chapter.

21 Noise traffic modeling indicates that increased noise levels from construction truck hauling and
22 worker commutes would result in substantial increases in local noise levels at nearby residences,
23 parks and recreational uses. The project-related increase in noise levels would exceed the project
24 threshold for traffic noise and would be considered an adverse effect. Mitigation Measures NOI-1a
25 and NOI-1b are available to reduce this effect; however, implementation of feasible measures would
26 not be available in all situations to reduce levels below applicable thresholds. The reader is referred
27 to Chapter 23, *Noise*, for further discussion of these topics.

28 As discussed in Chapter 6, *Surface Water*, CALSIM modeling results indicate that effect on
29 Sacramento and San Joaquin River flows would be less than significant. Additionally, the project
30 would result in a reduction of reverse flow conditions in the Old and Middle Rivers, creating a
31 positive change in the majority of months on a long-term average basis compared with Existing
32 Conditions and the No Action Alternative. Therefore, these are not discussed further. North-of-Delta
33 reservoirs (Lewiston, Whiskeytown, Keswick, Thermalito, and Natoma) and south-of-Delta
34 reservoirs (Castaic Lake, Lake Perris, Pyramid Lake, Silverwood Lake, Castaic Lagoon) are currently
35 operated with a seasonal storage pattern (elevations) with very small variation from year to year.
36 Major San Joaquin Valley eastside reservoirs (i.e., Millerton lake, New Melones Reservoir, etc.) were
37 not evaluated because water system operations would not be anticipated to result in a change in
38 annual storage patterns. These operations would remain the same under all the action alternatives
39 and no effects would occur as a result of implementing the alternatives. These reservoirs are not
40 discussed further. Similarly, the action alternatives are not expected to result in a substantial
41 decrease or increase in Delta surface water levels; therefore, surface water elevations are not
42 discussed further in this chapter. Please refer to Appendix 5A, *BDCP/California WaterFix FEIR/FEIS*
43 *Modeling Technical Appendix*, for more information.

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 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/Alternative, 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 National Marine Fisheries Service (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.

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

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

1 Delta Land-Based Recreation

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

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

16 Recreation Upstream of the Delta

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

27 CALSIM II output was used to help evaluate the potential changes in north-of-Delta and south-of-
 28 Delta reservoirs where recreation opportunities could be affected by the alternatives, including the
 29 No Action Alternative. The results are shown in Table 15-10a and Table 15-10b. Also see Chapter 3,
 30 *Description of Alternatives*, Section 3.5.1, for detailed information on the No Action Alternative, and
 31 Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation
 32 of the CALSIM II model and assumptions.

33 Existing Conditions (CEQA Baseline) Compared to No Action Alternative

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

1 rise and climate change to the total differences between Existing Conditions and No Action
 2 Alternative cannot be isolated in this comparison.

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

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

^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.

5

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

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

^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.

8

1 **Summary**

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

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

14 **Catastrophic Seismic Risks**

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

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

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

12 **15.3.3.2 Alternative 1A—Dual Conveyance with Pipeline/Tunnel and**
13 **Intakes 1–5 (15,000 cfs; Operational Scenario A)**

14 Alternative 1A includes the construction of the five north Delta intake facilities (Intakes 1–5)
15 between River Mile (RM) 44 (south of Freeport) and RM 37 (north of the town of Courtland). Table
16 15-11 lists the recreation sites and areas that may be affected by Alternative 1A. No recreation sites
17 fall within the construction footprint (Mapbook Figure M15-1). Specific effects on recreation areas
18 or 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 23.3.3.2, 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.

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: No recreation sites are within the construction footprint. A total of seven recreation sites are within the 1,200 to 1,400-foot indirect impact area associated with aboveground construction of the proposed water conveyance facilities (CM1) (see Chapter 23, *Noise*, Section 23.3.3.2, Impact NOI-1). The Cosumnes River Preserve does not have public use facilities that fall within the impact area although wildlife viewing opportunities could be affected. The effects that could occur at each potentially affected recreation site are discussed below. Potential indirect effects on recreation include reduced access, construction noise, and changes in the visual character of the area surrounding the recreation sites. Also see Chapters 12, *Terrestrial and Biological Resources*, 17, *Socioeconomics*, 19, *Transportation*, and 23, *Noise*, for additional detail related to waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively.

Clarksburg Boat Launch (Fishing Access)

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

Stone Lakes National Wildlife Refuge

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

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

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

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

Georgiana Slough Fishing Access

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

Cosumnes River Preserve (Private Lands)

While the Cosumnes River Preserve provides opportunities for limited fishing and hunting, hiking, paddling, wildlife viewing, and environmental education, public access is concentrated around the visitor center which is located approximately 5 miles east of the alternative alignment. Nearly all public recreation activities would be outside of the construction impact areas. Construction primarily would take place Monday through Friday, for up to 24 hours per day with dewatering 7 days per week and 24 hours per day. Construction noise could affect wildlife viewing and environmental education opportunities for docent guided tours. The recreation experience of

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

14 **Bullfrog Landing Marina**

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

29 **Whiskey Slough Harbor Marina**

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

39 **Clifton Court Forebay**

40 Clifton Court Forebay offers public fishing and hunting access from Lindeman Road on the west side
41 of the forebay. There are no recreation facilities at the forebay; motorized boating, camping, and
42 swimming are not allowed. Most fishing and hunting use at the forebay likely occurs along the west

1 and south areas of the forebay, although some visitors walk or ride a bike around the forebay to
2 reach other fishing and hunting locations.

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

33 ***Other Recreation Opportunities***

34 ***On-Water Recreation***

35 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
36 construction impact area for Intakes 1 and 2. Similarly, Lazy M Marina and Rivers End Marina &
37 Storage sites are not within the construction noise impact area for the Byron Tract Forebay and
38 related facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing
39 sites fall outside of the impact area for noise, the overall recreation experience upstream or
40 downstream of these sites may fall within the noise impact area and could experience diminished
41 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
42 over the course of construction. Overall, construction activities associated with the proposed water
43 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
44 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be

1 further limited primarily to June 1 through October 31 each year. Although dewatering would take
2 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
3 construction could reduce the abundance of fish and other wildlife in recreation areas in the vicinity
4 of the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
5 recreationists to experience a change in recreation opportunities.

6 **Campgrounds**

7 Nighttime construction activities would require the use of bright lights that would negatively affect
8 nighttime views of and from the work area. This would affect any overnight camping at the
9 recreation sites and areas discussed above, although day use areas that close at sunset would not be
10 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
11 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
12 23.3.3.2, another nighttime effect on recreation would be construction noise levels that could
13 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
14 areas. Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-
15 1a and NOI-1b would be available to address these effects.

16 **Summary**

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

23 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could
24 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
25 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
26 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
27 measures, environmental commitments, and conservation measures would provide several benefits
28 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
29 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
30 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
31 construction-related disturbances (noise and visual), installation of transmission lines, or habitat
32 degradation associated with accidental spills, runoff and sedimentation, and dust could have
33 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
34 sandhill crane would be minimized with implementation of *AMM20 Greater Sandhill Crane* and
35 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
36 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
37 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
38 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
39 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
40 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
41 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
42 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
43 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
44 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide

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

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

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

38 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
39 involve preparation of site-specific construction traffic management plans that would address
40 potential public access routes and provide construction information notification to local residents
41 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
42 of access to affected recreation areas as an environmental commitment. Where construction
43 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
44 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
45 construction sites. These would be designed to be safe, pleasant and would integrate with
46 opportunities to view the construction site as an additional area of interest. These physical facilities

would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments, although this mitigation measure (TRANS-1c) would require cooperation from the affected jurisdictions, and therefore there is no way to guarantee its effectiveness.

Chapter 23, *Noise*, Section 23.3.3.2, discusses that construction noise effects could be addressed through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and implementation of a complaint/response tracking program (NOI-1b), and an environmental commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

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

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

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

41 Construction-related impacts on informal fishing access sites near the proposed water
 42 conveyance facilities, such as along the east bank of the Sacramento River, in the vicinity of the
 43 proposed intakes, in the vicinity of the expanded Clifton Court Forebay, and would be
 44 considered significant because construction would alter the river bank and/or restrict access,

1 making these sites unusable. To compensate for the loss of these informal sites during
2 construction, the BDCP proponents will enhance nearby formal fishing access sites, including
3 partnering with Yolo County to enhance the Clarksburg Fishing Access site on the west bank of
4 the Sacramento River, with the Sacramento County Department of Regional Parks to enhance
5 the Cliffhouse Fishing Access site on the east bank of the Sacramento River and the Georgiana
6 Slough Fishing Access site east of the Sacramento River, and with Contra Costa County to
7 enhance fishing sites near Clifton Court Forebay, as well as other nearby sites. Prior to
8 construction of the proposed water conveyance facilities, the BDCP proponents will ensure
9 adequate signage will be placed at the informal sites that would be directly affected by
10 construction of the intakes, directing anglers to the formal sites. Upgrading the existing fishing
11 access sites will be completed prior to beginning construction of the intakes.

12 Where intake locations would remove existing public access to the Sacramento River for
13 recreational purposes, as part of design of the intakes, the BDCP proponents will ensure that
14 public access to the Sacramento River, including fishing access, will be incorporated into the
15 design of the intakes. The access sites will be placed a reasonable distance from the intake to
16 ensure the safety of recreationists and to compensate for the loss that would occur as a result of
17 constructing the intakes.

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

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

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.

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

36 Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*,
37 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

26 Please refer to Mitigation Measure AES-4d 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, AMMs, and*
9 *CMs*, relating to the enhancement of recreational access and control of aquatic weeds in the Delta
10 would reduce these effects. Although there is sufficient width in the channel to allow boat passage,
11 boaters could experience minor delays related to construction speed zones. Implementation of
12 Mitigation Measure TRANS-1a to prepare a transportation management plan, including elements to
13 address waterway navigation and to provide notification of construction activities in waterways
14 would reduce these effects. However, this potential to result in a reduction of recreational
15 navigation opportunities would be considered adverse because, although temporary, the effects
16 would be long term, lasting 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 M15-1).
20 The 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, AMMs, and CMs*.

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, AMMs, and CMs*.

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 a long-term reduction of recreational fishing opportunities at Clifton Court Forebay.
4 There would be no adverse effects.

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

21 Although construction noise would be temporary, and primarily be limited to Monday through
22 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
23 sites. Visual setting disruptions could distract from the recreation experience including on
24 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
25 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
26 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
27 measures would also be available to address construction-related visual effects on sensitive
28 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
29 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
30 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
31 addition, the chapter identifies measures to address longer term visual effects associated with
32 changes to the landscape/visual setting from construction and the presence of new water
33 conveyance features. These include developing and implementing a spoil/borrow and RTM area
34 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
35 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
36 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
37 implementing best management practices to implement a project landscaping plan (AES-1g).
38 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
39 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
40 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
41 anglers with alternative bank fishing access sites further removed from areas affected by
42 construction. Therefore, construction of the proposed water conveyance facilities would not result
43 in a long-term reduction of recreational fishing opportunities. 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, including 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, AMMs, and CMs*); and Mitigation Measures AQUA-1a and AQUA-1b to
8 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
9 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
10 such 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: Monitor Underwater Noise, and if Necessary, Use an
20 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
21 Underwater Noise**

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
25 Construction**

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

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

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

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

33 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
34 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 1A 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 11.3.4.2, 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 1A would be considered less than significant because any impacts to fish
35 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
36 would 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:** Generally, the peak recreation season at the reservoirs falls between May to
5 September. Reservoirs are usually at maximum storage volume and surface water elevation in May
6 and decline over the course of the summer through September. This analysis compares the results of
7 the CALSIM II end-of-September reservoir water surface elevations because typically there are more
8 instances in which reservoir elevations fall below key surface water elevation thresholds (hereafter
9 referred to as “recreation thresholds”) (i.e., number of years out of the 82 simulated when the
10 September end-of-month storage is less than the recreation elevation threshold). Under these
11 conditions, the overall usable reservoir area is reduced and previously submerged islands or shoals
12 may become exposed and affect boating safety. In addition, shoreline recreation becomes degraded.

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

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

24 As shown in Table 15-12a and Table 15-12b, under Alternative 1A there would be from 1 to 20
25 additional years when end-of-September elevations result in the recreation thresholds being
26 exceeded at the reservoirs relative to the existing condition. These represent a greater than 10%
27 increased exceedance of the reservoir thresholds at Trinity Lake, Shasta Lake, Folsom Lake, and San
28 Luis Reservoir. However, as discussed under Section 15.3.1, *Methods for Analysis*, these changes in
29 SWP/CVP reservoir elevations are caused by sea level rise, climate change, and operation of the
30 alternative. It is not possible to specifically define the exact extent of the changes due to
31 implementation of the action alternative using these model simulation results. Thus, the precise
32 contributions of sea level rise and climate change to the total differences between Existing
33 Conditions and Alternative 1A cannot be isolated in this comparison. Please refer to the comparison
34 of the No Action Alternative (2060) to Alternative 1A (2060) for a discussion of the potential effects
35 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											
	Trinity Lake <2,270 ft elevation				Shasta Lake <967 ft elevation				Lake Oroville <700 ft elevation			
	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (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.

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 <405 ft elevation		New Melones Lake <900 ft elevation		San Luis Reservoir <360 ft elevation	
	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (NEPA)	Years ^b	Change relative to Existing Condition (CEQA) ^c	Change relative to No Action 2060 (NEPA)
Existing Condition (CEQA)	22			9		3
No Action (2060)	50	28		13	4	9
Alternative 1A-C (2060)	38	16	-12	12	3	-1
Alternative 2 A-C (2060)	44	22	-6	13	4	0
Alternative 3 (2060)	41	19	-9	12	3	-1
Alternative 4 (2060)						
Scenario H1	41	19	-9	13	4	0
Scenario H2	37	15	-13	12	3	-1
Scenario H3	44	22	-6	13	4	0
Scenario H4	47	25	-3	12	3	-1
Alternative 5 (2060)	48	26	-2	12	3	-1
Alternative 6 A-C (2060)	43	21	-7	12	3	-1
Alternative 7 (2060)	51	29	1	13	4	0
Alternative 8 (2060)	49	27	-1	13	4	0
Alternative 9 (2060)	45	23	-5	12	3	-1

^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.

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,
5 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As shown in Table 15-12a and
6 Table 15-12b, operation of Alternative 1A would result in changes in the frequency with which the
7 end-of-September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, New
8 Melones Lake, and San Luis Reservoir would fall below levels identified as water-dependent
9 recreation thresholds. In all but one instance (San Luis Reservoir), the CALSIM II modeling results
10 indicate that reservoir levels under Alternative 1A operations would fall below the individual
11 reservoir thresholds less frequently than under No Action Alternative (2060) conditions. These
12 changes in reservoir elevations would not be adverse at Trinity Lake, Shasta Lake, Lake Oroville,
13 Folsom Lake, and New Melones Lake, and would be considered beneficial effects of Alternative 1A
14 operations. Operation of Alternative 1A would not adversely affect water-dependent or water-
15 enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation
16 conditions under operation of Alternative 1A because there would be fewer years in which end-of-
17 September reservoir levels would fall below the recreation thresholds thus indicating better boating
18 opportunities, when compared to No Action Alternative (2060) conditions.

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

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

1 recreation thresholds thus indicating better boating opportunities, when compared to No Action
2 Alternative (2060) conditions. No mitigation is 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 maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*)
21 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 maintenance activities in waterways
26 (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*) 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 CM2-CM21**

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 in
11 the BDCP, Chapter 3, *Conservation Strategy*). One site is northwest of the city limits and could be
12 used for a supplementation production facility. This site is not near any existing well-established
13 recreation sites or opportunities and is approximately 1 mile from the Sacramento River such that
14 future construction and operation activities would not be expected to affect water-based recreation
15 opportunities and experiences. The other site is a former Army Reserve base on the west river bank,
16 south of the city limits, that would be developed as a genetic refuge and research facility.
17 Construction at this site could affect recreation activities and experiences at the Delta Marina Yacht
18 Harbor, immediately north of the site, and boating (including boat fishing) on the Sacramento River,
19 depending on noise levels and the degree of visual disturbances. Additional permitting and
20 environmental documentation would be needed to implement this conservation measure once
21 facility designs and funding are available. Overall, implementation of CM18 would not be expected to
22 have an adverse effect on fishing opportunities because construction of the facility would be
23 anticipated to last 2 years or less (short term) and operation of the facility would not be expected to
24 affect recreational fishing.

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

32 Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive
33 Species Program designed to implement actions to prevent the introduction of new aquatic invasive
34 species and reduce the spread of existing aquatic invasive species via recreational watercraft,
35 trailers, and other mobile recreational equipment used in aquatic environments in the study area.
36 The program would consist of two primary elements targeting recreational boaters: education and
37 outreach, and watercraft inspection. Education and outreach printed materials and interpretive
38 displays would provide information regarding the presence and range of existing aquatic invasive
39 species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive
40 species spreading within the study area, and the risk of new aquatic invasive species introductions.
41 The watercraft inspection would involve development and implementation of a comprehensive
42 inspection program. This type of program involves screening interviews at the point of entry; a
43 comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk
44 during the screening interview; decontamination and/or quarantine or exclusion of watercraft,
45 trailers, and equipment that are not clean, drained, and dry; and optional vessel certification. These
46 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 Plan
38 (*Appendix 3B, Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
39 fish species and although these CMs would result in highly localized reductions of predatory species,
40 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
41 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.2). Construction
42 of 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, AMMs, and CMs*). In addition, mitigation measures and environmental
4 commitments identified to reduce the effects of constructing CM1 would also be used to minimize
5 effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated
6 with 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, AMMs, and CMs*; also see additional discussion under Impact REC-2
16 and Impact REC-3). 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, AES-4c and AES-4d; also
20 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
21 TRANS-1a, TRANS-1b, and TRANS-1c 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 address construction-related noise concerns (see additional discussion under Impact
25 REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.2). Finally, should construction
26 of conservation measure facilities require pile-driving, mitigation measures to protect fish and
27 aquatic species would be implemented to reduce these impacts (see additional discussion under
28 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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.

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: Monitor Underwater Noise, and if Necessary, Use an**
20 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
21 **Underwater Noise**

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

24 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
25 **as a Result of Implementing CM2–CM21**

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

33 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
34 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
35 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
36 improvements and flow management facilities, would be implemented in four phases starting with
37 plan implementation and continuing to approximately 2063. Boats are not allowed in the Yolo

1 Bypass Wildlife Area, so construction activities associated with the physical modifications for this
2 measure would not affect boating opportunities. The maximum extent of inundation in the Yolo
3 Bypass would not increase from current conditions, but the frequency and duration of inundation
4 events would increase. This measure would not affect opportunities for boating-related activities as
5 a result of longer inundation periods.

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

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

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

41 CM11 would provide beneficial effects on boating opportunities by allowing recreation to occur on
42 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
43 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
44 4, Section 4.2.3.9.2 *Recreation*). The reserve system would update one boating facility, as well as a

1 new boat launch facility within the footprint of the North Delta diversion facilities, which would
2 increase opportunities for boating within the study area.

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. While aquatic vegetation removal operations could temporarily restrict or obstruct
6 navigation and reduce the quality of boating, overall the measure would increase boat passage and
7 navigation and would improve the boating experience.

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

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 CM18 would establish new conservation propagation programs and expand the existing program for
19 delta and longfin smelt. This measure would include development of a delta and longfin smelt
20 conservation hatchery by USFWS. The specifications and operations of this facility have not been
21 developed. The final selection of a location for the facility will involve additional environmental
22 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
23 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20 in
24 BDCP Chapter 3, *Conservation Strategy*). One site is northwest of the city limits and could be used for
25 a supplementation production facility. This site is not near any existing well-established recreation
26 sites or opportunities and is approximately 1 mile from the Sacramento River such that future
27 construction and operation activities would not be expected to affect water-based recreation
28 opportunities and experiences. The other site is a former Army Reserve base on the west river bank,
29 south of the city limits, that would be developed as a genetic refuge and research facility.

30 Construction at this site could affect recreation activities and experiences at the Delta Marina Yacht
31 Harbor, immediately north of the site, and boating on the Sacramento River, depending on noise
32 levels and the degree of visual disturbances. The BDCP proponents would implement environmental
33 commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
34 *and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3) to lessen these
35 impacts. In addition, a number of mitigation measures address construction-related impacts on
36 recreational boating by reducing the degree of aesthetic and visual degradation at the construction
37 site (see Chapter 17, Aesthetics and Visual Resources, Section 17.3.3.2, Mitigation Measures AES-1a,
38 AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional
39 discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-
40 1b, and TRANS-1c address traffic and transportation safety and access conditions of the marina (see
41 additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*,
42 Section 19.3.3.9). Mitigation Measures NOI-1a and NOI-1b address construction-related noise
43 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
44 *Noise*, Section 23.3.3.2). Implementation of these measures, as determined applicable to
45 construction of this facility under future site-specific environmental review, would reduce impacts

related to a long-term reduction in boating-related recreation activities to a less-than-significant level. Overall, implementation of CM18 would not be expected to have an adverse effect on recreational boating opportunities.

Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive Species Program designed to implement actions to prevent the introduction of new aquatic invasive species and reduce the spread of existing aquatic invasive species via recreational watercraft, trailers, and other mobile recreational equipment used in aquatic environments in the study area. The program would consist of two primary elements targeting recreational boaters: education and outreach, and watercraft inspection. Education and outreach printed materials and interpretive displays would provide information regarding the presence and range of existing aquatic invasive species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive species spreading within the study area, and the risk of new aquatic invasive species introductions. The watercraft inspection would involve development and implementation of a comprehensive inspection program. This type of program involves screening interviews at the point of entry; a comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk during the screening interview; decontamination and/or quarantine or exclusion of watercraft, trailers, and equipment that are not clean, drained, and dry; and optional vessel certification. Although there could be a marginal effect on the recreation experience if boaters are delayed at the boat launch, it is expected that there would be no adverse effect on recreational boating.

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

With the exception of CM 18, these measures would not result in a long-term reduction in boating-related recreation activities. With mitigation implemented, CM 18 would result not be adverse. Overall, this impact would not be adverse.

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

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. Overall, these measures would not be anticipated to result in a long-term reduction in
5 boating-related recreation activities; therefore, this impact is considered less than significant for the
6 conservation 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 base
8 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
9 site. The BDCP proponents would implement environmental commitments to include a noise
10 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
11 discussion under Impact REC-2 and Impact REC-3) to lessen these impacts. In addition, a number of
12 mitigation measures address construction-related impacts on recreational boating by reducing the
13 degree of aesthetic and visual degradation at the construction site (see Chapter 17, *Aesthetics and*
14 *Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e,
15 AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and
16 Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and
17 transportation safety and access conditions of the marina (see additional discussion under Impact
18 REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.2). Mitigation
19 Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional
20 discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.2).
21 Implementation of these measures, as determined applicable to construction of this facility under
22 future site-specific environmental review, would reduce impacts on recreational boating to less-
23 than-significant. No 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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 CM2–CM21**

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

23 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
24 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
25 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
26 improvements and flow management facilities, would be implemented in four phases starting with
27 plan implementation and continuing to approximately 2063. The maximum extent of inundation in
28 the Yolo Bypass would not increase from current conditions, but the frequency and duration of
29 inundation events would increase. The Yolo Bypass Wildlife Area provides opportunities for upland
30 recreational activities, including waterfowl and upland game bird hunting, hiking and walking,
31 wildlife viewing, botanical viewing, and nature photography. Changes to flood management in the
32 Yolo Bypass have the potential to result in effects on waterfowl and other recreation uses, including
33 recreational hunting, in this area (Ducks Unlimited 2012). Because the wildlife area closes during
34 periods of inundation, this measure would decrease opportunities for these activities as a result of
35 the longer inundation periods in the Yolo Bypass. Under Existing Conditions, flood-related
36 conditions contribute to Yolo Bypass hunting area closures lasting for up to 2 weeks (14 days) out of
37 the 100-day hunting season. Removal of berms and levees could also decrease recreational access in
38 the Yolo Bypass. Construction activities would also temporarily affect the quality of activities by
39 introducing noise, odors, and unattractive visual scenes into the recreational environment. Longer
40 inundation events would reduce wetland-dependent wildlife species access to food and could result
41 in impacts to upland game birds and failure of nesting birds during spring events. This may decrease
42 hunting and wildlife viewing experiences. Winter flood water levels under CM2 could be deeper
43 than Existing Conditions, waterfowl species (e.g., dabbling duck) that prefer a shallower flooded

1 seasonal wetland area could experience reduced foraging habitat. Another factor that could affect
2 waterfowl populations and related waterfowl hunting and bird watching would be spring seed
3 production loss and related decrease of food resources for these populations (Ducks Unlimited
4 2012). Hunting in the Yolo Bypass is most common in the lower elevation portions of the property;
5 thus, low levels of flooding would impact blind areas and free roam areas and reduce hunting
6 opportunities. Two inundation targets have been proposed for CM2, which would attempt to
7 inundate 7,000-10,000 acres from November to May, or 17,000 acres from December through
8 February, every year for 50 years, which could have potential effects on waterfowl and associated
9 recreational opportunities. The hunting season for waterfowl lasts from late October through
10 January, so some months would not be affected by inundation. However, CM2 would still have an
11 adverse effect on upland recreational opportunities. BDCP proponents and agencies will work with
12 CDFW to provide alternate public hunting opportunities and access and address additional
13 management costs resulting from increased inundation of the Yolo Wildlife Area resulting from
14 CM2. Additionally, environmental commitments are available to reduce the effects of inundation on
15 upland recreational opportunities.

16 CM3 provides the mechanism and guidance for land acquisition and establishment of a system of
17 conservation lands in the study area necessary to meet BDCP natural community and species habitat
18 protection objectives. This system of conservation lands would be built over the implementation
19 term of the BDCP to protect and enhance areas of existing natural communities and covered species
20 habitat, protect and maintain selected plant species with very limited distributions, provide sites
21 suitable for restoration of natural communities and covered species habitat, and provide habitat
22 connectivity among the various BDCP conservation land units in the system. This measure includes
23 8,000 acres of grassland habitat, 600 additional acres vernal pool complex, 150 acres of alkali
24 seasonal wetland complex and 46,905 acres of agricultural habitats (cultivated lands) all protected
25 under CM3; tidal habitat restored under CM4; valley/foothill riparian habitat restored under CM7;
26 vernal pool complex restored to achieve no net loss under CM9; and nontidal freshwater perennial
27 emergent wetland and nontidal perennial aquatic habitat restored under CM10. Depending on the
28 acquisition strategy implemented through this measure, recreational access for upland activities
29 could be expanded or diminished. Mechanisms that permit public access would increase
30 opportunities related to upland hunting, hiking, walking, wildlife viewing, botanical viewing, nature
31 photography, picnicking, and sightseeing. Alternatively, acquisition that would exclude public
32 recreational use would decrease opportunities for these activities.

33 CM4 provides for restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
34 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
35 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
36 late long-term, BDCP implementation would provide for the cumulative restoration of 65,000 acres
37 of freshwater and brackish tidal habitat in the BDCP ROAs under Alternative 1A. The extent of
38 restored tidal habitat includes shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal
39 marsh plain habitat, and adjoining transitional upland habitat. Areas to be restored would be
40 modified by breaching and lowering levees, constructing new or modified levees to protect adjacent
41 areas from flooding, connecting remnant sloughs or channels to improve circulation, and modifying
42 ground elevations to reduce effects of subsidence. Site preparation and earthwork associated with
43 this restoration could result in temporary closure to recreational areas and excess noise, decreasing
44 recreational quality. Additionally, some upland areas would be converted to tidal habitat as part of
45 this measure, limiting access for upland recreation activities including upland hiking and walking,
46 camping, picnicking, and nature viewing and photography. However, because transitional upland

1 habitat adjoining tidal areas would also be restored, this could also create new opportunities.
2 Furthermore, restoration actions adjacent to existing recreational areas could enhance the quality of
3 the experience in these areas.

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

19 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
20 and mudflat habitats along existing levees. Under CM6 at least 5 miles of habitat would be enhanced
21 within the first 10 years and up to 20 miles after 30 years. At least 5 of the 20 miles of channel
22 margin enhancement would take place along the Sacramento River and at least 5 miles would be
23 along the San Joaquin River. The remaining 10 miles would be distributed among other fish
24 migration channels. Earthwork and site preparation associated with habitat enhancement may limit
25 access to existing upland recreational areas and degrade the recreational experience. This measure
26 would create benches on the outboard side of levees or create setback levees. Where setback levees
27 and associated enhancement activities close access to existing upland areas, associated recreational
28 opportunities such as wildlife viewing and hiking would be reduced. Where habitat enhancement
29 creates new upland areas accessible to recreationists, the opportunities for upland activities would
30 improve. In either case, habitat enhancements would improve the experience of wildlife-dependent
31 upland recreational activities from existing, adjacent recreation areas.

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

42 Under CM8, 2,000 acres of grassland within CZ 1, CZ 8, and CZ 11 would be restored. Restoration
43 activities for this measure would be associated with tidal habitat restoration under CM4 and
44 agricultural land protection under CM3. Anticipated actions to restore grassland habitat, as
45 appropriate to site-specific conditions, would include, but not be limited to, acquiring lands, in fee

title or through conservation easements, with site characteristics that support restoration of high-value grassland, restoring grassland by sowing native species using a variety of techniques, and potentially restoring grazing grassland habitat to modify its vegetation. While earthwork and site preparation of these areas could temporarily degrade recreational access and quality by introducing noise and odors into the setting, restoration of grassland communities would increase opportunities for upland hunting, wildlife viewing, botanical viewing, and nature photography due to improvements to wildlife and native plant habitats. Restoration of natural areas under this measure would also increase opportunities for upland hiking, walking, picnicking, and sightseeing.

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

Under CM10, 1,200 acres of nontidal freshwater marsh within CZ 2 and CZ 4 and/or CZ 5 would be restored by year 40. CM10 actions would be phased with 400 acres restored by year 10, 600 by year 20 and the cumulative total of 1,200 acres restored by year 40. Restoration of nontidal freshwater emergent wetland and nontidal perennial aquatic natural communities would provide habitat for giant garter snake, western pond turtle, and other native wildlife and plant species characteristic of this habitat. Restored nontidal wetlands would also be designed and managed to support other native wildlife functions including waterfowl foraging, resting, and brood habitat and shorebird foraging and roosting habitat. Restored habitat would include preserved transitional upland habitat to provide upland habitat for giant garter snakes and western pond turtles and nesting habitat for waterfowl. While construction activities and access restrictions associated with this measure may reduce some upland recreational opportunities and create temporary construction effects from activities producing noise or odors, improvements in wildlife and native plant habitats associated with the measure would increase the quality of upland hunting, wildlife viewing, botanical viewing, and nature photography in and adjacent to restored areas.

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

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

6 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 7 conservation measures would temporarily limit opportunities for upland recreational activities
 8 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 9 construction activities would also temporarily compromise the quality of upland recreation in and
 10 around these areas. Additionally, it is possible that current areas of upland recreation would be
 11 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 12 activities. These impacts on upland recreational opportunities would be considered less than
 13 significant because the BDCP would include environmental commitments that would require BDCP
 14 proponents to consult with CDFW to expand wildlife viewing, and hunting opportunities at the Yolo
 15 Wildlife Area and other locations, as described in Recommendation DP R14 of the Delta Plan
 16 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). Near-term implementation would also
 17 restore or enhance new potential sites for upland recreation and the measure would improve the
 18 quality of existing recreational opportunities adjacent to areas modified by the conservation
 19 measures. These measures would not be anticipated to result in a substantial long-term disruption
 20 of upland recreational activities; thus, this impact is considered less than significant.

21 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other 22 Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations 23 Addressing Recreation Resources**

24 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 25 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 26 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 27 provide guidance for recreation resource issues as overviewed in Section 15.2, *Regulatory Setting*.
 28 This overview of plan and policy compatibility evaluates whether Alternative 1A is compatible or
 29 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 30 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 31 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 32 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 33 physical effects of Alternative 1A on recreation resources is addressed in Impacts REC-1 through
 34 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.3.3.2, and Chapter 17, *Aesthetics*
 35 and *Visual Resources*, Section 17.3.3.2. The following is a summary of compatibility evaluations
 36 related to recreation resources for plans and policies relevant to the BDCP.

- 37 • *The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta
 38 and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General
 39 Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National
 40 Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation
 41 Area Resource Management Plan and General Development Plan, and San Luis Reservoir State
 42 Recreation Area General Development Plan* all have policies or goals to protect the recreation
 43 resources and promote a range of opportunities to visitors to these areas. Construction and
 44 operation of the proposed water conveyance facilities and other conservation measures would
 45 not affect recreation opportunities in these areas and would be compatible with these plans.

- 1 ● The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
2 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
3 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
4 all focused on the protection of resources, including recreation resources, within the Delta.
5 These plans have policies, objectives, or goals intended to protect and enhance existing
6 recreation and encourage development of new local and regional opportunities. Constructing
7 the proposed conveyance facilities would result in long term disruption to existing established
8 recreation areas in the study area and change the nature of the recreation setting. The proposed
9 water conveyance elements could be considered incompatible with measures to protect existing
10 recreation opportunities in the study area.
- 11 ● The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
12 and the Great California Delta Trail *Blueprint Report for Contra Costa and Solano Counties* all
13 promote development of a regional trail system providing a continuous regional recreational
14 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
15 regional and local efforts to design proposed restoration areas to be compatible with and
16 complement the goals of creating a regional trail network and where feasible to adapt
17 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 18 ● Regional plans and those geared toward the management of specific areas, including the *Stone*
19 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
20 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*
21 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
22 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
23 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
24 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
25 may create disruptions related to facility and restoration improvements. Proposed restoration
26 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
27 compatible with and complement the current management direction for these areas and would
28 be required to adapt restoration proposals to meet current policy established for managing
29 these areas.
- 30 ● The BDCP would be constructed and operate in compliance with regulations related to boat
31 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
32 Department of Parks and Recreation's Division of Boating and Waterways), and federal
33 (including the U.S. Coast Guard) boating law enforcement. The alternative would be compatible
34 with California State Land Commission regulations related to recreational piers or marinas.
- 35 ● EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
36 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
37 alternative.
- 38 ● Alternative 1A would result in the construction of permanent and temporary features associated
39 with the proposed water conveyance facility across land governed by the general plans of
40 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
41 policies related to the protection of recreation resources and encourage the development of new
42 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
43 recognize the Delta as an area of international importance and as a major recreational resource
44 of these counties. Construction activities that disrupt and degrade recreation opportunities in
45 the study area would be incompatible with policies designed to protect recreation resources,

1 including those intended to protect open space and natural areas and those that discourage
 2 development of public facilities and infrastructure unless it is related to agriculture, natural
 3 resources and open space, and has recreational value.

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

8 **15.3.3.3 Alternative 1B—Dual Conveyance with East Alignment and** 9 **Intakes 1–5 (15,000 cfs; Operational Scenario A)**

10 Table 15-13 lists the recreation sites and areas that may be affected by Alternative 1B (Mapbook
 11 Figure M15-2). Specific effects on recreation areas or sites are discussed below.

12 **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)
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)

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
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

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:** Alternative 1B conveyance facilities include elements that would be permanently
 6 located in three existing recreation areas: Stone Lakes NWR, Cosumnes River Preserve, and White
 7 Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure M15-2).

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

15 In the Cosumnes River Preserve, a portion of the tunnel siphon would be located beneath an area
 16 within the preserve (Table 15-13 and Mapbook Figure M15-2). All work would be underground and
 17 would not permanently displace any recreation facilities or lands within the preserve. No
 18 recreational opportunities would be permanently displaced, disrupted, or relocated by placement of
 19 the tunnel at this location.

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

4 Alternative 1B would not result in the permanent location of water conveyance facilities that would
 5 cause adverse effects due to permanent displacement of an existing well-established public use or
 6 private commercial recreation facility available for public access. Effects on recreation related to
 7 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
 8 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.3, and Chapter 23, *Noise*, Section 23.3.3.3,
 9 for additional discussion of these topics.

10 **CEQA Conclusion:** Alternative 1B conveyance facilities include elements that would be permanently
 11 located in three existing recreation areas: Stone Lakes NWR, Cosumnes River Preserve, and White
 12 Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure M15-2). However, placement of
 13 these structures would not result in permanent displacement of any well-established public use or
 14 private commercial facility available for public access. Therefore, impacts are considered less than
 15 significant. No mitigation is required.

16 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences 17 as a Result of Constructing the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** A total of 18 recreation sites are within the construction impact area under
 19 Alternative 1B (Table 15-13 and Mapbook Figure M15-2). Adverse effects on recreation may include
 20 restricted access to a recreation facility or use of an area; degraded recreation opportunities and
 21 experiences as a result of construction noise or changes to the visual setting; or other conflict with
 22 construction that could adversely affect the ability of visitors to participate in recreational activities
 23 at the site or area. If these effects were to occur, visitors may choose to visit different recreation
 24 areas or marinas during the construction period. Specific effects that could occur at each of the sites
 25 are discussed below. Also see Chapters 12, *Terrestrial and Biological Resources*, 17, *Socioeconomics*,
 26 19, *Transportation*, and 23, *Noise* for additional detail related to waterfowl/wildlife,
 27 aesthetics/visual resources, transportation, and noise, respectively.

28 **Clarksburg Marina**

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

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

39 Potential effects on recreation at the Clarksburg Boat Launch (fishing access) would be similar to
 40 those described under Alternative 1A, Impact REC-2. Recreation use at the boat launch/fishing
 41 access site and up or downstream of Intake 3 would be affected by noise and visual setting
 42 disruptions associated with construction of the intakes and related facilities. Construction would

1 last about 4 years with construction of the intake and related facilities primarily ongoing Monday
2 through Friday for up to 24 hours each day. Dewatering in the vicinity of Intake 3 also would be
3 ongoing 7 days a week for 24 hours per day throughout excavation construction to provide a dry
4 workspace.

5 **Stone Lakes National Wildlife Refuge**

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

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

16 Because of the proximity of the alignment and associated construction work areas and borrow/spoil
17 areas, there could be effects on wildlife viewing and environmental education opportunities.
18 Construction would take place primarily Monday through Friday for up to 24 hours per day and last
19 up to 7 years in this area. If construction activities were to make these two units of the NWR less
20 hospitable for wildlife, then there would be temporary effects on wildlife viewing and some
21 environmental education opportunities within the NWR (those that depend on the presence of
22 wildlife). Hiking, interpretation, and some environmental education opportunities would still be
23 feasible within the NWR; however, the recreation experience of refuge visitors may be affected by
24 construction noise, resulting in reduced opportunities for wildlife viewing and visual disruptions. As
25 discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3, mitigation would be
26 available to address effects on nesting birds and waterfowl populations and greater sandhill crane
27 near construction areas. In addition, over the longer term of the action alternatives, implementation
28 of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
29 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
30 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
31 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
32 benefit sandhill crane and other species. Implementation of CM11 would provide beneficial effects
33 on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands
34 in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed
35 wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*).
36 The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4
37 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat
38 launch facility within the footprint of the North Delta diversion facilities. Permitted activities will
39 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
40 hunting, fishing, and boating, depending on the location.

41 **Cosumnes River Preserve**

42 The Cosumnes River Preserve provides opportunities for fishing, hiking, paddling, wildlife viewing,
43 and environmental education. A few specially designated areas have also been set aside for limited
44 hunting. Fishing is allowed only from a boat, in the river. Although the construction footprint

1 traverses a portion of the Cosumnes River Preserve (McCormack-Williamson tract) west of
2 Interstate 5, this portion of the alignment includes a tunnel component with no surface disturbance.
3 A canal component of the alignment and associated construction would be immediately north of this
4 portion of the Cosumnes River Preserve and Snodgrass Slough. Because of the proximity of the
5 construction activities construction noise could have an effect on wildlife viewing and
6 environmental education opportunities. The recreation experience of refuge visitors may also be
7 adversely affected by construction activities because of noise disturbance. As discussed in Chapter
8 12, *Terrestrial Biological Resources*, Section 12.3.3.3, mitigation would be available to address effects
9 on nesting birds and waterfowl populations and greater sandhill crane near construction areas. In
10 addition, over the longer term of the action alternatives, implementation of CM3 and CM11 will
11 result in protection and enhancement of at least 8,100 acres of managed wetlands (see BDCP
12 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
13 suitable habitat conditions for covered species and native biodiversity, including benefiting
14 migratory waterfowl. Under CM3, the protection of cultivated lands will also benefit sandhill crane
15 and other species. As described above in the *Stone Lakes National Wildlife Refuge* section,
16 implementation of CM11 would provide beneficial effects on recreation opportunities by allowing
17 recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted
18 activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling,
19 equestrian use, hunting, fishing, and boating.

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

21 Effects on White Slough Wildlife Area would be similar to the adverse effects previously described
22 for the Alternative 1B, Impact REC-1, above. Only the Pond 6 portion of the White Slough Wildlife
23 Area is included within the construction impact area. Access to Pond 6 would be maintained from
24 Woodbridge Road or a detour. Fishing and hiking opportunities could be affected by canal, siphon,
25 and bridge construction from noise and visual setting disturbances. Construction of the canal and
26 siphon would last up to 5 years; use of the potential borrow and/or spoil area could last from 4 to 6
27 years; bridge construction and related road work would last up to 1 year. Construction would take
28 place primarily Monday through Friday for up to 24 hours per day. During this time wildlife viewing
29 and hunting opportunities at this pond could be adversely affected. Other ponds within the White
30 Slough Wildlife Area would be outside of the noise and visual impact areas and would remain
31 available for recreation. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3,
32 mitigation would be available to address effects on nesting birds and waterfowl populations and
33 greater sandhill crane near construction areas. In addition, over the longer term of the action
34 alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least
35 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal
36 MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and
37 native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
38 cultivated lands will also benefit sandhill crane and other species.

39 **Woodbridge Ecological Reserve**

40 Both the North and the South Units of the Woodbridge Ecological Reserve (also known as the
41 Isenberg Sandhill Crane Reserve) are within the construction impact area. The North Unit, north of
42 Woodbridge Road, is east of the canal alignment and could be affected primarily from construction
43 noise associated with the siphon and siphon work area at Hog Slough, the canal, the West
44 Woodbridge Road bridge and bridge work area, temporary transmission line, and potential borrow
45 and/or spoil area south of the preserve on the east side of the canal. Visitors can access this unit

only on a docent-led sandhill crane tour between October and February. Construction noise could affect wildlife viewing opportunities in this unit. Construction of the West Woodbridge Road bridge would be short-term, lasting up to 1 year. Other construction activities would last from 4 to 6 years. Construction would take place year-round, primarily Monday through Friday, for up to 24 hours per day. In areas where dewatering is needed to provide a dry workspace, it would be ongoing 7 days a week for 24 hours per day. Construction during sandhill crane viewing season (October through February) could adversely affect wildlife viewing opportunities at the site (to the point of prohibiting use). The area south of Woodbridge Road, called the South Unit, would be immediately west of a temporary potential borrow and/or spoil area. The South Unit is open to the public year-round and contains interpretive panels and a view platform for watching sandhill cranes. Similar to the White Slough Wildlife Area, opportunities for wildlife viewing would likely be unavailable in the South Unit because construction noise and activities close to the reserve would likely make the area temporarily less hospitable for wildlife, limiting wildlife viewing activities in areas near construction.

As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3, implementation of AMMs would minimize the potential effects on greater sandhill crane. Mitigation measure BIO-75 would be available to address effects on sandhill crane habitat and the related effects on recreational wildlife viewing opportunities. In addition, over the longer term of the action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also benefit sandhill crane and other species. As described above in the *Stone Lakes National Wildlife Refuge* section, implementation of CM11 would provide beneficial effects on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

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

32 *The Reserve at Spanos Park Golf Course*

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

41 *Paradise Point Marina*

The Paradise Point Marina is located along Bishop Cut and Disappointment Slough east of the canal alignment, siphon at Disappointment Slough, and siphon work areas. Vehicular access to the marina would be maintained using Rio Blanco Road or a detour. On-water access to the marina would also

1 be maintained, and use of the marina's boating facilities would not be affected by canal and
2 temporary siphon work area activities. Boating and picnicking opportunities would still be feasible
3 at the marina during canal construction; however, the recreation experience of marina users may be
4 adversely affected by construction activities. Construction of the canal, siphon, and use of the related
5 work areas would last up to 5 years. Construction would take place primarily Monday through
6 Friday for up to 24 hours each day. Recreation at the marina would be adversely affected by noise
7 and visual setting disturbances.

8 **Weber Point Yacht Club**

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

20 **Windmill Cove Resort & Marina**

21 Windmill Cove Resort & Marina, located just off of the San Joaquin River south of Fourteenmile
22 Slough, includes 25 berths and a launch ramp and provides camping and picnicking opportunities
23 (*Appendix 15A, Privately Owned Recreation Facilities, by County*). The marina is east of a temporary
24 borrow/spoil area associated with the tunnel siphon that would be installed under the San Joaquin
25 River and a related work area. Vehicular access to the marina would be maintained using Windmill
26 Cove Road or a detour. There may be additional truck traffic on Windmill Cove Road during
27 construction. On-water access to the marina would also be maintained, and use of the marina's
28 boating facilities would not be affected by land-based construction activities. Construction and use
29 of the potential borrow and/or spoils area in the vicinity of the San Joaquin River tunnel
30 construction would last up to 4 years with construction ongoing primarily Monday through Friday
31 for up to 24 hours each day. Boating, picnicking, and camping opportunities would still be available
32 at the marina during construction at the adjacent borrow/spoil area; however, the recreation
33 experience of marina users may be adversely affected by construction activities.

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

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

40 A number of boating facilities are located at Buckley Cove: the Marina West Yacht Club, Buckley
41 Cove Boat Launch, River Point Landing Marina Resort, Ladd's Marina, the Stockton Sailing Club, and
42 Buckley Cove Park are on or near the San Joaquin River (Deep Water Ship Channel) and fall within
43 the construction impact area associated with a large borrow and/or spoils area east and across the

1 channel from these sites. The River Point Landing Marina provides 160 berths, a ramp, and picnic
2 facilities. Adjacent to the marina is the Stockton Sailing Club, which provides 288 berths (Appendix
3 15A, *Privately Owned Recreation Facilities, by County*). Ladd's Marina provides 146 berths. Vehicular
4 access to these sites would be maintained using Buckley Cove Way. On-water access to the sites
5 would also be maintained, and use of the boating facilities at all sites would not be adversely
6 affected by construction use of the borrow and/or spoil area. Boating and picnicking opportunities
7 would still be feasible at the marina and park, and boating would still be feasible at the sailing club
8 during construction at the temporary work area; however, the recreation experience of marina
9 users may be adversely affected by construction activities. Construction use of the borrow and/or
10 spoil area would be ongoing for up to 4 years and would take place primarily Monday through
11 Friday for up to 24 hours per day.

12 ***Clifton Court Forebay***

13 Clifton Court Forebay recreation is described under Alternative 1A, Impact REC-2. As described for
14 Alternative 1A, under Alternative 1B, access to the forebay would be maintained using Clifton Court
15 Road or a detour. Construction of the Byron Tract forebay, control structures, and use of related
16 potential borrow and/or spoils area would take up to 4 years (long term); installation of
17 transmission lines would take up to 2 years (short term). Construction would primarily occur
18 Monday through Friday for up to 24 hours per day. Construction noise could deter fish and wildlife
19 during and after construction periods, affecting fishing and other recreational opportunities. The
20 opportunities for visitors who use the southern part of the forebay would be affected the most
21 because of its proximity to the proposed construction areas. Construction of the intermediate
22 pumping plant canal approach segments would occur at a later time than the forebay and control
23 structures—up to 3 years later—and would last for up to 1 year. The effects of this construction
24 would be less than the initial forebay construction but could have similar short-term effects on
25 recreation at the southern extent of the Clifton Court Forebay. Construction during waterfowl
26 hunting season would potentially adversely affect recreational hunting to the degree that use is
27 temporarily degraded. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3,
28 mitigation would be available to address the effect on nesting birds and waterfowl populations near
29 construction areas. In addition, over the longer term of the action alternatives, implementation of
30 CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
31 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
32 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
33 including benefiting migratory waterfowl, and benefitting recreationists by increasing wildlife
34 viewing opportunities. 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 Refuge* section,
36 implementation of CM11 would provide beneficial effects on recreation opportunities by allowing
37 recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted
38 activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling,
39 equestrian use, hunting, fishing, and boating.

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

1 ***Other Recreation Opportunities***

2 ***On-Water Recreation***

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

17 ***Campgrounds***

18 Nighttime construction activities would require the use of bright lights that would negatively affect
19 nighttime views of and from the work area. This would affect any overnight camping at the
20 recreation sites and areas discussed above, although day use areas that close at sunset would not be
21 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
22 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
23 23.3.3.3, another nighttime effect on recreation would be construction noise levels that could
24 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
25 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
26 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
27 Measures NOI-1a and NOI-1b would be available to address these effects.

28 ***Summary***

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

35 As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.3, construction could
36 have an adverse effect on waterfowl if they were present in or adjacent to work areas and could
37 result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could
38 indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation
39 measures, environmental commitments, and conservation measures would provide several benefits
40 to waterfowl habitat, which would result in increased recreational opportunities. Mitigation
41 Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*,
42 would be available to address these effects. In addition, in areas near greater sandhill crane habitat,
43 construction-related disturbances (noise and visual), installation of transmission lines, or habitat

1 degradation associated with accidental spills, runoff and sedimentation, and dust could have
2 adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on
3 sandhill crane would be minimized with implementation of *AMM20 Greater Sandhill Crane* and
4 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
5 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
6 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
7 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
8 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
9 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
10 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
11 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
12 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
13 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
14 suitable habitat conditions for covered species and native biodiversity, including benefiting
15 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
16 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
17 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
18 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
19 community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would
20 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
21 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
22 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
23 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

24 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.3, identifies a number of mitigation
25 measures that would be available to address construction-related visual effects on sensitive
26 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
27 visual barriers between construction work areas and sensitive receptors such as recreation areas
28 (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and
29 receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects
30 associated with changes to the landscape/visual setting from construction and the presence of new
31 water conveyance features. These include developing and implementing a spoil/borrow and RTM
32 area management plan (AES-1c), restoring barge loading facility sites once they are
33 decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent
34 feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-
35 1f), and implementing best management practices to implement a project landscaping plan (AES-
36 1g). DWR would also make a commitment to enhance the visual character of the area by creating
37 new wildlife viewing sites and enhancing interest in the construction site by constructing viewing
38 areas and displaying information about the project, which may attract people who may use the
39 recreation facilities to the construction site as part of the visit.

40 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
41 proponents will work with the California Department of Parks and Recreation to help insure the
42 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
43 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
44 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
45 helping to fund or construct elements of the American Discovery Trail and the potential conversion
46 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut

1 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
2 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
3 proposal. The BDCP project proponents will also work with DPR to determine if some of the
4 constructed elements of CM1 could incorporate elements of the DPR's proposal.

5 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
6 involve preparation of site-specific construction traffic management plans that would address
7 potential public access routes and provide construction information notification to local residents
8 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
9 of access to affected recreation areas as an environmental commitment. Where construction
10 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
11 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
12 construction sites. These would be designed to be safe, pleasant and would integrate with
13 opportunities to view the construction site as an additional area of interest. These physical facilities
14 would be combined with public information, including sidewalk wayfinding information that would
15 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
16 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
17 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
18 congested roadway segments.

19 Chapter 23, *Noise*, Section 23.3.3.3, discusses that construction noise effects could be addressed
20 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
21 implementation of a complaint/response tracking program (NOI-1b), and an environmental
22 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
23 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
24 to the extent possible so as to avoid effects on passive recreation activities such as walking,
25 picnicking, and viewing the aesthetic amenities of the area.

26 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
27 2 would ensure continued access to existing recreation experiences. The Delta offers many
28 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
29 all of which would continue to be available for recreationists. However, due to the length of time that
30 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
31 related to temporary disruption of existing recreational activities at facilities within the impact area
32 would be adverse.

33 **CEQA Conclusion:** Construction of Alternative 1B intakes and related water conveyance facilities
34 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
35 years) impacts on well-established recreational opportunities and experiences in the study area
36 because of access, noise, and visual setting disruptions that could result in loss of public use. These
37 impacts include reduced wildlife viewing opportunities at the Woodbridge Ecological Reserve.
38 These impacts would be temporary, but may occur year-round and would occur over the long-term.
39 Mitigation measures, environmental commitments, and AMMs would reduce these construction-
40 related impacts by implementing measures to protect or compensate for effects on wildlife habitat
41 and species; minimize the extent of changes to the visual setting, including nighttime light sources;
42 manage construction-related traffic; and implement noise reduction and complaint tracking
43 measures. However, the level of impact would not be reduced to less than significant because even
44 though mitigation measures and environmental commitments would reduce the impacts on wildlife,
45 visual setting, transportation, and noise conditions that could detract from the recreation

experience. Due to the dispersed effects on the recreation experience across the Delta, it is not certain the mitigation would reduce the level of these impacts to less than significant in all instances such that there would be no reduction of recreational opportunities or experiences over the entire study area. Therefore, these impacts are considered significant and unavoidable. However, the impacts related to construction of the intakes would be less than significant.

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

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

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

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

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.

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

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

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

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

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

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

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

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

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

Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*, 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-4a: Limit Construction to Daylight Hours within 0.5 Mile of**
6 **Residents**

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

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 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:** Changes to boat passage and navigation, including obstructions to boat passage and
7 boat traffic delays, would occur during the construction of Alternative 1B. Temporary channel
8 closures may also be required that could impede boat movement. Construction of intakes and
9 siphons would include the installation of cofferdams in the waterways and the use of barges, barge-
10 mounted cranes, or other large waterborne equipment. Piers or temporary barge unloading facilities
11 could also be located at the intake sites, spoil storage areas, or tunnel vent and shaft work areas.
12 Construction equipment, such as barges and dredges, could obstruct boat passage or cause
13 congestion in high traffic areas, as could the placement of cofferdams or barge unloading facilities.
14 Channel obstructions and potential congestion may pose navigational and safety hazards to boaters.
15 Reduced boat speed limits could cause further boat traffic delays in the vicinity of the construction
16 sites.

17 **Intakes**

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

21 Direct adverse effects on boat passage and navigation on the Sacramento River would result from
22 construction of the intakes. Effects would include obstruction and delays to boat passage and
23 navigation as a result of channel obstructions to compliance with temporary speed zones. However,
24 boat passage volume along the corridor of the Sacramento River where intakes are proposed is low.
25 Water-based recreational activities such as water skiing, wakeboarding, or tubing are also low. In
26 addition, there would be sufficient width in the channel to allow boat passage, with minor delays
27 related to construction speed zones. Site-specific safety features, including determination of the
28 speed-restriction zone would be developed under the Mitigation Measure TRANS-1a that involves
29 the BDCP proponents developing and implementing site-specific construction traffic management
30 plans, including waterway navigation elements. Within the speed-restricted zones around the intake
31 areas, high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be
32 eliminated. Mitigation Measure TRANS-1a also involves providing notification of construction
33 activities in waterways to ensure information about construction site location(s), construction
34 schedules, and identification of no-wake zone and/or detours is posted at Delta marinas and public
35 launch ramps. Although there is sufficient width in the channel to allow boat passage, boaters could
36 experience minor delays related to construction speed zones. However, this could still result in
37 effects on boat navigation and related boating recreation (waterskiing, wakeboarding, tubing),
38 which would be considered adverse because, although temporary, the effects would be long-term,
39 lasting more than 2 years.

1 ***Temporary Barge Unloading Facilities***

2 Alternative 1B includes a temporary barge unloading facility to be built on Fourteenmile Slough, at
3 the junction of the slough and the San Joaquin River (Mapbook Figure M15-2). The facility would be
4 used to transfer pipeline construction equipment and materials to and from construction sites and
5 would be removed after construction was completed. Construction of the facilities may require
6 partial channel closures and use of equipment within the waterways. The facility would occupy
7 about 1,000 feet of the west bank of the slough. The slough is about 150 feet wide at this location.
8 Therefore, the barge facility and barge operations would occupy a substantial portion of the slough,
9 constricting or preventing boat passage. However, the slough splits around an in-channel island at
10 this location. The similarly sized channel on the east side of the in-channel island provides an
11 alternate route for boaters to use in moving between the San Joaquin River and Fourteenmile
12 Slough. The alternate route around the in-channel island would add less than 2,000 feet to the travel
13 distance. Therefore, boaters would have the ability to avoid the barge facility, and effects on boat
14 passage would be minor and temporary, lasting approximately 5 years. Construction of temporary
15 barge unloading facilities would result in adverse effects to boat passage and navigation including
16 the creation of obstructions to boat passage and associated boat traffic delays, temporary partial
17 channel closures that could impede boat movement and eliminate recreational opportunities. In
18 waterways where water skiing, wakeboarding, and tubing occur, recreation opportunities in the
19 vicinity of the barge unloading facilities would be eliminated during construction. These effects
20 would be reduced with the implementation of Mitigation Measure TRANS-1a that involves the BDCP
21 proponents developing and implementing site-specific construction traffic management plans,
22 including waterway navigation elements and providing notification of construction activities in
23 waterways to ensure information about construction site location(s), construction schedules, and
24 identification of no-wake zone and/or detours is posted at Delta marinas and public launch ramps.

25 ***Siphons***

26 Construction of the seven siphons associated with Alternative 1B would result in temporary
27 obstruction of boat passage and may also cause boat traffic delays or navigation hazards to boaters.
28 The siphons would cross seven navigable waterways.

- 29 • Stone Lakes Drain
30 • Beaver Slough
31 • Hog Slough
32 • Sycamore Slough
33 • White Slough
34 • Middle River
35 • Disappointment Slough

36 Culvert siphons would be constructed using cofferdams and open cut-and-cover construction
37 methods with conventional cast-in-place concrete structures. For most siphons, a bypass channel
38 would be constructed to redirect the water away from the work area. For wider sloughs or where
39 other restrictions exist, culvert siphons could be constructed in two or three phases, each phase
40 lasting up to 1 year, depending on construction permit conditions. In each phase, a temporary
41 cofferdam surrounding the work area would be installed that would occupy as much as one-half the
42 width of the waterway.

1 Four of the seven navigable waterways to be crossed by a siphon (Stone Lakes Drain, Beaver Slough,
2 Hog Slough, and Sycamore Slough) are on narrow, dead-end sloughs and within approximately 1
3 mile of the easternmost limit to navigation. The siphon under White Slough would be about 3 miles
4 from the nearest marina facility, and the location does not appear to be a boat traffic thoroughfare
5 given its relatively remote location in relation to waterways.

6 Boat traffic volume in the vicinity of these five siphons is expected to be low, and most waterway use
7 is likely limited to anglers. The construction of siphons would temporarily impede boat movement
8 on these waterways; however, because the waterways provide access to dead-end sloughs or do not
9 support large boat traffic volumes, the temporary impediment on these waterways would not
10 substantially alter boat movement in the Delta.

11 Boat traffic volume on Middle River in the vicinity of the siphon crossing has been observed to be
12 low because of the narrow and shallow character of the waterway channel (California Department of
13 Water Resources and Bureau of Reclamation 2005). Boat traffic volume in the vicinity of the
14 Disappointment Slough siphon may be high at times because of the slough's proximity to Paradise
15 Point Marina, which provides more than 200 boat berths and a boat ramp. However, boaters may
16 also choose to bypass the siphon construction site by using other waterways in the vicinity, such as
17 Bishop Cut and Fourteenmile Slough. The construction of siphons would temporarily obstruct boat
18 movement on these waterways; however, because the waterways do not support large boat traffic
19 volumes and alternative navigational routes are available, the temporary impediment on these
20 waterways would not substantially alter boat movement in the Delta.

21 Although boats would not be able to use the portion of the waterway where construction of the
22 siphons was occurring, the use of each of these waterways for recreational navigation would be
23 allowed to continue during construction.

24 Changes to boat passage and navigation on the Sacramento River in the vicinity of the intakes, barge
25 unloading facilities and the siphons would result in adverse direct and indirect effects on
26 recreational navigation in the affected waterways. Direct effects would result from the creation of
27 obstructions to boat passage and associated boat traffic delays and temporary channel closures that
28 could impede boat movement. Changes to boat passage would also result in effects on recreational
29 navigation and water-based recreation activities such as wakeboarding, waterskiing, and tubing.
30 Although there may be short delays in boat passage, access to the affected waterways would be
31 maintained. The sloughs where siphons would cross do not support large boat traffic volumes and
32 construction activities would not result in substantial adverse effects. However, because boat
33 passage and navigation would be disrupted, effects are considered adverse. Mitigation Measure
34 TRANS-1a would be available to reduce effects to marine navigation by development and
35 implementation of site-specific construction traffic management plans, including specific measures
36 related to management of barges and stipulations to notify the commercial and leisure boating
37 community of proposed barge operations in the waterways. Additionally, BDCP proponents would
38 contribute funds for the construction of new recreation opportunities as well as for the protection of
39 existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
40 proponents would also assist in funding the expansion of state recreation areas in the Delta as
41 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
42 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
43 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
44 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
45 commencement of construction of the BDCP. This commitment serves to compensate for the loss of

1 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, AMMs, and CMs*.

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, AMMs, and CMs*.

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). Nonetheless, effects on waterskiing, wakeboarding or tubing opportunities would last
25 approximately 5 years (long-term) and would be considered adverse because of the reduced
26 recreation opportunity and experiences expected to exist near construction activity.

27 **CEQA Conclusion:** Alternative 1B would result in significant impacts on boat passage and navigation
28 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
29 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
30 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
31 would also result in temporary impacts on wakeboarding, waterskiing, and tubing because of
32 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
33 marine navigation by development and implementation of site-specific construction traffic
34 management plans, including specific measures related to management of barges and stipulations to
35 notify the commercial and leisure boating communities of proposed barge operations in the
36 waterways. While the environmental commitments would reduce impacts on water-based
37 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
38 opportunities for those eliminated during construction, these impacts would be long-term and
39 therefore considered significant and unavoidable.

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

42 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
43 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 11.3.4.3, 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, AMMs, and CMs*). RTM would be removed from
13 RTM storage areas (which represent a substantial portion of the permanent impact areas) and
14 reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat
15 restoration projects, or other beneficial means of reuse identified for the material. Mitigation
16 Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport
17 fish populations from impact pile driving. Although fish populations likely would not be affected to
18 the degree that fishing opportunities would be substantially reduced, construction conditions would
19 introduce noise and 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. Siphons
23 are proposed across Beaver, Sycamore, and Hog Sloughs, which are heavily used fishing areas. Fish
24 and anglers may avoid this area because of construction activities. This may cause greater use of
25 alternate fishing areas and result in a degraded fishing experience for anglers. However, Mitigation
26 Measures NOI-1a and NOI-1b would address construction noise effects. Additionally, specific noise-
27 generating activities near recreation areas would be scheduled to the extent possible so as to avoid
28 effects on passive recreation activities on-shore fishing. Mitigation measures would also be available
29 to address construction-related visual effects on sensitive receptors from vegetation removal for
30 transmission lines and access routes (AES-1a), provision of visual barriers between construction
31 work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations
32 away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures
33 to address longer term visual effects associated with changes to the landscape/visual setting from
34 construction and the presence of new water conveyance features. These include developing and
35 implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading
36 facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all
37 structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon
38 removal of facilities (AES-1f), and implementing best management practices to implement a project
39 landscaping plan (AES-1g). Overall, construction of the proposed water conveyance facilities would
40 not degrade the fishing experience for boat and on-shore fishing locations. Additionally, anglers
41 could move to other locations along the Sacramento River and throughout the Delta region and REC-
42 2 would provide anglers with alternative bank fishing access sites further removed from areas
43 affected by construction. Therefore, construction of the proposed water conveyance facilities would
44 not result in a long-term reduction of fishing opportunities. 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, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
8 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
9 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
10 such 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: Monitor Underwater Noise, and if Necessary, Use an
20 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
21 Underwater Noise**

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
25 Construction**

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

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

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

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

33 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
34 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 1B 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 11.3.4.3, 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 1B would be considered less than significant because any impacts to fish
35 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
36 would 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:** Alternative 1B would have the same operational scenario as Alternative 1A, and as
5 shown in Table 15-12a and Table 15-12b, Alternative 1B would result in the same changes as
6 discussed under Alternative 1A. Also see Chapter 3, *Description of Alternatives*, Section 3.6.4.2, for
7 detailed information on the operational scenarios, and Appendix 5A, *BDCP/California WaterFix
8 FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM II model and assumptions.

9 **Existing Conditions (CEQA Baseline) Compared to Alternative 1B (2060)**

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

22 **No Action Alternative (2060) Compared to Alternative 1B (LLT-2060)**

23 The comparison of Alternative 1B (2060) to the No Action Alternative (2060) condition most closely
24 represents changes in reservoir elevations that may occur as a result of operation of the alternative
25 because both conditions include sea level rise and climate change (see Appendix 5A,
26 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). Operation of Alternative 1B
27 would result in changes in the frequency with which the end of September reservoir levels at Trinity
28 Lake, Shasta Lake, Lake Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall
29 below levels identified as important water-dependent recreation thresholds (Table 15-12a and
30 Table 15-12b). In all but one instance (San Luis Reservoir), the CALSIM II modeling results indicate
31 that reservoir levels under Alternative 1B operations would fall below the individual reservoir
32 thresholds less frequently than under No Action Alternative (2060) conditions. These changes in
33 reservoir elevations would not be adverse at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake,
34 and New Melones Lake, and would be considered beneficial effects of Alternative 1B operations.
35 Operation of Alternative 1B would not adversely affect water-dependent or water-enhanced
36 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
37 under operation of Alternative 1B because there would be fewer years in which end-of-September
38 reservoir levels would fall below the recreation thresholds thus indicating better boating
39 opportunities, when compared to No Action Alternative (2060) conditions.

40 The modeling for San Luis Reservoir indicates there could be up to 6 additional years which the
41 reservoir level would fall below the reservoir boating threshold at the end of September for the
42 Dinosaur Point boat launch. This is a less than 10% change and would not result in a substantial
43 reduction in recreation opportunities or experiences. In addition, at the Basalt boat launch, which is
44 accessible to elevation 340 feet, operations under Alternative 1B would result in only one additional

1 year for which reservoir elevations would fall below the recreation threshold relative to the No
2 Action Alternative (2060) condition. This is also a less than 10% change and would not be
3 considered a substantial reduction in recreation opportunities. Shoreline fishing would still be
4 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 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
8 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
9 Alternative 1B (2060) operations would fall below the individual reservoir thresholds less
10 frequently than under No Action Alternative (2060). These changes in reservoir and lake elevations
11 would result in a less-than-significant impact on recreation opportunities and experiences at Trinity
12 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be
13 fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No
14 Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on
15 recreation opportunities and experiences. Operation of Alternative 1B would not substantially affect
16 water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the
17 modeling indicates that reservoir levels could exceed the recreation threshold up to 6 additional
18 years under Alternative 1B operations relative to the No Action Alternative (2060) condition. This is
19 a less than 10% change and is not considered a substantial reduction in recreation opportunities or
20 experiences at this reservoir. Overall, this impact would be less than significant, and these
21 conditions represent improved recreation conditions under operation of Alternative 1B because
22 there would be fewer years in which end-of-September reservoir levels would fall below the
23 recreation thresholds thus indicating better boating opportunities, when compared to No Action
24 Alternative (2060) conditions. No mitigation is required.

25 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a 26 Result of Maintenance of the Proposed Water Conveyance Facilities**

27 **NEPA Effects:** Effects of maintenance activities under Alternative 1B would be the same as described
28 for Alternative 1A, Impact REC-7, and would result in periodic temporary but not substantial
29 adverse effects on boat passage and water-based recreational activities. Any effects would be short-
30 term (2 years or less) and intermittent. Other facility maintenance activities would occur on land
31 and would not affect boat passage and navigation. Implementation of the environmental
32 commitment to provide notification of maintenance activities in waterways (Appendix 3B,
33 *Environmental Commitments, AMMs, and CMs*) would reduce these effects. Effects on boat passage
34 and navigation resulting from the maintenance of intake facilities would be short-term and
35 intermittent and would not be considered adverse.

36 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
37 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
38 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
39 environmental commitment to provide notification of maintenance activities in waterways
40 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would further minimize these effects.
41 Intake maintenance impacts on recreation would be considered less-than-significant because
42 impacts, if any, on public access or public use of established recreation facilities would last for 2
43 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:** Maintenance activities for the proposed water conveyance facilities would not affect
 4 recreation opportunities because maintenance would take place within the individual facility right-
 5 of-way. The right-of-way under Alternative 1B includes the Stone Lakes NWR, White Slough Wildlife
 6 Area, and Cosumnes River Preserve; however, the lands in the Stone Lakes NWR and Cosumnes
 7 River Preserve in the right-of-way are not used for recreation, so there would be no effects on
 8 recreation opportunities. In the White Slough Wildlife Area (Pond 6) there would be a bridge right-
 9 of-way; facility maintenance activities would be restricted to roadway maintenance and would not
 10 affect recreation opportunities in the wildlife area. There would be no substantial long-term change
 11 to recreation opportunities as a result of maintenance of conveyance facilities; maintenance
 12 activities would be short-term and intermittent. There would be no effects.

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

16 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 17 **Implementing CM2–CM21**

18 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation measures
 19 as part of Alternative 1B could have effects related to recreational fishing that are similar in nature
 20 to those discussed above for construction, and operation and maintenance of proposed water
 21 conveyance facilities. Although similar in nature, the potential intensity of any effects would likely
 22 be substantially lower because the nature of the activities associated with implementing the
 23 conservation measures would be different—less heavy construction equipment would be required
 24 and the restoration actions would be implemented over a longer time frame than CM1. Potential
 25 effects from implementation of the conservation measures would be dispersed over a larger area
 26 and would generally involve substantially fewer construction and operation effects associated with
 27 built facilities. Additionally, overall, the habitat restoration and enhancement conservation
 28 measures would be expected to result in long-term benefits to aquatic species. Additional discussion
 29 related to the individual conservation measures is provided below.

30 With regards to fishing opportunities, effects of implementing the conservation measures under
 31 Alternative 1B would be similar to those described for Alternative 1A. CM2–CM21 would be
 32 expected to improve fishing opportunities in the study area although some effect on fishing
 33 opportunities could take place during implementation of the conservation measures. Overall,
 34 implementing the proposed conservation measures would be expected to provide beneficial effects
 35 on aquatic habitat and fish abundance thereby improving fishing opportunities.

36 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
 37 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
 38 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
 39 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
 40 implementation stage, these measures could result in impacts on fishing opportunities by
 41 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
 42 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
 43 onshore fishing opportunities. These impacts would be considered less than significant because the
 44 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,

1 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
 2 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
 3 fish species and although these CMs would result in highly localized reductions of predatory species,
 4 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
 5 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.3). Construction
 6 of facilities could have short-term impacts on the noise or visual setting and could indirectly affect
 7 recreational fishing. 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, and dredged material; and a barge operations plan (Appendix 3B). In
 13 addition, mitigation measures and environmental commitments identified to reduce the effects of
 14 constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual
 15 conditions, noise, transportation/access) associated with implementation of the other conservation
 16 measures. Because construction of the conservation measure component facilities would be less
 17 intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation
 18 measures and environmental commitments would reduce the construction-related impacts on
 19 recreational fishing associated with the other conservation measures to a less-than-significant level.
 20 Further, the individual facilities or conservation elements will undergo additional environmental
 21 review and permitting which will include identification of site-specific measures to further protect
 22 resources.

23 Environmental commitments that will reduce construction-related impacts on recreation include a
 24 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
 25 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2
 26 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-
 27 related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
 28 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
 29 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also
 30 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
 31 TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions
 32 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
 33 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.3). Mitigation Measures NOI-1a
 34 and NOI-1b address construction-related noise concerns (see additional discussion under Impact
 35 REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.3). Finally, should construction
 36 of conservation measure facilities require pile-driving, mitigation measures to protect fish and
 37 aquatic species would be implemented to reduce these impacts (see additional discussion under
 38 Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.3).

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

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

44 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
 45 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
20 of Pile Driving and Other Construction-Related Underwater Noise**

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

23 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an
24 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
25 Underwater Noise**

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

28 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
29 as a Result of Implementing CM2–CM21**

30 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
31 conservation measures under Alternative 1B would be similar to those described for Alternative 1A.
32 Implementing the conservation measures could result in an adverse effect on recreation by limiting
33 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
34 conservation measures could provide beneficial effects to recreation by expanding the extent of
35 navigable waterways available to boaters, improving and expanding boat launch facilities, and
36 removing nonnative vegetation that restricts or obstructs navigation.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional discussion under Impact REC-2 and Impact REC-3) 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, AES-4c, and AES-4d; 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 19.3.3.3). 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 23.3.3.3).

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. CM11 would also provide beneficial effects on boating opportunities by improving and expanding boating facilities within the study area. 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 base 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, AMMs, and CMS*; also see additional discussion under Impact REC-2 and Impact REC-3) 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.3). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.3). 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 a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

26 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
27 **Result of Implementing CM2–CM21**

28 **NEPA Effects:** Implementing the conservation measures under Alternative 1B would have similar
29 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.
30 Implementing the conservation measures could result in an adverse effect on recreation
31 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
32 the conservation measures could adversely affect recreation by reducing the extent of upland areas
33 suitable for hiking, nature photography, or other similar activity. However, environmental
34 commitments would reduce these effects to not adverse, and implementation of the measures would
35 restore or enhance new potential sites for upland recreation thereby improving the quality of
36 recreational opportunities. CM17–CM21 involve enforcement, management, or other individual,
37 localized project components that would not affect upland recreation opportunities. CM17 is an

1 enforcement funding mechanism and would not result in a physical change to upland areas;
 2 construction under CM18, CM19 or CM21 would not affect existing upland recreation areas; and
 3 CM20 is an enforcement action primarily located at boat launches and would not affect upland
 4 recreation areas and related opportunities. These measures are not discussed further in this
 5 analysis.

6 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 7 conservation measures would temporarily limit opportunities for upland recreational activities
 8 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 9 construction activities would also temporarily compromise the quality of upland recreation in and
 10 around these areas. Additionally, it is possible that current areas of upland recreation would be
 11 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 12 activities. These impacts on upland recreational opportunities would be considered less than
 13 significant because the BDCP would include environmental commitments that would require BDCP
 14 proponents to work with DFW to provide alternate public hunting opportunities and access and
 15 address additional management costs resulting from increased inundation of the Yolo Wildlife Area
 16 resulting from CM2, as described in Recommendation DP R14 of the Delta Plan (Appendix 3B,
 17 *Environmental Commitments, AMMs, and CMs*). Near-term implementation would also restore or
 18 enhance new potential sites for upland recreation and the measure would improve the quality of
 19 existing recreational opportunities adjacent to areas modified by the conservation measures. These
 20 measures would not be anticipated to result in a substantial long-term disruption of upland
 21 recreational activities; thus, this impact is considered less than significant.

22 Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other 23 Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations 24 Addressing Recreation Resources

25 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 26 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 27 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 28 provide guidance for recreation resource issues as overviewed in Section 15.2, *Regulatory Setting*.
 29 This overview of plan and policy compatibility evaluates whether Alternative 1B is compatible or
 30 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 31 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 32 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 33 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 34 physical effects of Alternative 1B on recreation resources is addressed in Impacts REC-1 through
 35 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.3.3.3, and Chapter 17, *Aesthetics*
 36 and *Visual Resources*, Section 17.3.3.3. The following is a summary of compatibility evaluations
 37 related to recreation resources for plans and policies relevant to the BDCP.

- 38 ● The *New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta*
 39 *and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General*
 40 *Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National*
 41 *Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation*
 42 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
 43 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
 44 resources and promote a range of opportunities to visitors to these areas. Construction and

1 operation of the proposed water conveyance facilities and other conservation measures would
2 not affect recreation opportunities in these areas and would be compatible with these plans.

- 3 • The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
4 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
5 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
6 all focused on the protection of resources, including recreation resources, within the Delta.
7 These plans have policies, objectives, or goals intended to protect and enhance existing
8 recreation and encourage development of new local and regional opportunities. Constructing
9 the proposed conveyance facilities would result in long term disruption to existing established
10 recreation areas in the study area and change the nature of the recreation setting. The proposed
11 water conveyance elements could be considered incompatible with measures to protect existing
12 recreation opportunities in the study area.
- 13 • The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
14 and the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all
15 promote development of a regional trail system providing a continuous regional recreational
16 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
17 regional and local efforts to design proposed restoration areas to be compatible with and
18 complement the goals of creating a regional trail network and where feasible to adapt
19 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 20 • Regional plans and those geared toward the management of specific areas, including the *Stone*
21 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
22 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*
23 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
24 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
25 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
26 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
27 may create disruptions related to facility and restoration improvements. Proposed restoration
28 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
29 compatible with and complement the current management direction for these areas and would
30 be required to adapt restoration proposals to meet current policy established for managing
31 these areas.
- 32 • The BDCP would be constructed and operate in compliance with regulations related to boat
33 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
34 Department of Parks and Recreation's Division of Boating and Waterways), and federal
35 (including the U.S. Coast Guard) boating law enforcement. The alternative would be compatible
36 with California State Land Commission regulations related to recreational piers or marinas.
- 37 • EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
38 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
39 alternative.
- 40 • Alternative 1B would result in the construction of permanent and temporary features associated
41 with the proposed water conveyance facility across land governed by the general plans of
42 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
43 policies related to the protection of recreation resources and encourage the development of new
44 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
45 recognize the Delta as an area of international importance and as a major recreational resource

of these counties. Construction activities that disrupt and degrade recreation opportunities in the study area would be incompatible with policies designed to protect recreation resources, including those intended to protect open space and natural areas and those that discourage development of public facilities and infrastructure unless it is related to agriculture, natural 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 M15-3). 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.

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 M15-3).

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 M15-3). The alternative would not
 23 result in the permanent displacement of any public use or private commercial recreation facility
 24 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 25 required.

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

28 **NEPA Effects:** A total of 11 recreation sites are within the potential impact area under Alternative 1C
 29 (Table 15-14 and Mapbook Figure M15-3). Adverse effects on recreation may include restricted
 30 access to a recreation facility or use of an area; degraded recreation opportunities and experiences
 31 as a result of construction noise or changes to the visual setting; or other conflict with construction
 32 that could adversely affect the ability of visitors to participate in recreational activities at the site or
 33 area. If these effects were to occur, visitors may choose to visit different recreation areas or marinas
 34 during the construction period. Effects specific to each area are described below. Also see Chapter
 35 12, *Terrestrial Biological Resources*, Section 12.3.3.4, Chapter 17, *Aesthetics and Visual Resources*,
 36 Section 17.3.3.4, Chapter 19, *Transportation*, Section 19.3.3.4, and Chapter 23, *Noise*, Section
 37 23.3.3.4, for additional detail related to waterfowl/wildlife, aesthetics/visual resources,
 38 transportation, and noise, respectively.

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

40 The Clarksburg Boat Launch is north of Intake W3 site and within the impact area for the intake and
 41 related facilities, including a large potential borrow and/or spoils area that would be just west of
 42 County Road E9. In addition, a permanent access road would extend from County Road E9, southeast
 43 of the boat launch area, and a temporary transmission line would be installed along the county road,

1 also west of the boat launch area. Construction would last up to 6 years and would primarily occur
2 Monday through Friday for up to 24 hours per day. Dewatering in the vicinity of Intake 3 also would
3 be ongoing 7 days a week for 24 hours per day throughout excavation construction to provide a dry
4 workspace. Construction of the intake would occur in the Sacramento River and on the west side of
5 the river. Access to the Clarksburg Boat Launch site would be maintained using County Road E9 or a
6 detour; access is not expected to be a concern because there is sufficient distance upstream to allow
7 for continued use of the boating access facilities. However, construction noise could adversely affect
8 fishing opportunities by making the site less desirable for fishing. On-water access to the site, as well
9 as use of the boat ramp, would not be affected by activities downstream, upstream, or across the
10 river.

11 Construction activities (transmission line, access road, and borrow/spoils area) would be visible
12 from the site, although most of the Intake W3 site lies south of a bend in the river and may be out of
13 view from onshore. In addition, construction noise from the intake, access road, temporary
14 transmission lines, and borrow/spoils area could negatively affect the recreation setting and thus
15 could affect the recreation experience of visitors participating in picnicking, boat launching, or
16 fishing at the site.

17 ***Arrowhead Harbor Marina***

18 Arrowhead Harbor Marina is located at the junction of Miner and Duck Sloughs. Construction north
19 and east of the marina would include the canal, a siphon under Miner Slough, temporary
20 transmission lines, and a permanent access road. Construction would last up to 4 years and would
21 primarily occur Monday through Friday for up to 24 hours per day. Dewatering would likely be
22 needed along the canal alignment possibly in the vicinity of the marina, and would be ongoing 7 days
23 a week for 24 hours per day throughout excavation construction to provide a dry workspace.
24 Arrowhead Harbor has 76 berths, a ramp, and picnic facilities. Vehicular access to the marina would
25 be maintained using Holland Road or a detour. Traffic levels on Holland Road may increase because
26 of construction. On-water access to the marina would also be maintained, and use of the marina's
27 boating facilities would not be affected by construction. Boating and picnicking opportunities would
28 still be available at the marina during construction. Construction in Miner Slough may not be fully
29 visible from the marina, although the boating experience for visitors to the marina would be affected
30 by construction that would occur immediately east of the marina and along the slough. Construction
31 near this marina would be temporary, but would result in long-term adverse effects on the
32 recreation setting and recreation experiences at the marina and areas up and downstream Miner
33 and Duck Sloughs.

34 ***Miner Slough Wildlife Area***

35 The Miner Slough Wildlife Area provides bird watching, wildlife viewing, fishing and waterfowl
36 hunting opportunities. Construction activities at a RTM area across the slough and east of the site
37 would generate elevated noise and visual setting disruptions for visitors to this area (which is only
38 accessible by boat). Construction would last up to 6 years and would primarily occur Monday
39 through Friday for up to 24 hours per day. Construction noise and activities could adversely affect
40 hunting and wildlife viewing opportunities. The construction noise could result in reduced
41 opportunities for wildlife viewing and visual disruptions, degrading the recreation experience of
42 visitors' at the wildlife area and on the water in the immediate vicinity of construction. As discussed
43 in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.4, mitigation would be available to
44 address effects on nesting birds and waterfowl populations. In addition, over the longer term of the

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

14 ***Hidden Harbor Marina***

15 Hidden Harbor Marina is an all-sailboat facility located at the junction of Cache and Steamboat
16 Sloughs, just west of the canal alignment. Related construction activities which would occur north
17 and east of the marina include a tunnel ventilation and access shaft, a permanent access road, and a
18 temporary transmission line. Construction would last up to 2 years and would primarily occur
19 Monday through Friday for up to 24 hours per day. Vehicular access to the marina would be
20 maintained using SR 84 or a detour. Traffic levels on SR 84 may increase because of construction
21 On-water access to the marina would also be maintained, and use of the marina's boating facilities
22 would not be affected by construction. Boating opportunities would still be available at the marina
23 during canal tunnel construction; however, the recreation experiences of marina users may be
24 affected by construction and noise. Construction activities in Steamboat Slough would not be visible
25 to marina users. Marina users may be able to hear construction noise, however, which could
26 temporarily affect the recreation setting and their recreation experiences at the marina. Because
27 construction of these facilities would last 2 years or less, this is considered a short-term effect.

28 ***Delta Protection Lands***

29 These lands on the southern tip of Grand Island between Steamboat Sough and the Sacramento
30 River are designated Natural Reserve open space in the *Sacramento County General Plan*
31 (Sacramento County 2011). The area is considered an important natural area supporting marsh and
32 riparian habitat. Although there are no formal or designated recreation facilities, recreationists
33 visiting the area, especially on the southeastern side near the Sacramento River temporary barge
34 unloading facility, could be exposed to elevated noise for the duration of construction use of the
35 barge which is anticipated to last up to 6 years. Construction would primarily occur Monday through
36 Friday, for up to 24 hours per day.

37 ***Twitchell Island***

38 Alternative 1C conveyance facilities, including the canal alignment (tunnel portion would run from
39 north to south) through Twitchell Island. Related construction would include a tunnel
40 ventilation/access shaft, a permanent road to the access shaft, a temporary work area (safe haven
41 area), a permanent access road to the tunnel shaft, and temporary transmission line. Construction
42 would last up to 3 years and would primarily occur Monday through Friday for up to 24 hours per
43 day. Twitchell Island is part of CDFW's Delta Island Hunting Program, a late-season hunt for

1 pheasants and waterfowl (California Department of Fish and Game 2009a). These lands are
2 available through the cooperation of DWR and CDFW does not have any management authority over
3 these lands. As a result, hunting opportunities may vary from year to year depending on DWR
4 projects and the management and cropping patterns of tenant farmers (California Department of
5 Fish and Game 2009a).

6 Access to the area would be maintained using existing roads or detours. Construction noise and
7 activities could adversely affect hunting opportunities, depending on the timing of construction
8 although only a small portion of the island would be affected. As discussed in Chapter 12, *Terrestrial*
9 *Biological Resources*, Section 12.3.3.4, mitigation would be available to address effects on nesting
10 birds and waterfowl populations. In addition, over the longer term of the action alternatives,
11 implementation of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres
12 of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1,
13 Objective MWNC1.1) that will provide suitable habitat conditions for covered species and native
14 biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of cultivated
15 lands will also benefit sandhill crane and other species. As described above in the *Miner Slough*
16 *Wildlife Area* section, implementation of CM11 would provide beneficial effects on recreation
17 opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP
18 reserve system. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and
19 botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

20 ***Franks Tract State Recreation Area***

21 Alternative 1C tunnel conveyance facility would run from north to south through the western
22 portion of the Franks Tract State Recreation Area. Related construction activities north of Franks
23 Tract State Recreation Area include tunnel access shaft construction, a temporary concrete batch
24 plant, and temporary transmission line. South of Franks Tract State Recreation Area construction
25 activities include a temporary safe haven work area, temporary access road, and a temporary
26 transmission line. Construction would last up to 2 years and would primarily occur Monday through
27 Friday for up to 24 hours per day. Franks Tract State Recreation Area, with most of its acreage
28 underwater, is only accessible by water. Because of its limited access and fluctuating water levels,
29 recreational use is by anglers and waterfowl hunters. Recreation activities such as boating and
30 waterskiing also occur within the Franks Tract State Recreation Area. Boat access to the area
31 would be maintained. Construction noise and activities could adversely affect hunting opportunities
32 and the recreation experiences of hunters and anglers. Generally, the nature of construction in this
33 area is less than in other parts of the alignment and anglers could relocate a short distance even to
34 other areas within the recreation area. There would be little effect on boaters and waterskiing.

35 ***Sycamore Drive Park and Lakewood Drive Community Parks***

36 Sycamore Drive (0.26 acre) and Lakewood Drive (0.58 acre) parks in the Summer Lake community
37 in Oakley, provide localized recreation amenities including lawn areas, picnic tables, playground,
38 and barbecue areas. Construction of the canal and use of a tunnel work area and a siphon work area
39 in the immediate vicinity of these parks would adversely affect neighborhood recreation
40 opportunities. Construction would last up to 6 years and primarily would occur Monday through
41 Friday for up to 24 hours per day. Vehicular access to the parks within the neighborhood would not
42 be affected. Recreation experiences of park users would be adversely affected primarily by
43 construction noise. Construction areas would likely not be highly visible from either park area
44 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, AES-4c, and AES-4d would be available to
27 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
28 23.3.3.4, another nighttime effect on recreation would be construction noise levels that could
29 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
30 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
31 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
32 Measures NOI-1a and 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 implementation of *AMM20 Greater Sandhill Crane* and
10 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
11 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
12 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
13 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
14 *Environmental Commitments, AMMs, and CMs*, 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 17.3.3.4, 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.

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

As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.

Chapter 23, *Noise*, Section 23.3.3.4, discusses that construction noise effects could be addressed through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and implementation of a complaint/response tracking program (NOI-1b), and an environmental commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

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

CEQA Conclusion: Construction of Alternative 1C intakes and related water conveyance facilities would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2 years) impacts on well-established recreational opportunities and experiences in the study area because of access, noise, and visual setting disruptions that would result in loss of public use. These impacts would be temporary, but may occur year-round and would occur over the long-term. Mitigation measures, environmental commitments, and AMMs would reduce these construction-

related impacts by implementing measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of changes to the visual setting, including nighttime light sources; manage construction-related traffic; and implement noise reduction and complaint tracking measures. However, the level of impact would not be reduced to less than significant because even though mitigation measures and environmental commitments would reduce impacts on wildlife, visual setting, transportation, and noise conditions that could detract from the recreation experience, due to the dispersed effects on the recreation experience across the Delta, it is not certain the mitigation would reduce the level of these impacts to less than significant in all instances such that there would be no reduction of recreational opportunities or experiences over the entire study area. Therefore, these impacts are considered significant and unavoidable. However, the impacts related to construction of the intakes would be less than significant.

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

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

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

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

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.

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

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

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

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

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

Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*, 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

26 Please refer to Mitigation Measure AES-4d 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 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 M15-3). 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, AMMs, and CMs*.

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, AMMs, and*
8 *CMSs.*

9 *CM13 Invasive Aquatic Vegetation Control* provides for the control of egeria, water hyacinth, and
10 other IAV throughout the Plan Area. However, the BDCP proponents would also commit to partner
11 with existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
12 Agriculture Research Service, University of California Cooperative Extension Weed Research and
13 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
14 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
15 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
16 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
17 initial control efforts would occur to maximize the effectiveness of the conservation measure.

18 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
19 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
20 proponents would also ensure through various outreach methods that recreationists were aware of
21 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
22 Cut). Nonetheless, effects on waterskiing, wakeboarding or tubing opportunities would last
23 approximately 5 years (long-term) and would be considered adverse because of the reduced
24 recreation opportunity and experiences expected to exist near construction activity.

25 **CEQA Conclusion:** Alternative 1C would result in significant impacts on boat passage and navigation
26 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
27 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
28 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
29 would also result in temporary impacts on wakeboarding, waterskiing, and tubing because of
30 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
31 marine navigation by development and implementation of site-specific construction traffic
32 management plans, including specific measures related to management of barges and stipulations to
33 notify the commercial and leisure boating communities of proposed barge operations in the
34 waterways. While the environmental commitments would reduce impacts on water-based
35 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
36 opportunities for those eliminated during construction, these impacts would be long-term and
37 therefore, considered significant and unavoidable.

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

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

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

NEPA Effects: Overall, the effect on recreational fishing in the study area would be as described under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.4, Sacramento River and Delta region fish populations would not be affected by changes to localized water quality conditions, underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that recreational fishing opportunities would be substantially reduced during construction. BDCP environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers.

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

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; 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, RTM, and dredged material; and a barge operations plan (Appendix 3B,
3 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
4 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
5 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
6 such that there would be no long-term reduction of local fishing opportunities and experiences. This
7 impact would be less than significant.

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

9 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
10 1A.

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: Monitor Underwater Noise, and if Necessary, Use an
16 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
17 Underwater Noise**

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
21 Construction**

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

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

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

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.

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 1C 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 11.3.4.4, 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 1C 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 Alternative 1C would have the same operational scenario as Alternative 1A, and as shown in Table
37 15-12a and Table 15-12b, operation of Alternative 1C would result in the same changes as discussed

under Alternative 1A. Also see Chapter 3, *Description of Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM II model and assumptions.

Existing Conditions (CEQA Baseline) Compared to Alternative 1C (2060)

As shown in Table 15-12a and Table 15-12b, under Alternative 1C there would be from 1 to 20 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, and at 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 1C cannot be isolated in this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 1C (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations attributable to operation of Alternative 1C.

No Action Alternative (2060) Compared to Alternative 1C (2060)

The comparison of Alternative 1C (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, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). Operation of Alternative 1C would result in changes in the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified as important water-dependent recreation thresholds (Table 15-12a and Table 15-12b). In all but one instance (San Luis Reservoir), the CALSIM II modeling results indicate that reservoir levels under Alternative 1C operations would fall below the individual reservoir thresholds less frequently than under No Action Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake, and would be considered beneficial effects of Alternative 1C operations. Operation of Alternative 1C would not adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation conditions under operation of Alternative 1C because 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.

The modeling for San Luis Reservoir indicates there could be up to 6 additional years which the reservoir level would fall below the reservoir boating threshold at the end of September for the Dinosaur Point boat launch. This is a less than 10% change and would not result in a substantial reduction in recreation opportunities or experiences. In addition, at the Basalt boat launch, which is accessible to elevation 340 feet, operations under Alternative 1C would result in only one additional year for which reservoir elevations would fall below the recreation threshold relative to the No Action Alternative (2060) condition. This is also a less than 10% change and would not be considered a substantial reduction in recreation opportunities. 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 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
3 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
4 Alternative 1C (2060) operations would fall below the individual reservoir thresholds less
5 frequently than under No Action Alternative (2060). These changes in reservoir and lake elevations
6 would result in a less-than-significant impact on recreation opportunities and experiences at Trinity
7 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be
8 fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No
9 Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on
10 recreation opportunities and experiences. Operation of Alternative 1C would not substantially affect
11 water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the
12 modeling indicates that reservoir levels could exceed the recreation threshold up to 6 additional
13 years under Alternative 1C operations relative to the No Action Alternative (2060) condition. This is
14 a less than 10% change and is not considered a substantial reduction in recreation opportunities or
15 experiences at this reservoir. Overall, this impact would be less than significant, and these
16 conditions represent improved recreation conditions under operation of Alternative 1C because
17 there would be fewer years in which end-of-September reservoir levels would fall below the
18 recreation thresholds thus indicating better boating opportunities, when compared to No Action
19 Alternative (2060) conditions. No mitigation is required.

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

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

34 Maintenance of intake facilities would result in periodic temporary but not substantial adverse
35 effects on boat passage and water-based recreational activities. Any effects would be short-term and
36 intermittent. Other facility maintenance activities would occur on land and would not affect boat
37 passage and navigation. Implementation of the environmental commitment to provide notification
38 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
39 would reduce these effects. Effects on boat passage and navigation resulting from the maintenance
40 of intake facilities would be short-term and intermittent and would not be considered adverse.

41 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
42 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
43 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
44 environmental commitment to provide notification of maintenance activities in waterways
45 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would further minimize these effects.

1 Intake maintenance impacts on recreation would be considered less than significant because
2 impacts, if any, on public access or public use of established recreation facilities would last for 2
3 years or less. Mitigation is not required.

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

6 **NEPA Effects:** Maintenance activities for the proposed water conveyance facilities may include
7 painting, landscaping, equipment replacement, and mechanical repairs that would be short-term
8 and intermittent and would not affect recreation opportunities because maintenance would occur
9 within the individual facility right-of-way, which does not include any recreation facilities or
10 recreation use areas. In addition, there would be no public recreation use of the new facilities.
11 Maintenance activities would not result in any significant noise that would affect nearby
12 recreational opportunities. Therefore, there would be no effect on recreation opportunities as a
13 result of maintenance of the proposed water conveyance facilities. There would be no 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 CM2–CM21**

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 Plan
4 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
5 fish species and although these CMs would result in highly localized reductions of predatory species,
6 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
7 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.4). Construction
8 of 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, AMMs, and CMs*). In addition, mitigation measures and environmental
16 commitments identified to reduce the effects of constructing CM1 would also be used to minimize
17 effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated
18 with implementation of the other conservation components. Because construction of the
19 conservation measure component facilities would be less intense and of shorter duration than
20 construction of CM1 conveyance facilities, the mitigation measures and environmental
21 commitments would reduce the construction-related impacts on recreational fishing associated with
22 the other conservation measures to a less-than-significant level. Further, the individual facilities or
23 conservation elements will undergo additional environmental review and permitting which will
24 include identification of 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, AMMs, and CMs*; also see additional discussion under Impact REC-2
28 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-
29 related 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, AES-4c, and AES-4d; also
32 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
33 TRANS-1a, TRANS-1b, and TRANS-1c 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 address construction-related noise concerns (see additional discussion under Impact
37 REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.4). Finally, should construction
38 of conservation measure facilities require pile-driving, mitigation measures to protect fish and
39 aquatic species would be implemented to reduce these impacts (see additional discussion under
40 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

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

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

30 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an**
31 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
32 **Underwater Noise**

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

1 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
2 **as a Result of Implementing CM2–CM21**

3 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
4 conservation components under Alternative 1C would be similar to those described for Alternative
5 1A. Implementing the conservation measures could result in an adverse effect on recreation by
6 limiting boating by reducing the extent of navigable waterways available to boaters. Once
7 implemented, the conservation measures could provide beneficial effects to recreation by expanding
8 the extent of navigable waterways available to boaters, improving and expanding boat launch
9 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

10 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
11 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
12 site. The BDCP proponents would implement environmental commitments to include a noise
13 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
14 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
15 number of mitigation measures are available to address construction-related effects on recreational
16 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
17 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
18 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
19 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
20 TRANS-1c are available to address traffic and transportation safety and access conditions of the
21 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
22 *Transportation*, Section 19.3.3.4). Mitigation Measures NOI-1a and NOI-1b are available to address
23 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
24 3, above and Chapter 23, *Noise*, Section 23.3.3.4).

25 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
26 some habitat restoration and enhancement measures and other conservation measures would limit
27 some opportunities for boating and boating-related recreation by reducing the extent of navigable
28 water available to boaters. Temporary effects would also stem from construction, which may limit
29 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
30 implementation. However, BDCP conservation measures would also lead to an enhanced boating
31 experience by expanding the extent of navigable waterways available to boaters, improving and
32 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
33 navigation. Because these measures would not be anticipated to result in a substantial long-term
34 disruption of boating activities, this impact is considered less than significant for the conservation
35 measures, with the exception of CM18, discussed further below.

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

1 address traffic and transportation safety and access conditions of the marina (see additional
2 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
3 19.3.3.4). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see
4 additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section
5 23.3.3.4). Implementation of these measures, as determined applicable to construction of this
6 facility under future site-specific environmental review, would reduce impacts on recreational
7 boating to a less-than-significant level. No additional mitigation would be required.

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-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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

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

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

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

30 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
31 **Result of Implementing CM2–CM21**

32 **NEPA Effects:** Implementing the conservation components under Alternative 1C would have similar
33 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.

34 Implementing the conservation measures could result in an adverse effect on recreation
35 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,

1 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 2 suitable for hiking, nature photography, or other similar activity. However, environmental
 3 commitments would reduce these effects, and implementation of the measures would also restore
 4 or enhance new potential sites for upland recreation thereby improving the quality recreational
 5 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 6 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 7 mechanism and would not result in a physical change to upland areas; construction under CM18,
 8 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 9 action primarily located at boat launches and would not affect upland recreation areas and related
 10 opportunities. These measures are not discussed further in this analysis.

11 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 12 conservation measures would temporarily limit opportunities for upland recreational activities
 13 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 14 construction activities would also temporarily compromise the quality of upland recreation in and
 15 around these areas. Additionally, it is possible that current areas of upland recreation would be
 16 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 17 activities. These impacts on upland recreational opportunities would be less than significant
 18 because the BDCP would include environmental commitments that would require BDCP proponents
 19 to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as described in
 20 Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments, AMMs, and*
 21 *CMS*). Near-term implementation would also restore or enhance new potential sites for upland
 22 recreation and the measure would improve the quality of existing recreational opportunities
 23 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 24 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 25 considered less than significant.

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

29 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 30 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 31 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 32 provide guidance for recreation resource issues as overviewed in Section 15.2, *Regulatory Setting*.
 33 This overview of plan and policy compatibility evaluates whether Alternative 1C is compatible or
 34 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 35 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 36 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 37 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 38 physical effects of Alternative 1C on recreation resources is addressed in Impacts REC-1 through
 39 REC-11, and in other chapters such as Chapter 23, *Noise*, Section 23.3.3.4, and Chapter 17, *Aesthetics*
 40 and *Visual Resources*, Section 17.3.3.4. The following is a summary of compatibility evaluations
 41 related to recreation resources for plans and policies relevant to the BDCP.

- 42 • The New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta
 43 and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General
 44 Management Plan for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National
 45 Recreation Area, Folsom Lake State Recreation Area General Plan, Lake Oroville State Recreation

1 *Area Resource Management Plan and General Development Plan, and San Luis Reservoir State*
2 *Recreation Area General Development Plan* all have policies or goals to protect the recreation
3 resources and promote a range of opportunities to visitors to these areas. Construction and
4 operation of the proposed water conveyance facilities and other conservation measures would
5 not affect recreation opportunities in 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*
8 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
9 all focused on the protection of resources, including recreation resources, within the Delta.
10 These plans have policies, objectives, or goals intended to protect and enhance existing
11 recreation and encourage development of new local and regional opportunities. Constructing
12 the proposed conveyance facilities would result in long term disruption to existing established
13 recreation areas in the study area and change the nature of the recreation setting. The proposed
14 water conveyance elements could be considered incompatible with measures to protect existing
15 recreation opportunities in the study area.
- 16 • The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
17 and the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all
18 promote development of a regional trail system providing a continuous regional recreational
19 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
20 regional and local efforts to design proposed restoration areas to be compatible with and
21 complement the goals of creating a regional trail network and where feasible to adapt
22 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 23 • Regional plans and those geared toward the management of specific areas, including the *Stone*
24 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
25 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*
26 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
27 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
28 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
29 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
30 may create disruptions related to facility and restoration improvements. Proposed restoration
31 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
32 compatible with and complement the current management direction for these areas and would
33 be required to adapt restoration proposals to meet current policy established for managing
34 these areas.
- 35 • The BDCP would be constructed and operate in compliance with regulations related to boat
36 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
37 Department of Parks and Recreation's Division of Boating and Waterways), and federal
38 (including the U.S. Coast Guard) boating law enforcement. The alternative would be compatible
39 with California State Land Commission regulations related to recreational piers or marinas.
- 40 • EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
41 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
42 alternative.
- 43 • Alternative 1C would result in the construction of permanent and temporary features associated
44 with the proposed water conveyance facility across land governed by the general plans of
45 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have

1 policies related to the protection of recreation resources and encourage the development of new
 2 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties
 3 recognize the Delta as an area of international importance and as a major recreational resource
 4 of these counties. Construction activities that disrupt and degrade recreation opportunities in
 5 the study area would be incompatible with policies designed to protect recreation resources,
 6 including those intended to protect open space and natural areas and those that discourage
 7 development of public facilities and infrastructure unless it is related to agriculture, natural
 8 resources and open space, and has recreational value.

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 **15.3.3.5 Alternative 2A—Dual Conveyance with Pipeline/Tunnel and Five 14 Intakes (15,000 cfs; Operational Scenario B)**

15 For the purposes of assessment of effects on recreation, Alternative 2A is the same as Alternative 1A,
 16 with the following exceptions.

- 17 ● Under Alternative 2A, a total of five intake facilities would be constructed and operated. Intake
 18 locations are 1 through 3 in addition to either 4 and 5, or 6 and 7.
- 19 ● The operations scenario for Alternative 2A differs from Alternative 1A (scenario B).
- 20 ● An operable barrier would be placed at the head of Old River at the confluence with the San
 21 Joaquin River.

22 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
 23 Alternative 2A (Mapbook Figure M15-1). Specific effects on recreation areas or sites are discussed
 24 below.

25 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private 26 Commercial Recreation Facility Available for Public Access as a Result of the Location of 27 Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Effects on recreation as a result of the post-construction location of water conveyance
 29 facilities associated with Alternative 2A would be similar to those described under Alternative 1A,
 30 Impact REC-1. Proposed placement of the Alternative 2A water conveyance facilities would not fall
 31 within the designated boundaries or conflict with any existing public use recreation site and would
 32 not result in the permanent disruption or reduction of any well-established recreation activity or
 33 site, including parks, marinas, or other designated areas. Construction of Intakes 6 and 7 instead of
 34 Intakes 4 and 5 would not result in any additional permanent effects on recreation sites or areas.
 35 Therefore, there would be no adverse effects. Effects on recreation related to construction of the
 36 water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and*
 37 *Visual Resources*, Section 17.3.3.5, and Chapter 23, *Noise*, Section 23.3.3.5, for additional discussion
 38 of these topics.

39 **CEQA Conclusion:** The alternative would not result in the permanent displacement of any well-
 40 established public use or private commercial recreation facility available for public access.
 41 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 on recreation as a result of temporarily disrupting the recreation
4 opportunities and uses would be similar to those described under Alternative 1A, Impact REC-2. No
5 additional recreation sites or areas would be affected if Intakes 6 and 7 were constructed instead of
6 Intakes 4 and 5. Construction of Alternative 2A intakes and water conveyance facilities would result
7 in temporary effects related to disruption of recreational opportunities and experiences at seven
8 recreation sites in the study area during construction. Indirect effects on recreation experiences may
9 occur as a result of impaired access, construction noise, or negative visual effects associated with
10 construction.

11 ***Other Recreation Opportunities***

12 ***On-Water Recreation***

13 Cliff's Marina is upstream of Intake 1 construction impact area and Clarksburg Marina falls between
14 the construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina &
15 Boat Storage sites are not within the construction impact area for the Byron Tract Forebay and
16 related facilities near Clifton Court Forebay, and there are no recreation sites within the impact area
17 for the operable barrier at the head of Old River and San Joaquin River. Although these facilities and
18 other marinas or fishing sites fall outside of the impact area for noise, the overall recreation
19 experience upstream or downstream of these sites may fall within the noise impact area and could
20 experience diminished recreation opportunities because of the elevated noise levels as well as visual
21 setting disruptions over the course of intake installation. Overall, construction activities associated
22 with the proposed water conveyance facilities would range from 1 year to up to 5 years depending
23 on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river
24 construction would be further limited primarily to June 1 through October 31 each year. Although
25 dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse
26 noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation
27 areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife
28 and fish, causing recreationists to experience a changed recreation setting.

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, AES-4c, and AES-4d would be available to
34 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
35 23.3.3.5, another nighttime effect on recreation would be construction noise levels that could
36 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
37 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
38 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
39 Measures NOI-1a and NOI-1b would be available to address these effects.

40 ***Summary***

41 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
42 sites near recreation sites or areas and in-river construction would be primarily limited to June 1

1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.5,
2 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.5, Chapter 19, *Transportation*, Section
3 19.3.3.5, and Chapter 23, *Noise*, Section 23.3.3.5, for additional detail related to waterfowl/wildlife,
4 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1A,
5 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
6 within the construction impact area.

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

39 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.5, identifies a number of mitigation
40 measures that would be available to address construction-related visual effects on sensitive
41 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
42 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
43 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
44 addition, the chapter identifies measures to address longer term visual effects associated with
45 changes to the landscape/visual setting from construction and the presence of new water
46 conveyance features. These include developing and implementing a spoil/borrow and RTM area

1 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
2 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
3 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
4 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
5 would also make a commitment to enhance the visual character of the area by creating new wildlife
6 viewing sites and enhancing interest in the construction site by constructing viewing areas and
7 displaying information about the project, which may attract people who may use the recreation
8 facilities to the construction site as part of the visit.

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

20 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
21 involve preparation of site-specific construction traffic management plans that would address
22 potential public access routes and provide construction information notification to local residents
23 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
24 of access to affected recreation areas as an environmental commitment. Where construction
25 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
26 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
27 construction sites. These would be designed to be safe, pleasant and would integrate with
28 opportunities to view the construction site as an additional area of interest. These physical facilities
29 would be combined with public information, including sidewalk wayfinding information that would
30 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
31 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
32 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
33 congested roadway segments.

34 Chapter 23, *Noise*, Section 23.3.3.5, 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, AMMs,*
38 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
39 to the extent possible so as to avoid effects on passive recreation activities such as walking,
40 picnicking, and 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 2A intakes and related water conveyance facilities
4 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
5 years) impacts on well-established recreational opportunities and experiences in the study area
6 because of access, noise, and visual setting disruptions. These impacts would be temporary, but may
7 occur year-round. Mitigation measures, environmental commitments, and AMMs would reduce
8 these construction-related impacts by implementing measures to protect or compensate for effects
9 on wildlife habitat and species; minimize the extent of changes to the visual setting, including
10 nighttime light sources; manage construction-related traffic; and implement noise reduction and
11 complaint tracking measures. However, the level of impact would not be reduced to less than
12 significant because even though mitigation measures and environmental commitments would
13 reduce the impacts on wildlife, visual setting, transportation, and noise conditions that could detract
14 from the recreation experience, due to the dispersed effects on the recreation experience across the
15 Delta, it is not certain the mitigation would reduce the level of these impacts to less than significant
16 in all instances such that there would be no reduction of recreational opportunities or experiences
17 over 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 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
21 1A.

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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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.

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:** Effects on recreation as a result of temporarily altering recreation navigation during
18 construction of intakes and barge unloading facilities would be similar to those described under
19 Alternative 1A, Impact REC-3. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not
20 result in substantially different effects on recreational navigation. Alternative 2A also would involve
21 construction and operation of an operable barrier at the head of Old River (Mapbook Figure M15-1).

22 Direct effects on boat passage and navigation on the Sacramento River would result from
23 construction of the intakes. Effects could include reduced access and delays to boat passage and
24 navigation related to the narrower available river width and temporary speed zones. However, boat
25 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
26 Water-based recreational activities such as waterskiing, wakeboarding, or tubing are also low. In
27 addition, there is sufficient width in the channel to allow boat passage, with minor delays related to
28 construction speed zones. These effects on boat passage and navigation would be reduced with the
29 implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents developing
30 and implementing site-specific construction traffic management plans, including waterway
31 navigation elements and providing notification of construction activities in waterways to ensure
32 information about construction site location(s), construction schedules, and identification of no-
33 wake zone and/or detours is posted at Delta marinas and public launch ramps. Nonetheless, these
34 effects would be long-term, lasting approximately 5 years and would be considered adverse because
35 of the reduced recreation opportunity and experiences expected to exist near construction activity.

36 Construction of the six temporary barge unloading facilities would result in adverse effects on boat
37 passage and navigation on waterways in the study area, including the creation of obstructions to
38 boat passage and associated boat traffic delays and temporary partial channel closures that could
39 impede boat movement and eliminate recreational opportunities. In waterways where waterskiing,
40 wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading

1 facilities would be eliminated during construction. Construction of the operable barrier at the head
2 of Old River would have only short-term effects on recreational boating access on Old River. The
3 barrier would have a boat lock that would restore boating access once construction is complete.

4 Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by
5 development and implementation of site-specific construction traffic management plans, including
6 specific measures related to management of barges and stipulations to notify the commercial and
7 leisure boating communities of proposed barge operations in the waterways. Additionally, BDCP
8 proponents would contribute funds for the construction of new recreation opportunities as well as
9 for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the
10 Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in
11 the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds
12 could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-
13 Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin,
14 the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent
15 with, commencement of construction of the BDCP. This commitment serves to compensate for the
16 loss of recreational opportunities within the project area by providing a recreational opportunity
17 downstream/upstream in the same area for the same regional recreational users. These
18 commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

35 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
36 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
37 proponents would also ensure through various outreach methods that recreationists were aware of
38 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
39 Cut). The barge unloading facilities would be removed after construction is complete and the
40 operable barrier will include a boat lock to permit boat passage once construction is complete.
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 component would not result in adverse effects
43 on recreational navigation. Construction-related effects on recreational navigation in the vicinity of
44 the barge unloading facilities would last up to 5 years (long-term) and would be considered adverse
45 because of the reduced recreation opportunity and experiences expected to exist near construction
46 activity.

CEQA Conclusion: Impacts on boat passage and navigation in the study area would result from the construction of the intakes, temporary barge unloading facilities, and the operable barrier at the head of Old River. Impacts from intake and barge unloading facilities would last approximately 5 years and include obstruction and delays to boat passage and navigation as a result of channel obstructions in addition to compliance with temporary speed zones. Temporary channel closures could impede boat movement and eliminate recreational opportunities. In waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed construction and barge operations in the waterways. While the environmental commitments would reduce impacts on water-based recreation (waterskiing, wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those eliminated during construction, these impacts would be long-term and considered significant and unavoidable. Construction of the operable barrier would last for 2 years (short-term) and would not result in long-term reduction of recreation opportunities. This would be a less-than-significant impact on recreational navigation on Old River.

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

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

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

Effects on recreational fishing under Alternative 2A would be similar to those described under Alternative 1A, Impact REC-4. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not be expected to result in substantially different effects on recreational fishing, although immediate local effects on any informal bank fishing that occurs near the intake sites could be shifted.

As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5, Sacramento River and Delta region fish populations would not be affected by changes to localized water quality conditions, underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that recreational fishing opportunities would be substantially reduced during construction. BDCP environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would 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. Therefore, construction of the proposed
22 water conveyance facilities would not result in a long-term reduction of fishing opportunities. This
23 effect would not be adverse.

24 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
25 construction activities would be considered less than significant because the BDCP would include
26 environmental commitments to prevent water quality effects include environmental training;
27 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
28 hazardous materials management plans, and spill prevention, containment, and countermeasure
29 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
30 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
31 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
32 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
33 such that there would be no long-term reduction of local fishing opportunities and experiences. This
34 impact 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 AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 39 of Pile Driving and Other Construction-Related Underwater Noise**

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

1 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an**
2 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
3 **Underwater Noise**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

34 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
35 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 2A 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 11.3.4.5, 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 2A would be considered less than significant because any impacts to fish
 16 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 17 would 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 2A 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 water-
 23 dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No Action
 24 Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a and
 25 Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of Alternatives*,
 26 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 27 BDCP/*California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
 28 II model and assumptions.

29 **Existing Conditions (CEQA Baseline) Compared to Alternative 2A (2060)**

30 As shown in Table 15-12a and Table 15-12b, under Alternative 2A there would be from 4 to 31
 31 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 32 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 33 Trinity Lake, Shasta Lake, Folsom Lake, Lake Oroville, and San Luis Reservoir. However, as discussed
 34 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
 35 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
 36 specifically define the exact extent of the changes due to implementation of the action alternative
 37 using these model simulation results. Thus, the precise contributions of sea level rise and climate
 38 change to the total differences between Existing Conditions and Alternative 2A cannot be isolated in
 39 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative
 40 2A (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
 41 attributable to operation of Alternative 2A.

1 No Action Alternative (2060) Compared to Alternative 2A (2060)

2 The comparison of Alternative 2A (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,
5 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

6 As shown in Table 15-12a and Table 15-12b, operation of Alternative 2A would primarily result in
7 changes in the frequency with which the end of September reservoir levels at Trinity Lake, Shasta
8 Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels identified as
9 important water-dependent recreation thresholds. Changes at San Luis Reservoir show greater
10 difference when compared to the No Action Alternative (2060) than projected for the other
11 reservoirs.

12 In comparisons of Alternative 2A (2060) operations to No Action Alternative (2060), the CALSIM II
13 modeling results indicate that reservoir levels under Alternative 2A operations would vary from one
14 reservoir to another and that most, with the exception of San Luis Reservoir, would experience little
15 to no change or would fall below the individual reservoir thresholds less frequently than under No
16 Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely
17 affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and
18 Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall
19 below the recreation thresholds thus indicating better boating opportunities, when compared to No
20 Action Alternative (2060) conditions. Operation of Alternative 2A would not adversely affect water-
21 dependent or water-enhanced recreation at these reservoirs.

22 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
23 frequently under Alternative 2A (2060) conditions (25 years) relative to the No Action Alternative
24 (2060) for the Dinosaur Point boat launch. However, access to the Basalt boat launch, which is
25 available to reservoir elevation 340 feet, would not substantially change relative to the No Action
26 Alternative (2060) (there would be three additional years below the threshold). Therefore, because
27 the Basalt boat launch would still be available for access to the reservoir, and the change in
28 frequency with which the recreation threshold would be exceeded at Basalt is less than 10% (8
29 years or less), these changes in elevation at San Luis Reservoir under operation of Alternative 2A
30 would not be adverse. Shoreline fishing would still be possible, and other recreation activities at the
31 reservoir—picnicking, biking, hiking, and fishing—would be available. These changes would not be
32 adverse.

33 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
34 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
35 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
36 Alternative 2A (2060) operations would fall below the individual reservoir thresholds either with
37 the same or reduced frequency than under the No Action Alternative (2060). These changes in
38 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
39 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
40 Lake Oroville and Folsom Lake, because there would be fewer years in which the lake levels fall
41 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
42 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
43 Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point
44 boat launch, access to the Basalt boat launch would not substantially change. The modeled
45 additional three years of exceeding the recreation threshold attributable to operation of Alternative

1 2A (2060) relative to the No Action Alternative (2060) would be less than significant because it is a
2 less than 10% change (8 years or less). Operation of Alternative 2A would not substantially affect
3 water-dependent or water-enhanced recreation at these reservoirs. Overall, this would be a less-
4 than-significant impact. No mitigation is required.

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

7 **NEPA Effects:** Changes to boat passage, navigation, and water-based recreation activities as a result
8 of maintenance of intake facilities and other structures under Alternative 2A would be similar to
9 those described for Alternative 1A, Impact REC-7 and would result in periodic temporary but not
10 substantial effects on boat passage and water-based recreational activities. Any effects would be
11 short-term (less than 2 years) and intermittent. Other facility maintenance activities would occur on
12 land and would not affect boat passage and navigation. Implementation of the environmental
13 commitment to provide notification of maintenance activities in waterways (Appendix 3B,
14 *Environmental Commitments, AMMs, and CMs*) would reduce these effects. These effects are not
15 considered adverse.

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

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

26 **NEPA Effects:** Changes to land-based recreation opportunities as a result of maintenance of
27 conveyance facilities under Alternative 2A would be similar to those described for Alternative 1A,
28 Impact REC-8. Maintenance would be short-term and intermittent and would be conducted within
29 the individual facility right-of-way, which does not include any recreation facilities or recreation use
30 areas. There would be no adverse effects on recreation opportunities as a result of maintenance of
31 the proposed water conveyance facilities.

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

35 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of
36 Implementing CM2-CM21**

37 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
38 components as part of Alternative 2A could have effects related to recreational fishing that are
39 similar in nature to those discussed above for construction, and operation and maintenance of
40 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
41 effects would likely be substantially lower because the nature of the activities associated with
42 implementing the conservation components would be different—less heavy construction equipment

would be required and the restoration actions would be implemented over a longer time frame than CM1. Potential effects from implementation of the conservation components would be dispersed over a larger area and would generally involve substantially fewer construction and operation effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement components would be expected to result in long-term benefits to aquatic species. Additional discussion related to the individual conservation measures is provided below.

With regards to fishing opportunities, effects of implementing the conservation components under Alternative 2A would be similar to those described for Alternative 1A. CM2–CM21 would be expected to improve fishing opportunities in the study area although some effect on fishing opportunities could take place during implementation of the conservation measures. Overall, implementing the proposed conservation components would be expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

CEQA Conclusion: CM2–CM21 in the long-term would be expected to improve fishing opportunities by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators; controlling illegal harvest of covered species; and expanding boat launch facilities. During the implementation stage, these measures could result in impacts on fishing opportunities by temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased onshore fishing opportunities. These impacts would be considered less than significant because the BDCP would include environmental commitments 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, AMMs, and CMs*). CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly localized reductions of predatory species, overall, these measures would not result in an appreciable decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5). Construction of facilities could have short-term impacts on the noise or visual setting and could indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B). In addition, mitigation measures and environmental commitments identified to reduce the effects of constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of the other conservation components. Because construction of the conservation measure component facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2

and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.5). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.5). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.5).

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

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.

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

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

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

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

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

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

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

Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 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: Monitor Underwater Noise, and if Necessary, Use an**
9 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
10 **Underwater Noise**

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

13 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
14 **as a Result of Implementing CM2–CM21**

15 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
16 conservation components under Alternative 2A would be similar to those described for Alternative
17 1A. Implementing the conservation measures could result in an adverse effect on recreation by
18 limiting boating by reducing the extent of navigable waterways available to boaters. Once
19 implemented, the conservation measures could provide beneficial effects to recreation by expanding
20 the extent of navigable waterways available to boaters, improving and expanding boat launch
21 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

22 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
23 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
24 site. The BDCP proponents would implement environmental commitments to include a noise
25 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional
26 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
27 number of mitigation measures are available to address construction-related effects on recreational
28 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
29 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
30 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
31 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
32 TRANS-1c are available to address traffic and transportation safety and access conditions of the
33 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
34 *Transportation*, Section 19.3.3.5). Mitigation Measures NOI-1a and NOI-1b are available to address
35 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
36 3, above and Chapter 23, *Noise*, Section 23.3.3.5).

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 base
8 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
9 site. The BDCP proponents would implement environmental commitments to include a noise
10 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
11 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
12 number of mitigation measures address construction-related impacts on recreational boating by
13 reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17,
14 *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-
15 1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under
16 Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c
17 address traffic and transportation safety and access conditions of the marina (see additional
18 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
19 19.3.3.5). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see
20 additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section
21 23.3.3.5). Implementation of these measures, as determined applicable to construction of this
22 facility under future site-specific environmental review, would reduce impacts on recreational
23 boating to a less-than-significant level. No 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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 CM2–CM21**

9 **NEPA Effects:** Implementing the conservation components under Alternative 2A would have similar
10 effects 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 Commitments,*
33 *AMMs, and CMs*). 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**
39 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
40 **Addressing Recreation Resources**

41 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
42 Alternative 2A would generally have the same potential for incompatibilities with one or more plans

and policies related to protecting and promoting recreation opportunities in the study area as described for Alternative 1A, Impact AES-12. Variation would result from two potentially different intake locations and inclusion of an operable barrier at the head of Old River. However, Intakes 6 and 7 and the operable barrier would fall under the same jurisdictions as discussed under Alternative 1A, and so, overall the potential for incompatibility is the same. As described under Alternative 1A, there would be potential for the alternative to be incompatible with plans and policies related to recreation 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 Solano County, the alternative may be incompatible 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.

15.3.3.6 Alternative 2B—Dual Conveyance with East Alignment and Five Intakes (15,000 cfs; Operational Scenario B)

For the purposes of assessment of effects on recreation, Alternative 2B is the same as Alternative 1B, with the following exceptions.

- Under Alternative 2B, a total of 5 intake facilities would be constructed and operated. Intake locations are 1 through 3 in addition to either 4 and 5, or 6 and 7.
- 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 M15-2). 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 23.3.3.6, for additional discussion of these topics.

1 **CEQA Conclusion:** Alternative 2B would not result in the location of water conveyance facilities that
2 would permanently displace any well-established public use or private commercial recreation
3 facility available for public access. Therefore, impacts are considered less than significant. No
4 mitigation is 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:** Construction-related temporary disruption of existing recreational facilities under
8 Alternative 2B would be similar to that described under Alternative 1B, Impact REC-2. No additional
9 recreation sites or areas would be affected if Intakes 6 and 7 were constructed instead of Intakes 4
10 and 5. Construction of Alternative 2B intakes and water conveyance facilities would result in
11 temporary short-term and long-term effects related to disruption of recreational opportunities and
12 experiences at 18 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 Intake 1 construction area. Similarly, Lazy M Marina and Rivers End
18 Marina & Boat Storage sites are not within the construction impact area for the Byron Tract Forebay
19 and related facilities near Clifton Court Forebay, and there are no recreation sites within the impact
20 area for the operable barrier at the head of Old River and San Joaquin River. Although these facilities
21 and other marinas or fishing sites fall outside of the impact area for noise, the overall recreation
22 experience upstream or downstream of these sites may fall within the noise impact area and could
23 experience diminished recreation opportunities because of the elevated noise levels as well as visual
24 setting disruptions over the course of intake installation. Overall, construction activities associated
25 with the proposed water conveyance facilities would range from 1 year to up to 5 years depending
26 on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river
27 construction would be further limited primarily to June 1 through October 31 each year. Although
28 dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse
29 noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation
30 areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife
31 and fish, causing recreationists to experience a changed recreation setting.

32 *Campgrounds*

33 Nighttime construction activities would require the use of bright lights that would negatively affect
34 nighttime views of and from the work area. This would affect any overnight camping at the
35 recreation sites and areas discussed above, although day use areas that close at sunset would not be
36 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
37 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, 23.4.3.6,
38 another nighttime effect on recreation would be construction noise levels that could adversely affect
39 camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime
40 construction could be infrequent and intermittent, but would adversely affect camping sites.
41 Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and
42 NOI-1b would be available to address these effects.

1 **Summary**

2 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
3 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
4 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.6,
5 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.6, Chapter 19, *Transportation*, Section
6 19.3.3.6, and Chapter 23, *Noise*, Section 23.3.3.6, for additional detail related to waterfowl/wildlife,
7 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1B,
8 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
9 within the construction impact area. As discussed in Chapter 12, *Terrestrial Biological Resources*,
10 Section 12.3.3.2, construction could have an adverse effect on waterfowl if they were present in or
11 adjacent to work areas and could result in destruction of nests or disturbance of nesting and
12 foraging behaviors. These effects could indirectly affect recreational wildlife viewing and hunting in
13 the study area; however, mitigation measures, environmental commitments, and conservation
14 measures would provide several benefits to waterfowl habitat, which would result in increased
15 recreational opportunities. Mitigation Measure BIO-75, *Conduct preconstruction nesting bird surveys*
16 and *avoid disturbance of nesting birds*, would be available to address these effects. In addition, in
17 areas near greater sandhill crane habitat, construction-related disturbances (noise and visual),
18 installation of transmission lines, or habitat degradation associated with accidental spills, runoff and
19 sedimentation, and dust could have adverse effects on sandhill cranes and related recreational
20 viewing opportunities. These effects on sandhill crane would be minimized with implementation of
21 *AMM20 Greater Sandhill Crane and AMM31 Noise Abatement*. These measures, designed to avoid and
22 minimize effects on greater sandhill crane, would be implemented by the BDCP proponents where
23 determined necessary for all covered activities throughout the permit term. These and other BDCP
24 AMMs are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed
25 in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, DWR would implement an
26 environmental commitment that would dispose of and reuse spoils, reusable tunnel material, and
27 dredged material. Materials could be reused for purposes such as flood protection, habitat
28 restoration, subsidence reversal. In addition, over the longer term of the action alternatives,
29 implementation of CM3 and CM11 will result in protection and enhancement of 8,100 acres of
30 managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
31 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
32 including benefiting migratory waterfowl. CM3 will also protect cultivated lands, which will benefit
33 sandhill crane and other species. Implementation of CM11 will provide beneficial effects on
34 recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in
35 the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed wetland,
36 and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The
37 reserve system would comprise more than 170 miles of trail (25 of which would be new), 4 picnic
38 areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat launch
39 facility within the footprint of the North Delta diversion facilities. Permitted activities will include
40 hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting,
41 fishing, and boating.

42 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.6, identifies a number of mitigation
43 measures that would be available to address construction-related visual effects on sensitive
44 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
45 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
46 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In

addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). DWR would also make a commitment to enhance the visual character of the area by creating new wildlife viewing sites and enhancing interest in the construction site by constructing viewing areas and displaying information about the project, which may attract people who may use the recreation facilities to the construction site as part of the visit.

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

As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.

Chapter 23, *Noise*, Section 23.3.3.6, discusses that construction noise effects could be addressed through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and implementation of a complaint/response tracking program (NOI-1b), and an environmental commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-2 would ensure continued access to existing recreation experiences. The Delta offers many

1 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
2 all of which would continue to be available for recreationists. However, due to the length of time that
3 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
4 related to temporary disruption of existing recreational activities at facilities within the impact area
5 would be adverse.

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

26 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 27 Disturbance of Nesting Birds**

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

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

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

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

37 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
38 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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:** Effects on recreation as a result of temporarily altering recreation navigation during
22 construction of intakes and barge unloading facilities would be similar to those described under
23 Alternative 1B, Impact REC-3. Construction of Intakes 6 and 7 instead of Intakes 4 and 5 would not
24 result in substantially different effects on recreational navigation. Alternative 2B also would involve
25 construction and operation of an operable barrier at the head of Old River (Mapbook Figure M15-2).

26 Changes to boat passage and navigation on the Sacramento River in the vicinity of the intakes, barge
27 unloading facilities and siphons would result in adverse direct and indirect effects on recreational
28 navigation in the affected waterways. Direct effects would result from the creation of obstructions to
29 boat passage and associated boat traffic delays and temporary channel closures that could impede
30 boat movement. Changes to boat passage would also result in effects on recreational navigation and
31 water-based recreation activities such as wakeboarding, waterskiing, and tubing. Although there
32 may be short delays in boat passage, access to the affected waterways would be maintained. The
33 sloughs where siphons would cross do not support large boat traffic volumes and construction
34 activities would not result in substantial adverse effects. However, because boat passage and
35 navigation would be disrupted, effects are considered adverse. Construction of the operable barrier
36 at the head of Old River would have only short-term effects on recreational boating access on Old
37 River. The barrier would have a boat lock that would restore boating access once construction is
38 complete.

Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating community of proposed barge operations in the waterways. Additionally, BDCP proponents would contribute funds for the construction of new recreation opportunities as well as for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment serves to compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. These commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

CM13 Invasive Aquatic Vegetation Control and the environmental commitments would create and rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP proponents would also ensure through various outreach methods that recreationists were aware of nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop Cut).

The barge unloading facilities would be removed after construction is complete and the operable barrier will include a boat lock to permit boat passage once construction is complete. Construction of the operable barrier would last for 2 years (short-term) and would not result in long-term reduction of recreation opportunities. This component would not result in adverse effects on recreational navigation. Nonetheless, construction-related effects on recreation navigation in the vicinity of intakes and barge unloading facilities on waterskiing, wakeboarding or tubing opportunities would last approximately 5 years (long-term) and would be considered adverse because of the reduced recreation opportunity and experiences expected to exist near construction activity.

1 **CEQA Conclusion:** Construction of Alternative 2B would result in significant impacts on boat
2 passage and navigation in the Sacramento River and other waterways within the Delta where
3 intakes, temporary barge unloading facilities, and siphons occur. The creation of obstructions to
4 boat passage would result in boat traffic delays and impediments to boat movement. Changes to
5 boat passage and navigation would also result in temporary impacts on wakeboarding, waterskiing
6 and tubing because of reduced speeds and passage impediments. Mitigation Measure TRANS-1a
7 would reduce impacts on marine navigation by development and implementation of site-specific
8 construction traffic management plans, including specific measures related to management of
9 barges and stipulations to notify the commercial and leisure boating communities of proposed
10 construction and barge operations in the waterways. While the environmental commitments would
11 reduce impacts on water-based recreation (water-skiing, wakeboarding, tubing) in these areas by
12 creating alternative recreation opportunities for those eliminated during construction, these
13 impacts would be long-term and therefore considered significant and unavoidable. Construction of
14 the operable barrier would last for 2 years (short-term) and would not result in long-term reduction
15 of recreation opportunities. This would be a less-than-significant impact on recreational navigation
16 on Old River.

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 2B would be similar to those
24 described under Alternative 1B, Impact REC-4. Construction of Intakes 6 and 7 instead of Intakes 4
25 and 5 would not be expected to result in substantially different effects on recreational fishing,
26 although immediate local effects on any informal bank fishing that occurs near the intake sites could
27 be shifted.

28 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section, 11.3.4.6, Sacramento River and
29 Delta region fish populations would not be affected by changes to localized water quality conditions,
30 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
31 recreational fishing opportunities would be substantially reduced during construction. BDCP
32 environmental commitments to prevent water quality effects include environmental training;
33 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
34 hazardous materials management plans, and spill prevention, containment, and countermeasure
35 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
36 *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas
37 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
38 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
39 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
40 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
41 driving. Although fish populations likely would not be affected to the degree that fishing
42 opportunities would be substantially reduced, construction conditions would introduce noise and
43 visual disturbances that would affect the recreation experience for anglers.

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

24 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
25 construction activities would be considered less than significant because the BDCP would include
26 environmental commitments to prevent water quality effects include environmental training;
27 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
28 hazardous materials management plans, and spill prevention, containment, and countermeasure
29 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
30 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
31 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
32 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
33 such that there would be no long-term reduction of local fishing opportunities and experiences. This
34 impact 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 AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 39 of Pile Driving and Other Construction-Related Underwater Noise**

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

1 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an**
2 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
3 **Underwater Noise**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

34 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
35 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 2B 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 11.3.4.6, 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 2B would be considered less than significant because any impacts to fish
16 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
17 would 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:** Alternative 2B would have the same operational scenario as Alternative 2A, and as
22 shown in Table 15-12a and Table 15-12b, Alternative 2B would result in the same changes in the
23 frequency with which the end-of-September reservoir levels at study area reservoirs fall below
24 levels identified as important water-dependent recreation thresholds relative to Existing Conditions
25 (CEQA baseline) and the No Action Alternative (2060) (alternative operations contribution [impact]
26 comparison) as discussed under Alternative 2A. Also see Chapter 3, *Description of Alternatives*,
27 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
28 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
29 II model and assumptions.

30 **Existing Conditions (CEQA Baseline) Compared to Alternative 2B (2060)**

31 As shown in Table 15-12a and Table 15-12b, under Alternative 2B there would be from 4 to 31
32 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
33 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
34 Trinity Lake, Shasta Lake, Folsom Lake, Lake Oroville, and San Luis Reservoir. However, as discussed
35 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
36 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
37 specifically define the exact extent of the changes due to implementation of the action alternative
38 using these model simulation results. Thus, the precise contributions of sea level rise and climate
39 change to the total differences between Existing Conditions and Alternative 2B cannot be isolated in
40 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative
41 2B (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
42 attributable to operation of Alternative 2B.

1 No Action Alternative (2060) Compared to Alternative 2B (2060)

2 The comparison of Alternative 2B (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,
5 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As shown in Table 15-12a and
6 Table 15-12b, operation of Alternative 2B would primarily result in changes in the frequency with
7 which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom
8 Lake, and New Melones Reservoir would fall below levels identified as important water-dependent
9 recreation thresholds. Changes at San Luis Reservoir show greater difference when compared to the
10 No Action Alternative (2060) than projected for the other reservoirs.

11 In comparisons of Alternative 2B (2060) operations to No Action Alternative (2060), the CALSIM II
12 modeling results indicate that reservoir levels under Alternative 2B operations would vary from one
13 reservoir to another and that most, with the exception of San Luis Reservoir, would experience little
14 to no change or would fall below the individual reservoir thresholds less frequently than under No
15 Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely
16 affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and
17 Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall
18 below the recreation thresholds thus indicating better boating opportunities, when compared to No
19 Action Alternative (2060) conditions. Operation of Alternative 2B would not adversely affect water-
20 dependent or water-enhanced recreation at these reservoirs.

21 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
22 frequently under Alternative 2B (2060) (25 years) relative to No Action Alternative (2060) for the
23 Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to
24 reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative
25 (2060) (there would be three additional years below the threshold). Therefore, because the Basalt
26 boat launch would still be available for access to the reservoir, and the change in frequency with
27 which the recreation threshold would be exceeded at Basalt is less than 10% (8 years or less), these
28 changes in elevation at San Luis Reservoir under operation of Alternative 2B would not be adverse.
29 Shoreline fishing would still be possible, and other recreation activities at the reservoir—picnicking,
30 biking, hiking, and fishing—would be available. These changes would not be adverse.

31 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
32 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
33 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
34 Alternative 2B (2060) operations would fall below the individual reservoir thresholds either with
35 the same or reduced frequency than under the No Action Alternative (2060). These changes in
36 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
37 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
38 Lake Oroville and Folsom Lake these changes would be considered beneficial effects on recreation
39 opportunities and experiences under Alternative 2B operations because there would be fewer years
40 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
41 conditions. At San Luis Reservoir, although boating opportunity would be reduced more frequently
42 for the Dinosaur Point boat launch, access to the Basalt boat launch would not substantially change.
43 The modeled additional three years of exceeding the recreation threshold attributable to operation
44 of Alternative 2B (2060) relative to the No Action Alternative (2060) would be less than significant
45 because it is a less than 10% change (8 years or less). Operation of Alternative 2B would not

1 substantially affect water-dependent or water-enhanced recreation at these reservoirs. Overall, this
2 would be a less-than-significant impact. No mitigation is 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:** The effects of maintenance activities on water-based recreation under Alternative 2B
6 would be similar to those described under Alternative 1A, Impact REC-7, and would result in
7 periodic temporary but not substantial effects on boat passage and water-based recreational
8 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
9 maintenance activities would occur on land and would not affect boat passage and navigation.
10 Implementation of the environmental commitment to provide notification of maintenance activities
11 in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would reduce these
12 effects. These effects are not considered adverse.

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

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

23 **NEPA Effects:** The effects of maintenance activities on land-based recreation under Alternative 2B
24 would be similar to those described under Alternative 1B, Impact REC-8 and would not affect
25 recreation opportunities. The right-of-way under Alternative 2B includes the Stone Lakes NWR,
26 White Slough Wildlife Area, and Cosumnes River Preserve; however, the lands in the Stone Lakes
27 NWR and Cosumnes River Preserve in the right-of-way are not used for recreation, so there would
28 be no effects on recreation opportunities. In the White Slough Wildlife Area (Pond 6) there would be
29 a bridge right-of-way; facility maintenance activities would be restricted to roadway maintenance
30 and would not affect recreation opportunities in the wildlife area. Maintenance would be short-term
31 and intermittent and there would be no long-term change to recreation opportunities as a result of
32 maintenance of conveyance facilities. There would be no effects.

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

36 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
37 **Implementing CM2–CM21**

38 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
39 components as part of Alternative 2B could have effects related to recreational fishing that are
40 similar in nature to those discussed above for construction, and operation and maintenance of
41 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
42 effects would likely be substantially lower because the nature of the activities associated with

1 implementing the conservation components would be different—less heavy construction equipment
2 would be required and the restoration actions would be implemented over a longer time frame than
3 CM1. Potential effects from implementation of the conservation components would be dispersed
4 over a larger area and would generally involve substantially fewer construction and operation
5 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
6 components would be expected to result in long-term benefits to aquatic species. Additional
7 discussion related to the individual conservation measures is provided below.

8 With regards to fishing opportunities, effects of implementing the conservation components under
9 Alternative 2B would be similar to those described for Alternative 1A. CM2–CM21 would be
10 expected to improve fishing opportunities in the study area although some effect on fishing
11 opportunities could take place during implementation of the conservation measures. Overall,
12 implementing the proposed conservation components would be expected to provide beneficial
13 effects on aquatic habitat and fish abundance thereby improving fishing opportunities

14 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
15 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
16 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
17 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
18 implementation stage, these measures could result in impacts on fishing opportunities by
19 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
20 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
21 onshore fishing opportunities. These impacts would be considered less than significant because the
22 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
23 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
24 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
25 fish species and although these CMs would result in highly localized reductions of predatory species,
26 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
27 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.6). Construction
28 of facilities could have short-term impacts on the noise or visual setting and could indirectly affect
29 recreational fishing. The potential impact on covered and non-covered sport fish species from
30 construction activities would be considered less than significant because the BDCP would include
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, and dredged material; and a barge operations plan (Appendix 3B). In
35 addition, mitigation measures and environmental commitments identified to reduce the effects of
36 constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual
37 conditions, noise, transportation/access) associated with implementation of the other conservation
38 components. Because construction of the conservation measure component facilities would be less
39 intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation
40 measures and environmental commitments would reduce the construction-related impacts on
41 recreational fishing associated with the other conservation measures to a less-than-significant level.
42 Further, the individual facilities or conservation elements will undergo additional environmental
43 review and permitting which will include identification of site-specific measures to further protect
44 resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.6). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.6). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.6).

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

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.

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

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

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

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

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

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

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

Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 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: Monitor Underwater Noise, and if Necessary, Use an**
9 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
10 **Underwater Noise**

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

13 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
14 **as a Result of Implementing CM2–CM21**

15 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
16 conservation components under Alternative 2B would be similar to those described for Alternative
17 1A. Implementing the conservation measures could result in an adverse effect on recreation by
18 limiting boating by reducing the extent of navigable waterways available to boaters. Once
19 implemented, the conservation measures could provide beneficial effects to recreation by expanding
20 the extent of navigable waterways available to boaters, improving and expanding boat launch
21 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

22 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
23 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
24 site. The BDCP proponents would implement environmental commitments to include a noise
25 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional
26 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
27 number of mitigation measures are available to address construction-related effects on recreational
28 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
29 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
30 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
31 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
32 TRANS-1c are available to address traffic and transportation safety and access conditions of the
33 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
34 *Transportation*, Section 19.3.3.6). Mitigation Measures NOI-1a and NOI-1b are available to address
35 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
36 3, above and Chapter 23, *Noise*, Section 23.3.3.6).

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 base
8 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
9 site. The BDCP proponents would implement environmental commitments to include a noise
10 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
11 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
12 number of mitigation measures address construction-related impacts on recreational boating by
13 reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17,
14 *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-
15 1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under
16 Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c
17 address traffic and transportation safety and access conditions of the marina (see additional
18 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
19 19.3.3.6). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see
20 additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section
21 23.3.3.6). Implementation of these measures, as determined applicable to construction of this
22 facility under future site-specific environmental review, would reduce impacts on recreational
23 boating to a less-than-significant level. No 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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 CM2–CM21**

9 **NEPA Effects:** Implementing the conservation components under Alternative 2B would have similar
10 effects 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 Commitments,*
33 *AMMs, and CMs*). 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**
39 **Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations**
40 **Addressing Recreation Resources**

41 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
42 Alternative 2B would generally have the same potential for incompatibilities with one or more plans

1 and policies related to preserving the visual quality and character of the Delta as described for
 2 Alternative 1B, Impact AES-12. Intakes 6 and 7 would be located farther south than Intakes 4 and 5,
 3 between Grand Island Road and the town of Vorden, and the operable barrier would be at the head
 4 of Old River. These features would fall under the same jurisdictions as discussed under Alternative
 5 1B, and so, overall the potential for incompatibility is the same. As described under Alternative 1B,
 6 there would be potential for the alternative to be incompatible with plans and policies related to
 7 protecting and promoting recreation opportunities in the study area (i.e., The Johnston-Baker-
 8 Andal-Boatwright Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource*
 9 *Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract*
 10 *State Recreation Areas General Plan*). In addition, with the exception of Solano County, the
 11 alternative may be incompatible with county general plan policies that protect recreation
 12 opportunities in the study area.

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

17 **15.3.3.7 Alternative 2C—Dual Conveyance with West Alignment and** 18 **Intakes W1–W5 (15,000 cfs; Operational Scenario B)**

19 For the purposes of assessment of effects on recreation, Alternative 2C is the same as Alternative 1C,
 20 with the following exception.

- 21 • The operations scenario for Alternative 2C differs from Alternative 1C (scenario B).
- 22 • An operable barrier would be placed at the head of Old River at the confluence with the San
 23 Joaquin River.

24 Table 15-14 under Alternative 1C lists the recreation sites that may be affected by Alternative 2C.

25 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private** 26 **Commercial Recreation Facility Available for Public Access as a Result of the Location of** 27 **Proposed Water Conveyance Facilities**

28 **NEPA Effects:** Alternative 2C includes locating a tunnel, ventilation/access shaft and permanent
 29 access road to the tunnel shaft on Twitchell Island, and would have the same effects as discussed
 30 under Alternative 1C, Impact REC-1. Twitchell Island is included in CDFW's Delta Island Hunting
 31 Program, a late-season hunt for pheasants and waterfowl on state-owned lands on Twitchell and
 32 Sherman Islands (California Department of Fish and Game 2009c). Both the canal alignment (tunnel
 33 portion) and a vent shaft would run underground through the hunting area (Mapbook Figure M15-
 34 3).

35 Permanently locating the tunnel, ventilation/access shaft, and permanent access road on Twitchell
 36 Island would not result in adverse effects on hunting or recreational opportunities on Twitchell
 37 Island post-construction. Temporary effects that may occur as a result of construction are noted
 38 under Impact REC-2, below. Also see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7,
 39 and Chapter 23, *Noise*, Section 23.3.3.7, for additional discussion of these topics.

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

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

6 **NEPA Effects:** Direct effects on recreation opportunities associated with construction of proposed
7 water conveyance facilities under Alternative 2C would be the same as those described under
8 Alternative 1C, Impact REC-2. Construction of Alternative 2C facilities would result in temporary
9 short-term and long-term effects related to disruption of well-established recreational opportunities
10 and experiences at recreation sites or areas in the Study area Indirect effects on recreation
11 experiences may occur as a result of impaired access, construction noise, or negative visual effects
12 associated with construction.

13 ***Other Recreation Opportunities***

14 ***On-Water Recreation***

15 Cliff's Marina is upstream of the Intake W1 construction area and Clarksburg Marina falls between
16 the construction impact area for Intake 1 and 2. Similarly, Rivers End Marina & Boat Storage is not
17 within the construction impact area for the Byron Tract Forebay and related facilities near Clifton
18 Court Forebay, and there are no recreation sites within the impact area for the operable barrier at
19 the head of Old River and San Joaquin River. Although these facilities and other marinas or fishing
20 sites fall outside of the impact area for noise, the overall recreation experience upstream or
21 downstream of these sites may fall within the noise impact area and could experience diminished
22 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
23 over the course of intake installation. Overall, construction activities associated with the proposed
24 water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work
25 would occur Monday through Friday for up to 24 hours per day. In-river construction would be
26 further limited primarily to June 1 through October 31 each year. Although dewatering would take
27 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
28 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
29 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
30 recreationists to experience a changed recreation setting.

31 ***Campgrounds***

32 Nighttime construction activities would require the use of bright lights that would negatively affect
33 nighttime views of and from the work area. This would affect any overnight camping at the
34 recreation sites and areas discussed above, although day use areas that close at sunset would not be
35 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
36 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
37 23.3.3.7, another nighttime effect on recreation would be construction noise levels that could
38 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
39 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
40 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
41 Measures NOI-1a and NOI-1b would be available to address these effects.

1 **Summary**

2 Overall, construction may occur year-round and last from 1 to 5 years at individual construction
3 sites near recreation sites or areas and in-river construction would be primarily limited to June 1
4 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.7,
5 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7, Chapter 19, *Transportation*, Section
6 19.3.3.7, and Chapter 23, *Noise*, Section 23.3.3.7 for additional detail related to waterfowl/wildlife,
7 aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1C,
8 Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas
9 within the construction impact area.

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

40 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.7, identifies a number of mitigation
41 measures that would be available to address construction-related visual effects on sensitive
42 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
43 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
44 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In

addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). DWR would also make a commitment to enhance the visual character of the area by creating new wildlife viewing sites and enhancing interest in the construction site by constructing viewing areas and displaying information about the project, which may attract people who may use the recreation facilities to the construction site as part of the visit.

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

As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.

Chapter 23, *Noise*, Section 23.3.3.7, discusses that construction noise effects could be addressed through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and implementation of a complaint/response tracking program (NOI-1b), and an environmental commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-2 would ensure continued access to existing recreation experiences. The Delta offers many

1 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
2 all of which would continue to be available for recreationists. However, due to the length of time that
3 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
4 related to temporary disruption of existing recreational activities at facilities within the impact area
5 would be adverse.

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

26 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 27 Disturbance of Nesting Birds**

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

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

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

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

37 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
38 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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 on the Sacramento River and other
22 waterways in the study area under Alternative 2C would be the same as those described for
23 Alternative 1C. Alternative 2C would also involve construction of an operable barrier at the head of
24 Old River. Construction of Alternative 2C would result in the creation of obstructions to boat passage
25 causing boat traffic delays, and impediments to boat movement. Overall, effects on temporary
26 alteration of recreational navigation would be considered adverse. Mitigation Measure TRANS-1a
27 would be available to reduce effects to marine navigation by development and implementation of
28 site-specific construction traffic management plans, including specific measures related to
29 management of barges and stipulations to notify the commercial and leisure boating communities of
30 proposed barge operations in the waterways. Additionally, BDCP proponents would contribute
31 funds for the construction of new recreation opportunities as well as for the protection of existing
32 recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP
33 proponents would also assist in funding the expansion of state recreation areas in the Delta as
34 described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for
35 the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke
36 Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the
37 Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with,
38 commencement of construction of the BDCP. This commitment serves to compensate for the loss of
39 recreational opportunities within the project area by providing a recreational opportunity

1 downstream/upstream in the same area for the same regional recreational users. These
2 commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

19 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
20 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
21 proponents would also ensure through various outreach methods that recreationists were aware of
22 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
23 Cut).

24 The barge unloading facilities would be removed after construction is complete and the operable
25 barrier will include a boat lock to permit boat passage once construction is complete. Construction
26 of the operable barrier would last for 2 years (short-term) and would not result in long-term
27 reduction of recreation opportunities. This component would not result in adverse effects on
28 recreational navigation.

29 Construction-related effects on recreational navigation in the vicinity of the intakes and barge
30 unloading facilities would last approximately 5 years (long-term) and would be considered adverse
31 because of the reduced recreation opportunity and experiences expected to exist near construction
32 activity.

33 **CEQA Conclusion:** Alternative 2C would result in significant impacts on boat passage and navigation
34 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
35 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
36 boat traffic delays, impediments to boat movement. Changes to boat passage and navigation would
37 also result in temporary impacts on wakeboarding, waterskiing, and tubing because of reduced
38 speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on marine
39 navigation by development and implementation of site-specific construction traffic management
40 plans, including specific measures related to construction and management of barges and
41 stipulations to notify the commercial and leisure boating communities of proposed construction and
42 barge operations in the waterways. While the environmental commitments would reduce impacts
43 on water-based recreation (water-skiing, wakeboarding, tubing) in these areas by creating

1 alternative recreation opportunities for those eliminated during construction, these impacts would
2 be long-term and considered significant and unavoidable.

3 Construction of the operable barrier would last for 2 years (short-term) and would not result in
4 long-term reduction of recreation opportunities. This would be a less-than-significant impact on
5 recreational navigation on Old River.

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

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

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

12 **NEPA Effects:** Effects on recreational fishing under Alternative 2C would be similar to those
13 described under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic
14 Resources*, Section 11.3.4.7, Sacramento River and Delta region fish populations would not be
15 affected by changes to localized water quality conditions, underwater noise, fish stranding or other
16 physical disturbances, or reduced habitat areas such that recreational fishing opportunities would
17 be substantially reduced during construction. BDCP environmental commitments to prevent water
18 quality effects include environmental training; implementation of stormwater pollution prevention
19 plans, erosion and sediment control plans, hazardous materials management plans, and spill
20 prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material;
21 and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). RTM
22 would be removed from RTM storage areas (which represent a substantial portion of the permanent
23 impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material
24 for habitat restoration projects, or other beneficial means of reuse identified for the material.
25 Mitigation Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse
26 effects on sport fish populations from impact pile driving. Although fish populations likely would not
27 be affected to the degree that fishing opportunities would be substantially reduced, construction
28 conditions would introduce noise and visual disturbances that would affect the recreation
29 experience for anglers.

30 Although construction noise would be temporary, and primarily be limited to Monday through
31 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
32 sites. Visual setting disruptions could distract from the recreation experience including on
33 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
34 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
35 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
36 measures would also be available to address construction-related visual effects on sensitive
37 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
38 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
39 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
40 addition, the chapter identifies measures to address longer term visual effects associated with
41 changes to the landscape/visual setting from construction and the presence of new water
42 conveyance features. These include developing and implementing a spoil/borrow and RTM area
43 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned

(AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water conveyance facilities would not degrade the fishing experience for boat and on-shore fishing locations. Additionally, anglers could move to other locations along the Sacramento River and throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access sites further removed from areas affected by construction. Therefore, construction of the proposed water conveyance facilities would not result in a long-term reduction of fishing opportunities. This effect would not be adverse.

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations such that there would be no long-term reduction of local fishing opportunities and experiences. This impact would be less than significant.

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

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

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

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

Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related Underwater Noise

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

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

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

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

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 2C 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 11.3.4.7, they are typically limited to
36 specific rivers and not the population of that species as a whole. The effect is not adverse because it
37 would not result in a substantial long-term reduction in recreational fishing opportunities

1 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 2 operation of Alternative 2C would be considered less than significant because any impacts to fish
 3 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 4 would not impact the species population of any popular sportfishing species overall.

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 **NEPA Effects:** Alternative 2C would have the same operational scenario as Alternative 2A, and as
 9 shown in Table 15-12a and Table 15-12b, Alternative 2C would result in the same changes in the
 10 frequency with which the end-of-September reservoir levels at study area reservoirs fall below
 11 levels identified as important water-dependent recreation thresholds relative to Existing Conditions
 12 (CEQA baseline) and the No Action Alternative (2060) (alternative operations contribution [impact]
 13 comparison) as discussed under Alternative 2A. Also see Chapter 3, *Description of Alternatives*,
 14 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 15 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
 16 II model and assumptions.

17 **Existing Conditions (CEQA Baseline) Compared to Alternative 2C (2060)**

18 As shown in Table 15-12a and Table 15-12b, under Alternative 2C 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 2C cannot be isolated in
 27 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative
 28 2C (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
 29 attributable to operation of Alternative 2C.

30 **No Action Alternative (2060) Compared to Alternative 2C (2060)**

31 The comparison of Alternative 2C (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,
 34 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As shown in Table 15-12a and
 35 Table 15-12b, operation of Alternative 2C would primarily result in changes in the frequency with
 36 which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake Oroville, Folsom
 37 Lake, and New Melones Reservoir would fall below levels identified as important water-dependent
 38 recreation thresholds. Changes at San Luis Reservoir show greater difference when compared to the
 39 No Action Alternative (2060) than projected for the other reservoirs.

40 In comparisons of Alternative 2C (2060) operations to No Action Alternative (2060), the CALSIM II
 41 modeling results indicate that reservoir levels under Alternative 2C operations would vary from one
 42 reservoir to another and that most, with the exception of San Luis Reservoir, would experience little
 43 to no change or would fall below the individual reservoir thresholds less frequently than under No

1 Action Alternative (2060) conditions. These changes in reservoir elevations would not adversely
 2 affect water-dependent or water-enhanced recreation at these reservoirs and at Lake Oroville and
 3 Folsom Lake, there would be fewer years in which end-of-September reservoir levels would fall
 4 below the recreation thresholds thus indicating better boating opportunities, when compared to No
 5 Action Alternative (2060) conditions. Operation of Alternative 2C would not adversely affect water-
 6 dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, recreation
 7 boating opportunity in September would be reduced more frequently under Alternative 2C (2060)
 8 (25 years) relative to No Action Alternative (2060) for the Dinosaur Point boat launch. However,
 9 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
 10 substantially change relative to the No Action Alternative (2060) (there would be three additional
 11 years below the threshold in 2060). Therefore, because the Basalt boat launch would still be
 12 available for access to the reservoir, and the change in frequency with which the recreation
 13 threshold would be exceeded is less than 10% (8 years or less), these changes in elevation at San
 14 Luis Reservoir under operation of Alternative 2C would not be adverse. Shoreline fishing would still
 15 be possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
 16 would be available. These changes would not be adverse.

17 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 18 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
 19 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
 20 Alternative 2C (2060) operations would fall below the individual reservoir thresholds either with
 21 the same or reduced frequency than under the No Action Alternative (2060). These changes in
 22 reservoir elevations would result in a less-than-significant impact on recreation opportunities and
 23 experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At
 24 Lake Oroville and Folsom Lake, because there would be fewer years in which the lake levels fall
 25 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
 26 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
 27 Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point
 28 boat launch, access to the Basalt boat launch would not substantially change. The modeled
 29 additional three years of exceeding the recreation threshold attributable to operation of Alternative
 30 2C (2060) relative to the No Action Alternative (2060) would be less than significant because it is a
 31 less than 10% change (8 years or less). Operation of Alternative 2C would not substantially affect
 32 water-dependent or water-enhanced recreation at these reservoirs. Overall, this would be a less-
 33 than-significant impact. No mitigation is required.

34 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a 35 Result of Maintenance of the Proposed Water Conveyance Facilities**

36 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
 37 structural facilities under Alternative 2C would be the same as described for Alternative 1A, Impact
 38 REC-7, and would result in periodic temporary but not substantial effects on boat passage and
 39 water-based recreational activities. Any effects would be short-term (less than 2 years) and
 40 intermittent. Other facility maintenance activities would occur on land and would not affect boat
 41 passage and navigation. Implementation of the environmental commitment to provide notification
 42 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
 43 would reduce these effects. These effects are not considered adverse.

44 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 45 short-term and intermittent and would not result in significant impacts on boat passage, navigation,

1 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
2 environmental commitment to provide notification of maintenance activities in waterways
3 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would further minimize these effects.
4 Intake maintenance impacts on recreation would be considered less than significant because
5 impacts, if any, on public access or public use of established recreation facilities would last for 2
6 years or less. Mitigation is not required.

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

9 **NEPA Effects:** Effects related to changes in opportunities for land-based recreation as a result of
10 maintenance of conveyance facilities under Alternative 2C would be the same as described for
11 Alternative 1C, Impact REC-8. Maintenance would be short-term and intermittent and would be
12 conducted within the individual facility right-of-way, which does not include any recreation facilities
13 or recreation use areas. There would be no adverse effects on recreation opportunities as a result of
14 maintenance of the proposed water conveyance facilities.

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

18 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
19 **Implementing CM2–CM21**

20 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
21 components as part of Alternative 2C could have effects related to recreational fishing that are
22 similar in nature to those discussed above for construction, and operation and maintenance of
23 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
24 effects would likely be substantially lower because the nature of the activities associated with
25 implementing the conservation components would be different—less heavy construction equipment
26 would be required and the restoration actions would be implemented over a longer time frame than
27 CM1. Potential effects from implementation of the conservation components would be dispersed
28 over a larger area and would generally involve substantially fewer construction and operation
29 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
30 components would be expected to result in long-term benefits to aquatic species. Additional
31 discussion related to the individual conservation measures is provided below.

32 With regards to fishing opportunities, effects of implementing the conservation components under
33 Alternative 2C would be similar to those described for Alternative 1A. CM2–CM21 would be
34 expected to improve fishing opportunities in the study area although some effect on fishing
35 opportunities could take place during implementation of the conservation measures. Overall,
36 implementing the proposed conservation components would be expected to provide beneficial
37 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

38 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
39 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
40 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
41 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
42 implementation stage, these measures could result in impacts on fishing opportunities by
43 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would

increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased onshore fishing opportunities. These impacts would be considered less than significant because the BDCP would include environmental commitments 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, AMMs, and CMSs*). CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly localized reductions of predatory species, overall, these measures would not result in an appreciable decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.7). Construction of facilities could have short-term impacts on the noise or visual setting and could indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B). In addition, mitigation measures and environmental commitments identified to reduce the effects of constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of the other conservation components. Because construction of the conservation measure component facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.7). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.7). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.7).

In the long term, the impact on fishing opportunities would be considered beneficial because the 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

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

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

30 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an**
31 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
32 **Underwater Noise**

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

1 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
2 **as a Result of Implementing CM2–CM21**

3 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
4 conservation components under Alternative 2C would be similar to those described for Alternative
5 1A. Implementing the conservation measures could result in an adverse effect on recreation by
6 limiting boating by reducing the extent of navigable waterways available to boaters. Once
7 implemented, the conservation measures could provide beneficial effects to recreation by expanding
8 the extent of navigable waterways available to boaters, improving and expanding boat launch
9 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

10 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
11 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
12 site. The BDCP proponents would implement environmental commitments to include a noise
13 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
14 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
15 number of mitigation measures are available to address construction-related effects on recreational
16 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
17 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
18 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
19 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
20 TRANS-1c are available to address traffic and transportation safety and access conditions of the
21 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
22 *Transportation*, Section 19.3.3.7). Mitigation Measures NOI-1a and NOI-1b are available to address
23 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
24 3, above and Chapter 23, *Noise*, Section 23.3.3.7).

25 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
26 some habitat restoration and enhancement measures and other conservation measures would limit
27 some opportunities for boating and boating-related recreation by reducing the extent of navigable
28 water available to boaters. Temporary effects would also stem from construction, which may limit
29 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
30 implementation. However, BDCP conservation measures would also lead to an enhanced boating
31 experience by expanding the extent of navigable waterways available to boaters, improving and
32 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
33 navigation. Because these measures would not be anticipated to result in a substantial long-term
34 disruption of boating activities, this impact is considered less than significant for the conservation
35 measures, with the exception of CM18, discussed further below.

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

1 address traffic and transportation safety and access conditions of the marina (see additional
2 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
3 19.3.3.7). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see
4 additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section
5 23.3.3.7). Implementation of these measures, as determined applicable to construction of this
6 facility under future site-specific environmental review, would reduce impacts on recreational
7 boating to a less-than-significant level. No additional mitigation would be required.

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-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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

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

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

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

30 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
31 **Result of Implementing CM2–CM21**

32 **NEPA Effects:** Implementing the conservation components under Alternative 2C would have similar
33 effects on upland recreation activities as those described for Alternative 1A, Impact REC-11.

34 Implementing the conservation measures could result in an adverse effect on recreation
35 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,

1 the conservation measures could adversely affect recreation by reducing the extent of upland areas
 2 suitable for hiking, nature photography, or other similar activity. However, environmental
 3 commitments would reduce these effects, and implementation of the measures would also restore
 4 or enhance new potential sites for upland recreation thereby improving the quality recreational
 5 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
 6 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
 7 mechanism and would not result in a physical change to upland areas; construction under CM18,
 8 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 9 action primarily located at boat launches and would not affect upland recreation areas and related
 10 opportunities. These measures are not discussed further in this analysis.

11 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 12 conservation measures would temporarily limit opportunities for upland recreational activities
 13 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 14 construction activities would also temporarily compromise the quality of upland recreation in and
 15 around these areas. Additionally, it is possible that current areas of upland recreation would be
 16 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 17 activities. These impacts on upland recreational opportunities would be considered less than
 18 significant because the BDCP would include environmental commitments that would require BDCP
 19 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 20 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
 21 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 22 upland recreation and the measure would improve the quality of existing recreational opportunities
 23 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 24 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 25 considered less than significant.

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

29 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 30 Alternative 2C would generally have the same potential for incompatibilities with one or more plans
 31 and policies related to protecting recreation resources in the study area as described for Alternative
 32 1C, Impact AES-12. Variation would result from construction of an operable barrier at the head of
 33 Old River. However, the operable barrier would fall under the same jurisdictions as discussed under
 34 Alternative 1C, and so, overall the potential for incompatibility is the same. As described under
 35 Alternative 1C, there would be potential for the alternative to be incompatible with plans and
 36 policies related to protecting and promoting recreation opportunities in the study area (i.e., The
 37 Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992, *Delta Protection Commission Land*
 38 *Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and*
 39 *Franks Tract State Recreation Areas General Plan*). In addition, with the exception of San Joaquin
 40 County, the alternative may be incompatible with county general plan policies that protect
 41 recreation resources in the study area.

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

15.3.3.8 Alternative 3—Dual Conveyance with Pipeline/Tunnel and Intakes 1 and 2 (6,000 cfs; Operational Scenario A)

For the purposes of assessment of effects on recreation, Alternative 3 is the same as Alternative 1A, with the following exceptions.

- Alternative 3 includes Intakes 1 and 2 only.
- Alternative 3 has a different operations scenario (6,000 cfs).

Table 15-11 lists the recreation sites and areas that may be affected by Alternative 3, except that sites or areas affected by Intakes 3, 4, or 5, would not be affected under this alternative (Clarksburg Fishing Access) (Mapbook Figure M15-1). 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: Effects on recreation as a result of the post-construction location of water conveyance facilities associated with Alternative 3 would be the same as those described under Alternative 1A, Impact REC-1, although, there would be only two intake locations under Alternative 3. 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 17.3.3.8, and Chapter 23, *Noise*, Section 23.3.3.8, 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.

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: Effects related to temporary disruption of recreation opportunities or experiences under Alternative 3 would be similar to those described for Alternative 1A; however, only two intake locations would be constructed under Alternative 3 (Intakes 1 and 2). Effects associated with Alternative 3 construction of physical components would be anticipated to be less severe relative to Alternative 1A for the Clarksburg Fishing Access and Stone Lakes NWR because Intakes 3, 4, and 5 would not be constructed. Construction of Alternative 3 intakes and water conveyance facilities would result in temporary effects related to disruption of recreational opportunities and experiences at five recreation sites in the study area during construction. Indirect effects on recreation experiences may occur as a result of 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 1 construction area and Clarksburg Marina falls between the
4 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
5 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
6 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
7 outside of the impact area for noise, the overall recreation experience upstream or downstream of
8 these sites may fall within the noise impact area and could experience diminished recreation
9 opportunities because of the elevated noise levels as well as visual setting disruptions over the
10 course of intake installation. Overall, construction activities associated with the proposed water
11 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
12 occur Monday through Friday for up to 24 hours per day. In-river construction would be further
13 limited primarily to June 1 through October 31 each year. Although dewatering would take place 7
14 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction
15 would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes,
16 resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to
17 experience 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, AES-4c, and AES-4d would be available to
23 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
24 23.3.3.8, another nighttime effect on recreation would be construction noise levels that could
25 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
26 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
27 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
28 Measures NOI-1a and 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 area, and in-river construction activities primarily would be limited to
32 June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
33 12.3.3.8, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.8, Chapter 19, *Transportation*,
34 Section 19.3.3.8, and Chapter 23, *Noise*, Section 23.3.3.8, for additional detail related to
35 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
36 to Alternative 1A, 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 implementation of *AMM20 Greater Sandhill Crane* and
7 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
8 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
9 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
10 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
11 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
12 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
13 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
14 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
15 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
16 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
17 suitable habitat conditions for covered species and native biodiversity, including benefiting
18 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
19 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
20 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
21 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
22 community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would
23 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
24 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
25 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
26 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

27 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.8, 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 23.3.3.8, 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, AMMs,*
26 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
27 to the extent possible so as to avoid effects on passive recreation activities such as walking,
28 picnicking, and 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 Alternative 3 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 that could result in loss of public use. These
40 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
41 commitments, and AMMs would reduce these construction-related impacts by implementing
42 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
43 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
44 and implement noise reduction and complaint tracking measures. However, the level of impact
45 would not be reduced to less than significant because even though mitigation measures and

1 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
2 and noise conditions that could detract from the recreation experience, due to the dispersed effects
3 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
4 of these impacts to less than significant in all instances such that there would be no reduction of
5 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
6 considered significant and unavoidable. However, the impacts related to construction of the intakes
7 would be less than significant.

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

9 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
10 1A.

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

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

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 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
8 **Result of Constructing the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Changes to boat passage and navigation on the Sacramento River and other
10 waterways in the study area, including direct effects on boat passage related to the creation of
11 obstructions and associated boat traffic delays, would be similar to those described for Alternative
12 1A; however, only two intake locations would be constructed under Alternative 3 (Intakes 1 and 2).
13 While effects associated with this alternative would therefore be anticipated to be less severe than
14 those from Alternative 1A, substantial conflicts with navigation would remain from the temporary
15 barge facilities.

16 Direct effects on boat passage and navigation on the Sacramento River would result from
17 construction of the intakes. Effects could include reduced access and delays to boat passage and
18 navigation related to the narrower available river width and temporary speed zones. However, boat
19 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
20 Water-based recreational activities such as waterskiing, wakeboarding, or tubing are also low. In
21 addition, there would be sufficient width in the channel to allow boat passage, with minor delays
22 related to construction speed zones. These effects would be long-term, lasting approximately 5 years
23 and would be considered adverse because of the reduced recreation opportunity and experiences
24 expected to exist near construction activity.

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 construction and barge operations in the waterways. Additionally, BDCP
35 proponents would contribute funds for the construction of new recreation opportunities as well as
36 for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the
37 Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in
38 the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds
39 could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-
40 Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin,
41 the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent
42 with, commencement of construction of the BDCP. This commitment serves to compensate for the
43 loss of recreational opportunities within the project area by providing a recreational opportunity

1 downstream/upstream in the same area for the same regional recreational users. These
2 commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

19 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
20 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
21 proponents would also ensure through various outreach methods that recreationists were aware of
22 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
23 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be
24 considered adverse because of the reduced recreation opportunity and experiences expected to
25 exist near construction activity.

26 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
27 construction of the intakes and temporary barge unloading facilities. Impacts would last
28 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
29 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
30 closures could impede boat movement and eliminate recreational opportunities. In waterways
31 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
32 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
33 development and implementation of site-specific construction traffic management plans, including
34 specific measures related to management of barges and stipulations to notify the commercial and
35 leisure boating communities of proposed barge operations in the waterways. While the
36 environmental commitments would reduce impacts on water-based recreation (water-skiing,
37 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
38 eliminated during construction, these impacts would be long-term and therefore considered
39 significant and unavoidable.

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

42 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
43 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:** Effects on recreational fishing under Alternative 3 would be similar to those described
4 under Alternative 1A, Impact REC-4. However, only two intake locations (Intakes 1 and 2) would be
5 constructed under Alternative 3, so effects associated with construction of physical components
6 would be anticipated to be less severe.

7 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8, Sacramento River and Delta
8 region fish populations would not be affected by changes to localized water quality conditions,
9 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
10 recreational fishing opportunities would be substantially reduced during construction. BDCP
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, RTM, and dredged material; and a barge operations plan (Appendix 3B,
15 *Environmental Commitments, AMMs, and CMSs*). Under this commitment, RTM would be removed
16 from RTM storage areas (which represent a substantial portion of the permanent impact areas) and
17 reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat
18 restoration projects, or other beneficial means of reuse identified for the material. Mitigation
19 Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport
20 fish populations from impact pile driving. Although fish populations likely would not be affected to
21 the degree that fishing opportunities would be substantially reduced, construction conditions would
22 introduce noise and visual disturbances that would affect the recreation experience for anglers.

23 Although construction noise would be temporary, and primarily be limited to Monday through
24 Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work
25 sites. Visual setting disruptions could distract from the recreation experience including on
26 weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise
27 effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to
28 the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
29 measures would also be available to address construction-related visual effects on sensitive
30 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
31 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
32 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
33 addition, the chapter identifies measures to address longer term visual effects associated with
34 changes to the landscape/visual setting from construction and the presence of new water
35 conveyance features. These include developing and implementing a spoil/borrow and RTM area
36 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
37 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
38 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
39 implementing best management practices to implement a project landscaping plan (AES-1g).
40 Overall, construction of the proposed water conveyance facilities would not degrade the fishing
41 experience for boat and on-shore fishing locations. Additionally, anglers could move to other
42 locations along the Sacramento River and throughout the Delta region and REC-2 would provide
43 anglers with alternative bank fishing access sites further removed from areas affected by
44 construction. Therefore, construction of the proposed water conveyance facilities would not result
45 in a long-term reduction of fishing opportunities. 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, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
8 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
9 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
10 such 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: Monitor Underwater Noise, and if Necessary, Use an
20 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
21 Underwater Noise**

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
25 Construction**

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

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

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

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

33 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
34 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 3 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 11.3.4.8, 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 3 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 3 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 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
11 II model and assumptions.

12 **Existing Conditions (CEQA Baseline) Compared to Alternative 3 (LLT-2060)**

13 As shown in Table 15-12a and Table 15-12b, under Alternative 3 there would be from 1 to 20
14 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
15 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
16 Trinity Lake, Shasta Lake, Folsom Lake, and San Luis Reservoir. However, as discussed under
17 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
18 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
19 the exact extent of the changes due to implementation of the action alternative using these model
20 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
21 differences between Existing Conditions and Alternative 3 cannot be isolated in this comparison.
22 Please refer to the comparison of the No Action Alternative (2060) to Alternative 3 (2060) for a
23 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
24 operation of Alternative 3.

25 **No Action Alternative (2060) Compared to Alternative 3 (2060)**

26 The comparison of Alternative 3 (2060) to the No Action Alternative (2060) condition most closely
27 represents changes in reservoir elevations that may occur as a result of operation of the alternative
28 because both conditions include sea level rise and climate change (see Appendix 5A,
29 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

30 In comparisons of Alternative 3 (2060) operations to No Action Alternative (2060), the CALSIM II
31 modeling results indicate that reservoir levels under Alternative 3 operations, with the exception of
32 San Luis Reservoir, would fall below the individual reservoir thresholds less frequently than under
33 No Action Alternative (2060) (Table 15-12a and Table 15-12b). These changes in reservoir
34 elevations would not be adverse at Trinity Lake, Shasta Lake, Oroville Reservoir, Folsom Lake, and
35 New Melones Lake and would be considered beneficial effects of Alternative 3 operations. Operation
36 of Alternative 3 would not adversely affect water-dependent or water-enhanced recreation at these
37 reservoirs. Overall, these conditions represent improved recreation conditions under operation of
38 Alternative 3 because there would be fewer years in which end-of-September reservoir levels would
39 fall below the recreation thresholds thus indicating better boating opportunities, when compared to
40 No Action Alternative (2060) conditions.

41 The modeling for San Luis Reservoir indicates there could be up to 8 additional years relative to the
42 No Action Alternative (2060) condition for which the reservoir level would fall below the reservoir
43 boating threshold for the Dinosaur Point boat launch. This is a less than 10% change and would not

1 result in a substantial reduction in recreation opportunities or experiences. In addition, at the Basalt
2 boat launch, which is accessible to elevation 340 feet, operations under Alternative 3 (2060) would
3 result in one less year for which reservoir elevations would fall below the recreation threshold
4 relative to the No Action Alternative (2060) condition. This is considered a beneficial effect on
5 recreation opportunities. Shoreline fishing would still be possible, and other recreation activities at
6 the reservoir—picnicking, biking, hiking, and fishing—would be available. These changes would not
7 be adverse.

8 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
9 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
10 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
11 Alternative 3 (2060) operations would fall below the individual reservoir thresholds less frequently
12 than under No Action Alternative (2060). These changes in reservoir and lake elevations would
13 result in a less-than-significant impact on recreation opportunities and experiences at Trinity Lake,
14 Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. Because there would be fewer
15 years in which the reservoir or lake levels fall below the recreation threshold relative to No Action
16 Alternative (2060) conditions, these impacts would be considered beneficial impacts on recreation
17 opportunities and experiences. Operation of Alternative 3 would not substantially affect water-
18 dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the modeling
19 indicates that under Alternative 3 (2060) operations relative to the No Action Alternative (2060),
20 reservoir levels could exceed the recreation threshold up to 8 additional years at the Dinosaur Point
21 boat launch, while access to the Basalt boat launch would not substantially change (one less year).
22 These are less than 10% changes and would not result in a substantial reduction in recreation
23 opportunities or experiences at this reservoir. Overall, these conditions represent improved
24 recreation conditions under operation of Alternative 3 because there would be fewer years in which
25 end-of-September reservoir levels would fall below the recreation thresholds thus indicating better
26 boating opportunities, when compared to No Action Alternative (2060) conditions. No mitigation is
27 required.

28 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a 29 Result of Maintenance of the Proposed Water Conveyance Facilities**

30 **NEPA Effects:** Effects related to changes to boat passage and navigation as a result of maintenance of
31 intake facilities under Alternative 3 would be similar to those described for Alternative 1A; however,
32 maintenance activities would only be necessary for two intake facilities under this alternative.
33 Maintenance would result in periodic temporary but not substantial effects on boat passage and
34 water-based recreational activities. Any effects would be short-term (less than 2 years) and
35 intermittent. Other facility maintenance activities would occur on land and would not affect boat
36 passage and navigation. Implementation of the environmental commitment to provide notification
37 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
38 would reduce these effects. These effects are not considered 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 maintenance activities in waterways
43 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) 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:** Changes to land-based recreation opportunities as a result of maintenance of
6 conveyance facilities under Alternative 3 would be similar to those described for Alternative 1A,
7 Impact REC-8; however, under Alternative 3, only two intake facilities would be constructed.
8 Maintenance would be short-term and intermittent and would be conducted within the individual
9 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
10 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
11 water conveyance facilities.

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

15 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
16 **Implementing CM2–CM21**

17 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
18 components as part of Alternative 3 could have effects related to recreational fishing that are similar
19 in nature to those discussed above for construction, and operation and maintenance of proposed
20 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
21 likely be substantially lower because the nature of the activities associated with implementing the
22 conservation components would be different—less heavy construction equipment would be
23 required and the restoration actions would be implemented over a longer time frame than CM1.
24 Potential effects from implementation of the conservation components would be dispersed over a
25 larger area and would generally involve substantially fewer construction and operation effects
26 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
27 components would be expected to result in long-term benefits to aquatic species. Additional
28 discussion related to the individual conservation measures is provided below.

29 With regards to fishing opportunities, effects of implementing the conservation components under
30 Alternative 3 would be similar to those described for Alternative 1A. CM2–CM21 would be expected
31 to improve fishing opportunities in the study area although some effect on fishing opportunities
32 could take place during implementation of the conservation measures. Overall, implementing the
33 proposed conservation components would be expected to provide beneficial effects on aquatic
34 habitat and fish abundance thereby improving 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,

1 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
2 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
3 fish species and although these CMs would result in highly localized reductions of predatory species,
4 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
5 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8). Construction
6 of facilities could have short-term impacts on the noise or visual setting and could indirectly affect
7 recreational fishing. 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, and dredged material; and a barge operations plan (Appendix 3B). In
13 addition, mitigation measures and environmental commitments identified to reduce the effects of
14 constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual
15 conditions, noise, transportation/access) associated with implementation of the other conservation
16 components. Because construction of the conservation measure component facilities would be less
17 intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation
18 measures and environmental commitments would reduce the construction-related impacts on
19 recreational fishing associated with the other conservation measures to a less-than-significant level.
20 Further, the individual facilities or conservation elements will undergo additional environmental
21 review and permitting which will include identification of site-specific measures to further protect
22 resources.

23 Environmental commitments that will reduce construction-related impacts on recreation include a
24 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
25 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2
26 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-
27 related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
28 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
29 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also
30 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
31 TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions
32 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
33 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.8). Mitigation Measures NOI-1a
34 and NOI-1b address construction-related noise concerns (see additional discussion under Impact
35 REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.8). Finally, should construction
36 of conservation measure facilities require pile-driving, mitigation measures to protect fish and
37 aquatic species would be implemented to reduce these impacts (see additional discussion under
38 Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.8).

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

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

44 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
45 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
20 of Pile Driving and Other Construction-Related Underwater Noise**

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

23 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an
24 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
25 Underwater Noise**

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

28 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
29 as a Result of Implementing CM2–CM21**

30 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
31 conservation measures under Alternative 3 would be similar to those described for Alternative 1A.
32 Implementing the conservation measures could result in an adverse effect on recreation by limiting
33 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
34 conservation measures could provide beneficial effects to recreation by expanding the extent of
35 navigable waterways available to boaters, improving and expanding boat launch facilities, and
36 removing nonnative vegetation that restricts or obstructs navigation.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; 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, AES-4c, and AES-4d; 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 19.3.3.8). 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 23.3.3.8).

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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.8). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.8). 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 a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

26 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
27 **Result of Implementing CM2–CM21**

28 **NEPA Effects:** Implementing the conservation components under Alternative 3 would have similar
29 impacts on upland recreation activities as those described for Alternative 1A, Impact REC-11.
30 Implementing the conservation measures could result in an adverse effect on recreation
31 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
32 the conservation measures could adversely affect recreation by reducing the extent of upland areas
33 suitable for hiking, nature photography, or other similar activity. However, environmental
34 commitments would reduce these effects, and implementation of the measures would also restore
35 or enhance new potential sites for upland recreation thereby improving the quality recreational
36 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
37 components that would not affect upland recreation opportunities. CM17 is an enforcement funding

1 mechanism and would not result in a physical change to upland areas; construction under CM18,
 2 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 3 action primarily located at boat launches and would not affect upland recreation areas and related
 4 opportunities. These measures are not discussed further in this analysis.

5 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 6 conservation measures would temporarily limit opportunities for upland recreational activities
 7 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 8 construction activities would also temporarily compromise the quality of upland recreation in and
 9 around these areas. Additionally, it is possible that current areas of upland recreation would be
 10 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 11 activities. These impacts on upland recreational opportunities would be considered less than
 12 significant because the BDCP would include environmental commitments that would require BDCP
 13 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 14 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
 15 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 16 upland recreation and the measure would improve the quality of existing recreational opportunities
 17 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 18 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 19 considered less than significant.

20 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other 21 Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations 22 Addressing Recreation Resources**

23 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 24 Alternative 3 would generally have the same potential for incompatibilities with one or more plans
 25 and policies related to protecting and promoting recreation opportunities in the study area as
 26 described for Alternative 1A, Impact AES-12. The primary difference under Alternative 3 is that only
 27 Intakes 1 and 2 would be constructed. As described under Alternative 1A, there would be potential
 28 for the alternative to be incompatible with plans and policies related to protecting and promoting
 29 recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta
 30 Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan for the*
 31 *Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas*
 32 *General Plan*). In addition, with the exception of Solano County, the alternative may be incompatible
 33 with county general plan policies that protect visual resources in the study area.

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

38 **15.3.3.9 Alternative 4—Dual Conveyance with Modified Pipeline/Tunnel 39 and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)**

40 Alternative 4 includes the construction of three north Delta intake facilities (Intakes 2, 3, and 5)
 41 between Clarksburg and Walnut Grove.) An operable barrier would be placed at the head of Old
 42 River at the confluence with the San Joaquin River. Table 15-15 lists the recreation sites and areas
 43 that may be affected by Alternative 4. Clifton Court Forebay and Cosumnes River Preserve are the

1 only recreation facilities that fall within the construction footprint (Mapbook Figure M15-4). Specific
 2 effects on recreation areas or sites are discussed below.

3 **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; Temporary Work Area; Transmission Lines; Geotechnical Exploration	Noise and visual disturbances	Ongoing; up to 10.5 years (long term)
Clarksburg Boat Launch (Fishing Access)	Intake; Intake Work Area; Geotechnical Exploration	Noise and visual disturbances	Ongoing; up to 7.5 years (long term)
Cosumnes River Preserve	Safe Haven Work Areas; Tunnel Work Areas; Geotechnical Exploration; Shaft Locations; Reusable Tunnel Material Area; Transmission Line; Temporary Access Roads; Permanent Access Road	Surface impact; Noise and visual disturbances	Ongoing; up to 12.5 years (long term)
Wimpy's Marina	Geotechnical Exploration	Noise and visual disturbances	Up to 2.5 years (long term)
Delta Meadows	Forebay and Spillway; Geotechnical Exploration; Permanent Access Road; Barge Unloading Facility	Noise and visual disturbances	Ongoing; up to 7.5 years (long term)
Bullfrog Landing Marina	Temporary Access Road	Noise and visual disturbances	Up to 11 years (long term)
Clifton Court Forebay	Siphon; Trenchless Crossing; Canals; Control Structure; Forebay; Forebay Embankment Area; Forebay Overflow Structure; New Forebay; Power Transmission Relocation; Reusable Tunnel Material Area; Shaft Location; Barge Unloading Facility; Canal Work Area; Control Structure Work Area; Forebay Dredging Area; Forebay Outlet Structure; Geotechnical Exploration Zone; Tunnel Muck Conveyor Facility; Electrical Substation; Facility Access Road; Gravity-Bypass Channel Spillway; Intake; MCC/Electrical Building; Office Trailer; Piping; Pumping Plant; Rebar Cage Assembly Area; Staging Area; Storage/Detention Tank; Surge Shaft; Water Treatment Facility	Surface impact; Noise and visual disturbances	Ongoing; up to 13 years (long term)
Lazy M Marina	Permanent Access Road	Noise and visual disturbances	Ongoing; up to 11 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; Air quality construction equipment and scheduling assumptions as described in Appendix 22B, *Air Quality Assumptions*.

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 and Clifton Court Forebay (Table
6 15-15 and Mapbook Figure M15-4). Additionally, proposed RTM areas near Twin Cities Road could
7 interfere with recreational-related activities on DWR-owned parcels that currently host a water ski
8 school and a venue for hound races.

9 An RTM area would be built to the north of Cosumnes River Preserve, southeast of the intermediate
10 forebay. An east-west permanent transmission line would be constructed adjacent to the northern
11 boundary of the preserve along Lambert Road, where CDFW manages the lands as an ecological
12 reserve. There is no public access permitted within this part of the preserve; therefore, the
13 placement of the transmission line would not displace any recreational facilities. A tunnel running
14 north to south would be located northeast of Walnut Grove from the intermediate forebay south
15 through Staten Island in land managed by The Nature Conservancy. Tunnel construction would be
16 underground and would not permanently displace any recreation facilities or lands within the
17 preserve. No recreational opportunities would be permanently displaced, disrupted, or relocated by
18 placement of the tunnel at this location. Two sets of tunnel shafts with permanent access roads,
19 would be built on Staten Island. Most recreation takes place near the visitor's center near Middle
20 Slough, approximately 1.5 miles east of the construction footprint. Recreationists use North Staten
21 Island Road for wildlife viewing, but there are no formal recreation facilities in the western areas of
22 the preserve. Temporary features would be returned to preconstruction conditions. The placement
23 of shaft locations and permanent access roads would cause permanent surface impacts and would
24 permanently displace portions of the preserve that may be used by recreationists. However, they
25 would not result in the permanent loss or closure of a facility or activity because visitors would still
26 be able to access North Staten Island Road for wildlife viewing. While recreational activities could be
27 disrupted at ponds used for water ski instruction and hound racing, access to these parcels is subject
28 to lease agreements with DWR. Due to the nature of these lease agreements, these activities could
29 not reasonably be expected to continue for the long-term with any definitiveness, therefore, these
30 facilities would not be considered long-term and/or well-established recreational facilities.
31 Additionally, regardless of any disruption in these activities, there would continue to be extensive
32 opportunities for waterskiing throughout the Delta. BDCP proponents would also contribute funds
33 for the construction of new recreation opportunities, including hunting opportunities, as described
34 in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, Sections 3B.3.2 and 3B.3.3. Therefore,
35 the location of the proposed water conveyance facilities would not result in the permanent
36 displacement of existing well-established public use or private commercial recreation facilities, and
37 would not cause adverse effects.

38 In the Clifton Court Forebay, combined pumping plant facilities, a permanent siphon, canals, a new
39 forebay and new embankment areas, control structures, shaft locations, power transmission lines, a
40 gravity-bypass spillway, a new forebay, and a forebay overflow structure would be built. A
41 permanent reusable tunnel material area would be built northwest of Italian Slough, adjacent to the
42 Clifton Court Forebay recreation area, and is not anticipated to hinder recreation opportunities.
43 Permanent transmission lines, and a dredging area would also be built. While RTM areas are
44 considered permanent surface impacts for the purposes of impact analysis, it is anticipated that the
45 RTM would be removed from these areas and reused, as appropriate, as bulking material for levee
46 maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse

1 identified for the material, as described in Appendix 3B, *Environmental Commitments, AMMs, and*
2 *CMs*. There are no formal recreation facilities at Clifton Court Forebay, although well-established
3 recreation, mostly fishing and hunting, takes place at the southern end of the forebay along the
4 embankment. This access would be lost during construction, but once new embankments are built,
5 recreation could again occur. The post-construction location of the water conveyance facilities
6 would not result in permanent displacement of well-established recreation facilities available for
7 public access. Therefore, there would be no adverse effects. Effects on recreation related to
8 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
9 Chapter 17, Aesthetics and Visual Resources, Section 17.3.3.9, and Chapter 23, Noise, Section
10 23.3.3.9, for additional discussion of these topics.

11 **CEQA Conclusion:** The alternative would include the placement of permanent shaft locations,
12 transmission lines, and access roads that would cause permanent surface impacts to Cosumnes
13 River Preserve and would displace portions of the preserve that may be used by recreationists.
14 Permanent noise and visual impacts would occur from a RTM areas adjacent to Cosumnes River
15 Preserve. However, these would not result in the permanent loss or closure of a facility or activity
16 because visitors would still be able to access North Staten Island Road for wildlife viewing. While
17 recreational activities could be disrupted at ponds used for water ski instruction and hound racing,
18 access to these parcels is subject to lease agreements with DWR. Due to the nature of these lease
19 agreements, these activities could not reasonably be expected to continue for the long-term with any
20 definitiveness, therefore, these facilities would not be considered long-term and/or well-established
21 recreational facilities. Additionally, regardless of any disruption in these activities, there would
22 continue to be extensive opportunities for waterskiing throughout the Delta. BDCP proponents
23 would also contribute funds for the construction of new recreation opportunities, including hunting
24 opportunities, as described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, Sections
25 3B.3.2 and 3B.3.3. In the Clifton Court Forebay, combined pumping plant facilities, a permanent
26 siphon, canals, a new forebay and new embankment areas, a control structure, shaft locations, a
27 forebay overflow structure, and a reusable tunnel material conveyor and facility would be built. A
28 permanent reusable tunnel material area, along with a temporary fuel station and temporary
29 concrete batch plant would be built northwest of Italian Slough, adjacent to the Clifton Court
30 Forebay recreation area, are not anticipated to hinder recreation opportunities. There are no formal
31 recreation facilities at Clifton Court Forebay, although well-established recreation, mostly fishing
32 and hunting, takes place at the southern end of the forebay along the embankment. This access
33 would be lost during construction, but once new embankments are built, recreation could again
34 occur. The post-construction location of the water conveyance facilities would not result in
35 permanent displacement of well-established recreation facilities available for public access.
36 Therefore, this alternative would not result in the permanent displacement of well-established
37 public use or private commercial recreation facilities available for public access. Impacts are
38 considered less than significant. No mitigation is required.

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:** Two recreation sites, Clifton Court Forebay and Cosumnes River Preserve, are within
42 the construction footprint. A total of six recreation sites or areas are within the 1,200 to 1,400-foot
43 indirect impact area associated with aboveground construction of the proposed water conveyance
44 facilities (CM1) (see Chapter 23, *Noise*, Section 23.3.3.9). The effects that could occur at each
45 potentially affected recreation site are discussed below. Potential indirect effects on recreation

1 include access, construction noise, and changes in the visual character of the area surrounding the
2 recreation sites, as well as reduced wildlife-related recreational opportunities due to nearby noise
3 effects. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9, Chapter 17, *Aesthetics*
4 and *Visual Resources*, Section 17.3.3.9, Chapter 19, *Transportation*, Section 19.3.3.9, and Chapter 23,
5 *Noise*, Section 23.3.3.9, for additional detail related to waterfowl/wildlife, aesthetics/visual
6 resources, transportation, and noise, respectively.

7 **Stone Lakes National Wildlife Refuge**

8 Private and public use areas within the Stone Lakes NWR fall within the indirect impact area. No
9 public recreation facilities are located on the privately held lands within the NWR boundary (U.S.
10 Fish and Wildlife Service 2007a). The public use areas of Stone Lakes NWR include the Beach Lake
11 and North Stone Lake Units of the NWR.

12 The northern section of Stone Lakes NWR is adjacent to Intakes 2 and 3, and the southern portion is
13 approximately 1 mile from Intake 5. Recreation does occur in the northernmost section of Stone
14 Lakes NWR, which would be east of a temporary work area and a RTM area associated with Intake 2
15 and could cause noise and visual disturbances to recreationists. Geotechnical exploration would
16 occur along the tunnel corridor, to the east of Stone Lakes NWR, for up to 2.5 years. Exploration
17 methods would include soil borings and conventional piezocones and seismic cones, as well as
18 sampling for gas within soils and groundwater at selected locations. Construction of the intakes and
19 temporary work areas could also cause noise and visual disturbances to recreationists. Construction
20 of the proposed 230 kV and 69 kV temporary transmission lines would be constructed to the west
21 and south of the North Stone Lake Unit, and could cause noise and visual disturbances to visitors in
22 the refuge for up to 1.5 years. Access to the refuge would be preserved, but because of the proximity
23 of the alignment and associated construction work areas and borrow/spoil areas, there could be
24 effects on wildlife viewing and environmental education opportunities within the Stone Lakes NWR.
25 Because construction would primarily occur Monday through Friday, year-round, there could be
26 temporary effects on wildlife viewing and some environmental education opportunities that depend
27 on the presence of wildlife. Construction related to intakes could take up to 7 years. Hiking,
28 interpretation, and some environmental education opportunities would still be feasible within the
29 NWR; however, refuge visitors would experience a long-term reduction of recreation opportunities
30 and experiences due to construction noise and visual disruptions, resulting in reduced opportunities
31 for wildlife viewing. However, mitigation measures, environmental commitments, and conservation
32 measures would provide several benefits to waterfowl habitat and recreational opportunities. As
33 discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9, mitigation would be
34 available to address effects on nesting birds, waterfowl populations, and greater sandhill crane near
35 construction areas. In addition, over the longer term of the action alternatives, implementation of
36 CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed
37 wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective
38 MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity,
39 including benefiting migratory waterfowl. Under CM3, the protection of cultivated lands will also
40 benefit sandhill crane and other species. Implementation of CM11 would provide beneficial effects
41 on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands
42 in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed
43 wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*).
44 The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4
45 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat
46 launch facility within the footprint of the North Delta diversion facilities. Permitted activities will

1 include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use,
2 hunting, fishing, and boating, depending on the location. Also, as discussed in Appendix 3B,
3 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
4 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
5 Materials could be reused for purposes such as flood protection, habitat restoration, and subsidence
6 reversal.

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

8 The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the
9 proposed Intake 3 site. Access to the Clarksburg Boat Launch would be maintained using County
10 Road E9 (also referred to as County Highway [CH] or Old River Road); access would not be expected
11 to be a concern because most of the construction activity would take place on the east side of the
12 Sacramento River. On-water access to the fishing site, as well as use of the boat ramp, would not be
13 affected by construction. Indirect construction noise effects on recreation in the vicinity of the
14 Clarksburg Boat Launch would last about 5 years with construction of the intake and related
15 facilities primarily ongoing Monday through Friday for up to 24 hours each day. This would be
16 considered a long-term adverse effect. Geotechnical exploration would occur along the tunnel
17 corridor, to the east of Clarksburg Boat Launch, for up to 2.5 years. In addition, because of the
18 relatively high groundwater level at all intake locations and pumping plant sites, dewatering would
19 be necessary to provide a dry workspace. As discussed in Chapter 3, *Description of Alternatives*,
20 Section 3.6.1, dewatering would take place 7 days per week and 24 hours per day and would be
21 initiated 1–4 weeks prior to excavation. Dewatering would continue until excavation is completed
22 and the construction site is protected from areas with high groundwater levels. Construction of the
23 intake in this area would be long term and would also substantially alter the recreation setting for
24 views from the boat launch/fishing access site. Therefore, constructing the proposed water
25 conveyance facilities would result in long-term reduction of recreational opportunities or
26 experiences.

27 ***Cosumnes River Preserve (Private Lands and CDFW Ecological Reserve)***

28 Cosumnes River Preserve provides opportunities for limited fishing and hunting, hiking, paddling,
29 wildlife viewing, and environmental education. Because public access is concentrated around the
30 visitor center which is located approximately 1.5 miles east of the alternative alignment, a majority
31 of public recreation activities would likely take place outside of the construction impact areas. As
32 discussed in Impact REC-1, a proposed temporary 230-kV transmission line would be constructed to
33 run east-west, adjacent to the northern boundaries of the two preserve areas along Lambert Road,
34 where CDFW manages the lands as an ecological reserve. There is no public access permitted within
35 this part of the preserve. A RTM area would be built northwest of Mokelumne City, almost 1 mile
36 east of the intermediate forebay. It would be nearly adjacent to the portion of the preserve run by
37 The Nature Conservancy that lies south of Twin Cities Road and east of the Mokelumne River.
38 Construction of the RTM area could cause noise and visual disturbances to this portion of the
39 preserve for up to 6 years. A safe haven work area and temporary access road would be built
40 northeast of Walnut Grove. Geotechnical exploration would occur along the tunnel corridor for
41 approximately 2.5 years. A tunnel would also run from the intermediate forebay, south through
42 Staten Island in land managed by The Nature Conservancy. Tunnel construction would be
43 underground and would not permanently displace any recreation facilities or lands within the
44 preserve. No recreational opportunities would be permanently displaced, disrupted, or relocated by
45 placement of the tunnel at this location. Staten Island, where a portion of Cosumnes River Preserve

is located and managed by The Nature Conservancy, is a popular birdwatching location. Table 15-15 and Mapbook Figure M15-4 identify the project features that would be constructed near or through preserve lands. Two safe haven work areas with temporary access roads, and two sets of tunnel shafts with temporary work areas and permanent access roads, would be built on Staten Island. The Staten Island portion of the preserve does not provide formal recreation facilities; however, visitors do access these areas along North Staten Island Road for wildlife viewing. During construction, access to the preserve along North Staten Island Road could be affected. Construction primarily would take place Monday through Friday, for up to 24 hours per day with dewatering 7 days per week and 24 hours per day. Construction noise and views could affect wildlife viewing and environmental education opportunities for docent-guided tours. Construction of the proposed water conveyance facilities would slightly reduce the amount of area available for wildlife viewing in Cosumnes River Preserve, resulting in a long-term reduction of recreation opportunities and experiences. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.9, mitigation would be available to address effects on nesting birds and waterfowl populations and greater sandhill crane near construction areas. In addition, over the longer term of the action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity, including benefiting migratory waterfowl. Implementation of these conservation measures would increase wildlife viewing opportunities. Under CM3, the protection of cultivated lands will also benefit sandhill crane and other species. As described above in the *Stone Lakes National Wildlife Refuge* section, implementation of CM11 would provide beneficial effects on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

Wimpy's Marina

Wimpy's Marina is a private boating facility located on the south fork of the Mokelumne River southeast of Walnut Grove. It contains 22 berths and a ramp, along with RV sites, a bait shop, and public fishing access. The marina is within the noise and visual disturbance impact area, and is across the river from a tunnel corridor. Geotechnical exploration would occur along the tunnel corridor for approximately 2.5 years. Access to the marina from West Walnut Grove Road will be maintained during geotechnical exploration and tunnel construction. On-water access to the marina and use of the marina's boating facilities would not be affected by geotechnical exploration or tunnel/pipeline construction activities. During construction it is possible that marina users would be disturbed by noise and visual disruptions related to the construction activities. Anglers on the river near the marina and across from the construction area would also potentially experience noise and visual disturbances from construction.

Delta Meadows

According to the California Department of Parks and Recreation website at the time of the Draft EIR/EIS was prepared, 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. The intermediate forebay and spillway are adjacent to the northern corner of Delta Meadows River Park, across Twin Cities Road.

1 Geotechnical exploration would also occur along the tunnel corridor for approximately 2.5 years.
2 Construction primarily would take place Monday through Friday, for up to 24 hours per day.
3 Construction noise, as well as operation and maintenance of the intermediate forebay and spillway,
4 could adversely affect wildlife viewing and environmental education opportunities for potential
5 visitors.

6 ***Bullfrog Landing Marina***

7 Containing 43 berths, Bullfrog Landing Marina is on Middle River within the noise and visual
8 disturbance impact area surrounding the tunnel/pipeline alignment across Bacon Island. A
9 temporary access road would wrap around the southern and eastern sides of Bacon Island, and will
10 be as close as approximately 900 feet to the marina. The marina is approximately 4,000 feet west of
11 a safe haven work area used for tunnel construction, which is outside of the approximate 1,400-foot
12 noise and visual buffer; therefore, noise and visual disturbances from the save haven work area are
13 not expected to occur. On-water access to the marina and use of the marina's boating facilities would
14 not be affected by tunnel construction activities. Boating opportunities would still be feasible at the
15 marina during construction of the tunnel and use of the safe haven work area. During construction it
16 is possible that marina users would be disturbed by noise and visual disruptions related to the
17 temporary access road construction activities, which could last up to 11 years, resulting in a long-
18 term adverse effect. Anglers on the river between the marina and the construction area would also
19 experience noise and visual disturbances from construction.

20 ***Clifton Court Forebay***

21 Clifton Court Forebay offers public fishing and hunting access from Lindeman Road on the south
22 side of the forebay. There are no recreation facilities at the forebay; motorized boating, camping, and
23 swimming are not allowed. Most fishing and hunting use at the forebay likely occurs along the west
24 and south shores of the forebay, although some visitors walk or ride a bike around the forebay to
25 reach other fishing and hunting locations. Visitors to these areas will experience a long-term
26 reduction of recreational opportunities and experiences as a result of the proposed water
27 conveyance facilities.

28 Access to the forebay would be maintained using Clifton Court Road or a detour. Construction of the
29 combined pumping plants and associated facilities, Clifton Court Forebay expansion, control
30 structures, shafts, work areas, reusable tunnel material areas, forebay dredging area, and
31 installation of transmission lines would take up to 11 years. Geotechnical exploration would also
32 occur along the tunnel corridor for approximately 2.5 years. Construction would primarily occur
33 Monday through Friday for up to 24 hours per day. The opportunities for visitors who use the
34 southern part of the forebay would be affected the most because of its proximity to the proposed
35 construction areas. While the forebay is expanded and the new embankment is built, recreational
36 visitors would lose access to the existing bank recreational activities. Construction would also cause
37 noise and visual disturbances which would could deter fish and wildlife and result in reduced
38 opportunities for fishing or hunting, as well as adversely affect the ambient recreation setting and
39 recreation experience. Construction during waterfowl hunting season would affect recreational
40 hunting in the area to the degree that use is temporarily degraded. As discussed in Chapter 12,
41 *Terrestrial Biological Resources*, Section 12.3.3.9, mitigation would be available to address the effect
42 on nesting birds and waterfowl populations near construction areas. In addition, over the longer
43 term of the action alternatives, implementation of CM3 and CM11 will result in protection and
44 enhancement of at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4,

1 *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat
2 conditions for covered species and native biodiversity, including benefiting migratory waterfowl.
3 Under CM3, the protection of cultivated lands will also benefit sandhill crane and other species. As
4 described above in the *Stone Lakes National Wildlife Refuge* section, 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. Permitted activities will include
7 hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting,
8 fishing, and boating.

9 ***Lazy M Marina***

10 Lazy M Marina provides about 35 berths, substantial dry storage, and a boat ramp. A permanent
11 access road that would follow the same alignment as the existing Clifton Court Road would be
12 located about 300 feet from this marina. It is anticipated that the existing road would be upgraded
13 and extended, which could include widening the existing road, or resurfacing or reconstructing it to
14 handle larger load volumes and weight. Construction, and equipment and delivery of Clifton Court
15 Forebay and the combined pumping plants would occur up to 11 years.

16 ***Other Recreation Opportunities***

17 *On-Water Recreation*

18 There are no recreation sites within the impact area for the operable barrier at the head of Old River
19 and San Joaquin River. Although these facilities and other marinas or fishing sites fall outside of the
20 construction impact area for noise, the overall recreation experience upstream or downstream of
21 these sites may fall within the noise impact area and could experience diminished recreation
22 opportunities because of the elevated noise levels as well as visual setting disruptions over the
23 course of construction. Overall, construction activities associated with the proposed water
24 conveyance facilities, and geotechnical exploration, would range from 2.5 years to up to 13.5 years
25 depending on the site. Work would occur Monday through Friday for up to 24 hours per day. In-
26 river construction would be further limited primarily to June 1 through October 31 each year.
27 Although dewatering would take place 7 days a week for 24 hours per day, it would not result in
28 adverse noise effects. Weekday construction would reduce the amount of fish and other wildlife in
29 recreation areas in the vicinity of the intakes, resulting in decreased recreation opportunities related
30 to wildlife and fish, causing recreationists to experience a changed recreation setting.

31 *Campgrounds*

32 Nighttime construction activities would require the use of bright lights that would negatively affect
33 nighttime views of and from the work area. This would affect any overnight camping at the
34 recreation sites and areas discussed above, although day use areas that close at sunset would not be
35 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
36 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
37 23.3.3.9, another nighttime effect on recreation would be construction noise levels that could
38 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
39 areas. Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-
40 1a and NOI-1b would be available to address these effects.

1 **Summary**

2 Construction of Alternative 4 intakes and water conveyance facilities would result in disruption to
3 recreational opportunities. Indirect effects on recreation experiences may occur as a result of
4 impaired access, construction noise, or negative visual effects associated with construction. Overall,
5 construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at
6 individual construction sites near recreation sites or areas and in-river construction would be
7 primarily limited to June 1 through October 31 each year, which would result in a long-term
8 reduction of recreational opportunities or experiences.

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

41 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.9, identifies a number of mitigation
42 measures that would be available to address construction-related visual effects on sensitive
43 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
44 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
45 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
46 addition, the chapter identifies measures to address longer term visual effects associated with

1 changes to the landscape/visual setting from construction and the presence of new water
2 conveyance features. These include developing and implementing a spoil/borrow and RTM area
3 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
4 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
5 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
6 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
7 would also make a commitment to enhance the visual character of the area by creating new wildlife
8 viewing sites and enhancing interest in the construction site by constructing viewing areas and
9 displaying information about the project, which may attract people who may use the recreation
10 facilities to the construction site as part of the visit.

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

22 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
23 involve preparation of site-specific construction traffic management plans that would address
24 potential public access routes and provide construction information notification to local residents
25 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
26 of access to affected recreation areas as an environmental commitment. Where construction
27 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
28 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
29 construction sites. These would be designed to be safe, pleasant and would integrate with
30 opportunities to view the construction site as an additional area of interest. These physical facilities
31 would be combined with public information, including sidewalk wayfinding information that would
32 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
33 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
34 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
35 congested roadway segments, although this mitigation measure (TRANS-1c) would require
36 cooperation from the affected jurisdictions, and therefore there is no way to guarantee its
37 effectiveness.

38 Chapter 23, *Noise*, Section 23.3.3.9, discusses that construction noise effects could be addressed
39 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
40 implementation of a complaint/response tracking program (NOI-1b), and an environmental
41 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
42 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
43 to the extent possible so as to avoid effects on passive recreation activities such as walking,
44 picnicking, and viewing the aesthetic amenities of the area.

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

CEQA Conclusion: Construction of the Alternative 4 intakes and related water conveyance facilities would result in permanent and long-term (i.e., lasting over 2 years) impacts on well-established recreational opportunities and experiences in the study area because of access, noise, and visual setting disruptions that could result in loss of public use. These impacts would occur year-round. A number of environmental commitments made by DWR would lessen these impacts (conduct environmental training for field management and construction personnel on important timing windows for covered species mating/nesting/fledging which would lessen some of the impacts on wildlife viewing; to store, process and reuse RTM in a way that would benefit recreational activities; provide and publicize alternative modes of access to affected recreation areas; implement a noise abatement plan) (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) as would AMM20 and AMM31. Due to the size of the Plan Area and the duration of construction, this impact would be significant. Mitigation measures would further reduce some construction-related impacts by implementing measures to protect or compensate for effects on existing recreation opportunities (Mitigation Measure REC-2); effects on wildlife habitat and species (Mitigation Measure BIO-75); minimize the extent of changes to the visual setting (Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4a), including nighttime light sources (Mitigation Measures AES-4b, AES-4c, and AES-4d); manage construction-related traffic (TRANS-1a, TRANS-1b, TRANS-1c); and implement noise reduction and complaint tracking measures (NOI-1a and NOI-1b). Mitigation measures and environmental commitments would reduce the impacts on wildlife, visual setting, transportation, and noise conditions that could otherwise detract from the recreation experience. However, due to the dispersed effects on the recreation experience across the Delta, it is not certain that mitigation would reduce the level of these impacts to less than significant in all instances. Therefore, as a whole, these impacts are considered significant and unavoidable. However, the impacts related to construction of the intakes would be less than significant.

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

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

1 directing anglers to the formal sites. Upgrading the existing fishing access sites will be
2 completed prior to beginning construction of the intakes.

3 Where intake locations would remove existing public access to the Sacramento River for
4 recreational purposes, as part of design of the intakes, the BDCP proponents will ensure that
5 public access to the Sacramento River, including fishing access, will be incorporated into the
6 design of the intakes. The access sites will be placed a reasonable distance from the intake to
7 ensure the safety of recreationists and to compensate for the loss that would occur as a result of
8 constructing the intakes.

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

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

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

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

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

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

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

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

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

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

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

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

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

35 Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*,
36 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-4a: Limit Construction to Daylight Hours within 0.5 Mile of**
6 **Residents**

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

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 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:** Changes to boat passage and navigation on the Sacramento River and other
 7 waterways in the study area, including direct effects on boat passage related to the creation of
 8 obstructions and associated boat traffic delays, would occur during construction of Alternative 4.
 9 Construction of the three intakes would involve installation of cofferdams in the waterways and the
 10 use of barges, barge-mounted cranes, or other large waterborne equipment, which could affect
 11 navigation for recreationists. Construction of the temporary barge unloading facilities and siphons
 12 would also affect navigation for recreationists. Alternative 4 also would involve construction and
 13 operation of an operable barrier at the head of Old River (Mapbook Figure M15-4).

14 **Intakes**

15 To allow for construction of intakes, cofferdams would be constructed within the river channel. The
 16 cofferdams would vary in size according to intake location, but would range from 740 to 2,440 feet
 17 in length and would extend into the river channel up to 85 feet, depending on location. This would
 18 include a 25-foot buffer zone around each cofferdam. Although boats would be unable to use the
 19 portion of the waterway where construction was occurring, the river in the vicinity of the intake
 20 construction sites would remain open to boat passage at all times. The river is approximately 500–
 21 700 feet wide near the proposed intakes, which would leave most of the channel width
 22 (approximately 380–580 feet) open to boat passage, providing ample room for the boat traffic
 23 observed to occur in the area to pass without difficulty and minimizing possible traffic congestion.

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

36 Direct effects on boat passage and navigation on the Sacramento River would result from
 37 construction of the intakes. Effects could include reduced access and delays to boat passage and
 38 navigation related to the narrower available river width and temporary reduced-speed zones.
 39 However, boat passage volume along the corridor of the Sacramento River where intakes are
 40 proposed is low. Water-based recreational activities such as waterskiing, wakeboarding, tubing, or
 41 fishing are also low, but effectively would be eliminated in the vicinity of the intakes for the duration
 42 of construction (up to 4 years at each intake location). However, implementation of separate, non-
 43 environmental commitments as set forth in Appendix 3B, *Environmental Commitments, AMMs, and*

1 *CMS*, relating to the enhancement of recreational access and control of aquatic weeds in the Delta
2 would reduce these effects. Although there is sufficient width in the channel to allow boat passage,
3 boaters could experience minor delays related to construction speed zones. However, this could still
4 result in a reduction of recreational navigation opportunities would be considered adverse because,
5 although temporary, the effects would be long-term, lasting more than 2 years.

6 **Floating Fish Barriers**

7 CM16 involves nonphysical fish barriers (BioAcoustic Fish Fences [BAFFs]) at the junction of
8 channels with low survival of outmigrating juvenile salmonids to deter fish from entering these
9 channels. In addition to these BAFF system evaluations of what may be considered true nonphysical
10 barriers, studies are also underway to determine the effectiveness of a floating fish guidance
11 structure. This structure uses steel panels suspended from floats to change water currents so that
12 fish are guided towards the center of the river (away from other channel entrances), but does not
13 substantially change the amount of water entering the channels. BAFF structures may be
14 appropriate at the Georgiana Slough, Head of Old River, and Delta Cross Channel sites, while floating
15 structures may be suitable at the Turner Cut and Columbia Cut sites. Installation of these barriers
16 would not block boating access but would restrict the channels by extending into the channel by up
17 to approximately 200 feet. Nonphysical barriers of the BAFF type would be removed and stored
18 offsite while not in operation, but floating fish guidance structures do not require removal and
19 would be left in place. This would cause impacts to boaters in these channels. Mitigation Measure
20 TRANS-1a would be available to reduce impacts, but due to a potentially permanent duration,
21 impacts would remain significant and unavoidable.

22 **Siphons**

23 Construction of the two siphons associated with Alternative 4 would not result in a long-term
24 reduction in recreational navigation opportunities. However, temporary obstruction of boat passage
25 may cause boat traffic delays or navigation hazards to boaters. The siphons would cross one existing
26 water facility and one highway and rail line:

- 27
 - South Clifton Court Forebay Outlet
 - Byron Highway/Southern Pacific Railroad (SPRR)

29 The Byron Highway/SPRR siphon would not be built in an area where recreation occurs, so it would
30 not cause a long-term reduction in recreational navigation opportunities.

31 The South Clifton Court Forebay Outlet siphon would lie underneath the existing Clifton Court
32 Forebay outlet. This crossing is a constructed waterway that connects the existing Clifton Court
33 Forebay to the Approach Canal to Banks Pumping Plant. It would not cause a long-term reduction in
34 recreational navigation opportunities.

35 Culvert siphons would be constructed using cofferdams and open cut-and-cover construction
36 methods with conventional cast-in-place concrete structures. In each phase, a temporary cofferdam
37 surrounding the work area would be installed that would occupy as much as one-half the width of
38 the waterway.

39 The culvert siphon at the South Clifton Court Forebay Outlet would be constructed in two phases,
40 each phase lasting approximately one year. The first phase would entail the installation of a
41 temporary cofferdam for half of the total length of the culvert siphon to be constructed inside the
42 cofferdam. During the second phase, the cofferdam would be reinstalled across the other half of the

1 siphon, and the remainder of the structure would be constructed and backfilled. Construction of the
2 cofferdams would occur from August to November.

3 ***Barges and Temporary Barge Unloading Facilities***

4 Construction of the CM1 water conveyance facilities would require the use of barges in water, often
5 to hold construction equipment, such as cranes. Construction would take place in phases, and the
6 number and duration of barges would vary by location. Approximately eight barges are expected per
7 day for construction of CM1 for up to 5 years. The majority of barge-related transportation would be
8 used to carry precast tunnel segment liners to temporary barge unloading facilities closest to the
9 launch shafts. Effects on recreation in the vicinity of the barges would be considered a long-term
10 effect. Alternative 4 also includes seven barge unloading facilities to be built on or near the tunnel
11 alignment at riverbank locations about 4–9 miles apart (Mapbook Figure M15-4). Temporary barge
12 unloading facilities would be built on the following waterways: Snodgrass Slough, Potato Slough, San
13 Joaquin River, Middle River, Connection Slough, Old River, and the West Canal. The temporary barge
14 unloading facilities would be used to transfer construction equipment and materials to and from
15 construction sites and would be removed after construction was completed.

16 Use of barges for water facilities construction and construction of the temporary barge unloading
17 facilities may require partial channel closures and use of equipment within the waterways.
18 Temporary in-water construction zone restrictions would be put in place around barges and barge
19 facilities, including a speed-restricted zone extending upstream and downstream of construction
20 within the waterway to reduce wake and maintain a safe work area in the vicinity of the
21 construction activities. Site-specific safety features, including determination of the speed-restriction
22 zone, and notification procedures would be developed under the Mitigation Measure TRANS-1a that
23 involves the BDCP proponents developing and implementing site-specific construction traffic
24 management plans, including waterway navigation elements. Within the speed-restricted zones
25 high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.
26 Specific effects that could occur at each barge unloading facility site are discussed below. Effects on
27 recreation in the vicinity of the barge unloading facility sites would last approximately 5 years and
28 would be considered a long-term effect. Construction would primarily occur Monday through Friday
29 and last for up to 24 hours per day. In-river construction primarily would be limited to June 1
30 through October 31 each year. However, the barges would remain in place for the duration of the
31 construction period and still present a temporary barrier to boats and related recreation. Post-
32 construction, temporary barges would be removed and the ability to navigate rivers and channels
33 would return to previous conditions.

34 ***Sacramento River***

35 The Sacramento River barge unloading facility would be built almost 3 miles northeast of Walnut
36 Grove on the Sacramento River, about 1,400 feet north of Twin Cities Road. It would be located at
37 the southern end of a RTM area near the intermediate forebay. It would occupy approximately 200
38 feet of the river bank. The river channel is almost 200 feet wide at this location, and the barge
39 unloading facility would require approximately 130 feet of the channel, leaving less than 100 feet for
40 boat passageway. 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.

1 *Snodgrass Slough*

2 The Snodgrass Slough barge unloading facility would be located nearly adjacent to the Intermediate
3 Forebay. It would occupy approximately 185 feet of the river bank and would extend about 135 feet
4 into the river. The river channel is approximately 235 feet wide at this location, so it would leave
5 about 100 feet for boat passage.

6 *Little Potato Slough*

7 The Little Potato Slough barge unloading facility would be on the southern end of Bouldin Island. It
8 would occupy about 980 feet of riverbank, and would extend about 210 feet into the river. The
9 channel is about 1,000 feet wide at this location, extending to an island, which would leave nearly
10 700 feet of passage for boats. Boats could also choose to bypass this facility and travel on the
11 southern end of the island.

12 *San Joaquin River*

13 The San Joaquin River barge unloading facility would be on the south side of Venice Island, on a wide
14 bend in the river, and would occupy about 928 feet of the riverbank. The river channel is more than
15 2,000 feet wide at this location. Therefore, even if the barge facility and barge operations at this
16 location occupied a substantial portion of the river, several hundred feet of unimpeded channel
17 width would remain, and there would be little effect on boat passage.

18 *Middle River*

19 The Middle River barge unloading facility would be on the east side of Mandeville Island and would
20 occupy approximately 180 feet of the riverbank. It would extend about 180 feet into the river, which
21 is almost 900 feet wide at this location, leaving more than 700 feet for boat passage.

22 *Connection Slough*

23 The Connection Slough barge unloading facility would be on the north side of Bacon Island. It would
24 occupy about 665 feet of riverbank and would extend about 250 feet into the river. There is an
25 island in the middle of the channel, so it would leave about 150 feet for boat passage between the
26 facility and the island, or boats could bypass it and travel on the northern side of the island.

27 *Old River*

28 One barge unloading facility would be on the northwest side of Victoria Island along the Old River,
29 less than two miles from Discovery Bay. It would occupy more than 1,000 feet of the river banks
30 near the junction of Woodward Canal, and would extend about 320 feet into the river. The river is
31 about 520 feet wide at this location, which would leave almost 100 feet for boat passage. Peak boat
32 traffic volume is likely high at this location; therefore, if boat passage continued, increased boat
33 traffic congestion could occur during peak use (primarily summer weekends) because boat traffic
34 would be confined to a limited portion of the channel. The Woodward Canal in the vicinity of the
35 barge unloading facilities is a known location for waterskiing and wakeboarding.

36 *West Canal*

37 One barge unloading facility would be located on the northeast side of Clifton Court Forebay along
38 West Canal, just south of Kings Island. It would occupy almost 1,000 feet of riverbank and would

1 extend about 80 feet into the channel. The channel is about 250 feet wide at this location, which
2 would leave nearly 170 feet for boat passage.

3 Construction of the temporary barge unloading facilities would result in adverse effects to boat
4 passage and navigation on waterways in the study area, including the creation of obstructions to
5 boat passage and associated boat traffic delays and temporary partial channel closures that could
6 impede boat movement and eliminate recreational opportunities. In waterways where waterskiing,
7 wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading
8 facilities would be eliminated during construction. Construction of the operable barrier at the head
9 of Old River would have only short-term effects on recreational opportunities on Old River. The
10 barrier would have a boat lock that would restore boating access once construction is complete.

11 Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by
12 development and implementation of site-specific construction traffic management plans, including
13 waterway navigation elements. Environmental commitments would also reduce effects on water-
14 based recreation (water-skiing, wakeboarding, tubing).

15 Currently, invasive aquatic vegetation can limit access to boats and reduce swimming areas.
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. *CM13 Invasive Aquatic Vegetation Control* provides for the control of
20 egeria, water hyacinth, and other IAV throughout the Plan Area. However, the BDCP proponents
21 would also commit to partner with existing programs operating in the Delta (including DBW, U.S.
22 Department of Agriculture-Agriculture Research Service, University of California Cooperative
23 Extension Weed Research and Information Center, California Department of Food and Agriculture,
24 local Weed Management Areas, Resource Conservation Districts, and the California Invasive Plant
25 Council) to perform risk assessment and subsequent prioritization of treatment areas to
26 strategically and effectively reduce expansion of the multiple species of IAV in the Delta. This risk
27 assessment would dictate where initial control efforts would occur to maximize the effectiveness of
28 the conservation measure. BDCP would contribute funds to further the DBW's aquatic weed control
29 programs in the Delta. The funds will be transferred prior to, or concurrent with, commencement of
30 construction of the BDCP, as described in Appendix 3B, *Environmental Commitments, AMMs, and*
31 *CMs*. Implementation of *CM13 Invasive Aquatic Vegetation Control* and the BDCP proponents'
32 environmental commitment to fund programs for aquatic week control would create and
33 rehabilitate alternative recreation opportunities for those eliminated during construction.

34 BDCP proponents would ensure through various outreach methods that recreationists were aware
35 of nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or
36 Bishop Cut). Additionally, BDCP proponents would commit to contributing funds for the
37 construction of new recreation opportunities as well as for the protection of existing recreation
38 opportunities as outlined in Delta Plan R11. BDCP proponents would also assist in funding the
39 expansion of state recreation areas in the Delta as described in Delta Plan R13. The funds will be
40 transferred prior to, or concurrent with, commencement of construction of the BDCP. This
41 commitment serves to compensate for the loss of recreational opportunities within the project area
42 by providing a recreational opportunity downstream/upstream in the same area for the same
43 regional recreational users. Potential areas for use of funds include, but are not limited to: the
44 reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding

1 House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-
2 Elmwood Tract, and south Delta.

3 Nonetheless, since these effects would be long-term, lasting approximately 5 years, they would be
4 considered adverse because of the reduced recreation opportunity and experiences expected to
5 exist near construction activity.

6 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
7 construction of the intakes, temporary barge unloading facilities, siphons, and the operable barrier
8 at the head of Old River. Impacts from intake and barge unloading facilities would last
9 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
10 of channel obstructions in addition to compliance with temporary speed zones. Temporary partial
11 channel closures could impede boat movement and restrict recreational opportunities. In
12 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be
13 eliminated during construction. DWR has made a commitment to partner with existing programs
14 operating in the Delta to reduce expansion of the multiple species of invasive aquatic vegetation in
15 the Delta which currently can limit access to boats and reduce swimming areas. BDCP would
16 contribute funds to further the Department of Boating and Waterway's aquatic weed control
17 programs in the Delta. The funds will be transferred prior to, or concurrent with, commencement of
18 construction of the BDCP (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). While the
19 environmental commitments would reduce impacts on water-based recreation (water-skiing,
20 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
21 eliminated during construction, impacts from the intakes and barge unloading facilities would be
22 long-term, and therefore considered significant and unavoidable. Construction of the operable
23 barrier and the siphons would last for 2 years (short-term) and would not result in long-term
24 reduction of recreation opportunities. The operable barrier at the Head of Old River will have a boat
25 lock which will be in use whenever the barrier is completely or partially closed. Passage through the
26 boat lock could take between 15-20 minutes depending on the water surface elevations. With
27 implementation of Mitigation Measure TRANS-1a, these components would cause less-than-
28 significant impacts on recreational navigation on Old River. Mitigation Measure TRANS-1a is
29 available to reduce impacts on marine navigation by development and implementation of site-
30 specific construction traffic management plans, including specific measures related to management
31 of barges and stipulations to notify the commercial and leisure boating communities of proposed
32 construction and barge operations in the waterways, but would not be able to completely mitigate
33 the impacts on all the waterways. The impact would be 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:** Sport fishing in the study area is a year-round activity, and includes bank fishing and
41 boat fishing for a number of fish including striped bass, largemouth bass; green and white sturgeon;
42 Chinook salmon, and American shad. Striped bass, American shad, and largemouth bass are all sport
43 fish species that were introduced into rivers for that purpose. Striped bass and largemouth bass are

1 regulated by CDFW for recreational fishing. Fishing likely occurs in all of the waterways where
2 water intake and barge unloading facilities would be located.

3 Under Alternative 4, construction of the water intakes, siphons, and operable barrier, and placement
4 and use of barge unloading facilities during tunnel/pipeline construction would result in temporary
5 water quality effects (e.g., turbidity, accidental spills, disturbance of contaminated sediments);
6 elevated underwater noise conditions (associated with pile driving and other construction
7 activities); fish exposure to stranding and direct physical injury; and temporary exclusion or
8 degradation of spawning and rearing habitats. These temporary construction-related effects would
9 last for up to 5 years in the vicinity of intake and barge unloading facilities and could alter fish
10 populations such that recreational fishing opportunities in the study area would be affected.
11 Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the
12 vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish,
13 causing recreationists to experience a changed recreation setting.

14 Construction of the expanded Clifton Court Forebay would affect bank fishing but would not affect
15 fish-accessible waterways or on-water sport fishing. Construction of the forebay would cause a long-
16 term reduction of up to 5 years for bank fishing that occurs on the embankment on the southern end
17 of Clifton Court Forebay while the forebay is expanded and a new embankment is constructed.
18 Construction of the combined pumping plants on the northeast side of Clifton Court Forebay, and
19 geotechnical exploration, would last up to 13 years. Fishing would be permitted again once
20 construction is completed. However, this would result in a long-term reduction of fishing
21 opportunities. Mitigation Measure REC-2 would address these effects by ensuring access to nearby
22 fishing by enhancing formal fishing sites near the proposed water conveyance facilities, including
23 near Clifton Court Forebay, and providing adequate signage directing anglers to the formal sites.

24 Although fish populations likely would not be affected to the degree that fishing opportunities would
25 be substantially reduced, construction conditions would introduce noise and visual disturbances
26 that would affect the recreation experience for anglers near construction areas. Although
27 construction noise would be temporary, and primarily be limited to Monday through Friday, it
28 would be ongoing for up to 24 hours per day and for up to 11 years near individual work sites.
29 Visual setting disruptions could distract from the recreation experience including on weekends.
30 However, Mitigation Measure AQUA-1a and AQUA-1bwould avoid and minimize adverse effects on
31 sport fish populations from impact pile driving, Mitigation Measures NOI-1a and NOI-1b and an
32 environmental commitment to develop and implement a noise abatement plan (Appendix 3B,
33 *Environmental Commitments, AMMs, and CMs*) would address construction noise effects.

34 Additionally, specific noise-generating activities near recreation areas would be scheduled to the
35 extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation
36 measures would also be available to address construction-related visual effects on sensitive
37 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
38 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
39 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
40 addition, the chapter identifies measures to address longer term visual effects associated with
41 changes to the landscape/visual setting from construction and the presence of new water
42 conveyance features. These include developing and implementing a spoil/borrow and RTM area
43 management plan (AES-1c) (as discussed in Appendix 3C, *Construction Assumptions for Water*
44 *Conveyance Facilities*), restoring barge loading facility sites once they are decommissioned (AES-1d),
45 applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring
46 concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best

management practices to implement a project landscaping plan (AES-1g). As described in Appendix 3B, *Environmental Commitments, AMMs, and CMS*, RTM would be removed from RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Anglers could move to other locations along the Sacramento River and throughout the Delta region. Due to the magnitude of the Plan Area and the duration of time construction is expected to last, this effect would be adverse. However, mitigation measures are available to reduce impacts by ensuring access to and enhancing nearby fishing sites, and to address noise and visual disturbances. Therefore, with implementation of mitigation measures, construction of the proposed water conveyance facilities would not result in a long-term reduction of fishing opportunities. The effect would not be adverse.

CEQA Conclusion: Significant impacts could occur if construction of the water conveyance facilities resulted in a long-term reduction of recreational fishing opportunities. Construction of the water intakes, siphons, and operable barrier, and placement and use of barge unloading facilities during tunnel/pipeline construction would result in temporary water quality effects, elevated underwater noise conditions, fish exposure to stranding and direct physical injury, and temporary exclusion or degradation of spawning and rearing habitats. DWR has made a commitment to prevent water quality effects through environmental training; implement stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; dispose of spoils, RTM, and dredged material (RTM would be removed from RTM storage areas and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material); implement a noise abatement plan; and implement a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*). Due to the magnitude of the Plan Area and the duration of time construction is expected to last, this impact would be significant. However, Mitigation Measures AQUA-1a and AQUA-1b would avoid and minimize adverse effects on sport fish populations from impact pile driving (Mitigation Measures AQUA-1a, NOI-1a, NOI-1b) and ensure continued access for bank fishing at established locations as well as enhance fishing sites near the proposed water conveyance facilities, including near Clifton Court Forebay; and provide adequate signage directing anglers to the formal sites (Mitigation Measure REC-2). Mitigation measures would also be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). With implementation of these mitigation measures, this impact would be less than significant.

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

44 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

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: Monitor Underwater Noise, and if Necessary, Use an
6 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
7 Underwater Noise**

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

10 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
11 Construction**

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

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

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

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.

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 4 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 11.3.4.9, they are typically limited to
16 specific rivers and not the population of that species as a whole.

17 Species frequently targeted in recreational fishing include Chinook salmon, steelhead, white
18 sturgeon, and striped bass. As described in Impact AQUA-39 through Impact AQUA-60, AQUA-93
19 through AQUA-96, AQUA-147 through AQUA-150, and AQUA-201 to AQUA-204 in Chapter 11,
20 impacts from operations of the water conveyance facilities related to entrainment, spawning and
21 egg incubation habitat, rearing habitat, and migration conditions generally would be less than
22 significant or beneficial to Chinook salmon, steelhead, white sturgeon, and striped bass. However,
23 entrainment of striped bass early life stages at the NDD was concluded, with some uncertainty, to be
24 significant and adverse (Impact AQUA-201). As described in that analysis, effects on early life stages
25 do not necessarily translate into effects on adults (Grimaldo et al. 2009; Baxter et al. 2010).

26 Impacts from operations of the proposed water conveyance facilities related to common
27 recreational fish populations are less than significant. Although impacts may occur, they would be
28 localized and not affect the species as a whole, or would be to early life stages and would not
29 necessarily transfer into effects on the later life stages, and therefore would not be anticipated to
30 amount to a reduction in fishing opportunities. The effect is not adverse because it would not result
31 in a substantial long-term reduction in recreational fishing opportunities.

32 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
33 operation of Alternative 4 would be considered less than significant because any impacts to fish and,
34 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
35 not impact the species population of any popular sportfishing species overall. As described in
36 Chapter 11, impacts from operations of the water conveyance facilities related to entrainment,
37 spawning and egg incubation habitat, rearing habitat, and migration conditions generally would be
38 less than significant or beneficial to Chinook salmon, steelhead, white sturgeon, and striped bass.
39 Although impacts may occur, they would be localized and not affect the species as a whole, or would
40 apply to early life stages without necessarily transferring to adults, and therefore would not be
41 anticipated to amount to a reduction in fishing opportunities. The effect is not adverse because it
42 would not result in a substantial long-term reduction in recreational fishing opportunities.

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:** Generally, the peak recreation season at the reservoirs falls between May to
5 September. Reservoirs are usually at maximum storage volume and surface water elevation in May
6 and decline over the course of the summer through September. This analysis compares the results of
7 the CALSIM II end-of-September reservoir water surface elevations because typically this month has
8 the most instances when reservoir elevations fall below key recreation thresholds (i.e., number of
9 years out of the 82 simulated when the September end-of-month storage is less than the recreation
10 elevation threshold). Under these low surface water elevations, the overall usable reservoir area is
11 reduced and previously submerged islands or shoals may become exposed and affect boating safety.
12 In addition, shoreline recreation becomes degraded.

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

23 **Existing Conditions (CEQA Baseline) Compared to Alternative 4 (2060)**

24 As shown in Table 15-12a and Table 15-12b, under Alternative 4 Operational Scenarios H1, H2, H3,
25 and H4 recreation thresholds would be exceeded more frequently at Trinity, Shasta, Oroville,
26 Folsom, and San Luis Reservoirs relative to Existing Conditions. These changes represent a greater
27 than 10% increase in the frequency the recreation thresholds are exceeded. However, as discussed
28 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
29 primarily attributable to sea level rise and climate change. It is not possible to specifically define the
30 exact extent of the changes due to implementation of the action alternative using these model
31 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
32 differences between Existing Conditions and Alternative 4 cannot be isolated in this comparison.
33 Please refer to the comparison of the No Action Alternative (2060) to Alternative 4 (2060) for a
34 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
35 operation of Alternative 4.

36 **No Action Alternative (2060) Compared to Alternative 4 (2060)**

37 The comparison of Alternative 4 (2060) to the No Action Alternative (2060) condition most closely
38 represents changes in reservoir elevations that may occur as a result of operation of the alternative
39 because both conditions include sea level rise and climate change (see Appendix 5A,
40 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As shown in Table 15-12a and
41 Table 15-12b, Alternative 4 Operational Scenarios H1, H2, H3, and H4 would result in changes in the
42 frequency with which the end-of-September reservoir levels at Trinity, Shasta, Oroville, Folsom, New
43 Melones and San Luis Reservoirs would fall below levels identified as important water-dependent
44 recreation thresholds. With the exception of San Luis Reservoir, the CALSIM II modeling results

1 indicate that reservoir levels under Alternative 4 operations would either not change or would fall
 2 below the individual reservoir recreation thresholds less frequently than under No Action
 3 Alternative (2060) conditions. Operation of Alternative 4 would not adversely affect water-
 4 dependent or water-enhanced recreation at these reservoirs. Overall, these conditions represent
 5 improved recreation conditions under operation of Alternative 4 because there would be fewer
 6 years in which end-of-September reservoir levels would fall below the recreation thresholds thus
 7 indicating better boating opportunities, when compared to No Action Alternative (2060) conditions.

8 The modeling results for San Luis Reservoir indicates there could be up to 11, 38, 28, and 46
 9 additional years under Alternative 4 Scenario H1, H2, H3, and H4, respectively during which the
 10 reservoir level would fall below the reservoir boating threshold at the end of September for the
 11 Dinosaur Point boat launch. In addition, at the Basalt boat launch, which is accessible to elevation
 12 340 feet, operations under Alternative 4 Scenarios H2 and H4 would result in 15 and 29 additional
 13 years during which reservoir elevations would fall below the recreation threshold relative to the No
 14 Action Alternative (2060) condition. This is a greater than 10% change and would be considered a
 15 substantial reduction in recreational boating opportunities at San Luis Reservoir. Shoreline fishing
 16 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
 17 and fishing—would be available. The reduction in surface elevations at San Luis Reservoir under
 18 Scenarios H1 and H2 and H4 would result in an adverse impact on recreation occurring at the
 19 reservoir by restricting access by boaters. Mitigation Measure REC-6 would be available to address
 20 this effect.

21 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
 22 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
 23 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
 24 Alternative 1A (2060) operations would either not change (New Melones Reservoir) or would fall
 25 below the individual reservoir thresholds less frequently than under No Action Alternative (2060).
 26 These changes in reservoir and lake elevations would result in a less-than-significant impact on
 27 recreation opportunities and experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake,
 28 and New Melones Lake. At Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake, because there
 29 would be fewer years in which the reservoir or lake levels fall below the recreation threshold
 30 relative to No Action Alternative (2060) conditions, these effects would be considered beneficial
 31 effects on recreation opportunities and experiences. Operation of Alternative 4 would not
 32 substantially affect water-dependent or water-enhanced recreation at these reservoirs. At San Luis
 33 Reservoir, although boating opportunities would be reduced more frequently for the Dinosaur Point
 34 boat launch and the Basalt boat launch would not substantially change. The reduction in reservoir
 35 access by boaters under Scenarios H2 and H4 would be significant because it is a greater than 10%
 36 change (8 additional years or more). Operations as modeled under Alternative 4 Scenarios H2 and
 37 H4 could substantially affect recreational boating at San Luis Reservoir and could result in a
 38 significant impact. Mitigation Measure REC-6 would reduce this impact to a less-than-significant
 39 level.

40 **Mitigation Measure REC-6: Provide an Alternative Boat Launch to Ensure Access to San
 41 Luis Reservoir**

42 Consistent with applicable recreation management plans, DWR and Reclamation will work with
 43 DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative
 44 boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes
 45 unavailable.

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

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

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

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

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

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

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

1 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
2 **Implementing CM2-CM21**

3 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
4 components as part of Alternative 4 could have effects related to recreational fishing that are similar
5 in nature to those discussed above for construction, and operation and maintenance of proposed
6 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
7 likely be substantially lower because the nature of the activities associated with implementing the
8 conservation components would be different—less heavy construction equipment would be
9 required and the restoration actions would be implemented over a longer time frame than CM1.
10 Potential effects from implementation of the conservation components would be dispersed over a
11 larger area and would generally involve substantially fewer construction and operation effects
12 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 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 important uses of the Yolo Bypass such as flood
32 protection, agriculture, endangered terrestrial species habitat, fisheries habitat, the Yolo Natural
33 Heritage Program, and managed wetlands habitat as described in existing state and federal land
34 management plans associated with the Yolo Bypass Wildlife Area and existing conservation
35 easements on private land.

36 Noise and the physical footprint associated with these 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 affect onshore
40 fishing opportunities. Shore fishing would be temporarily affected by reduced access to the popular
41 deeper channels due to an increased floodplain footprint in the Yolo Bypass Wildlife Area. This
42 conservation measure was designed, in part, to improve habitat for covered fish species, including
43 Chinook salmon, green and white sturgeon, and steelhead. These habitat improvement elements
44 would lead to increased populations of targeted fish species, which over time, could benefit

1 recreational fishing opportunities. Thus, to the extent that access is available to anglers, the fishing
2 experience for native sport species benefiting from this measure would improve based on
3 hypothetical higher catch rates. Environmental commitments would be available to reduce the
4 effects of inundation on fishing opportunities.

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

25 Another guiding principle in the design of CM4 is the limitation of environmental conditions that
26 favor nonnative predator fish species, including striped bass. Predator removal measures would be
27 highly localized and would not appreciably decrease Delta-wide abundance of predatory game fish
28 (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.9). The recreational experience
29 associated with fishing for these species would not be expected to be substantially reduced. On
30 balance, it is anticipated that CM4 would have a minor positive effect on the fishing experience in the
31 Delta region.

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

43 Within the first 40 years of Plan implementation, a total of 10,000 acres of seasonally inundated
44 floodplain would be restored under Alternative 4. Seasonally inundated floodplain restoration could
45 occur along channels in many locations in the north, east, and/or south Delta. These restoration

1 measures would result in a further increase in onshore and boat fishing opportunities due to
2 improvements in riparian habitat for fish; however, existing points of access may be modified or
3 disrupted.

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

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

29 Under CM11 management plans for natural communities may be prepared for specific reserves or
30 for multiple reserves within a specified geographic area. Management and enhancement actions
31 would be implemented for the following natural communities: tidal aquatic and wetland, nontidal
32 aquatic and wetland, riparian, grasslands and associated seasonal wetland, inland dune scrub, and
33 agricultural lands and managed wetlands. Depending on the level of recreational access granted by
34 management plans, this measure could increase or decrease opportunities for anglers within the
35 Delta region.

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

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

1 levels. Increased turbidity could also support delta and longfin smelt foraging. Control of nonnative
2 aquatic vegetation could also support access to additional rearing habitat for covered species, as
3 well as increased food availability stemming from greater light levels for phytoplankton growth.
4 Operations associated with vegetation control, particularly mechanical removal, would
5 intermittently and temporarily affect the quality of fishing. However, this measure would increase
6 opportunities for onshore and boat fishing for species that are hampered by the presence of
7 excessive nonnative vegetation. While these activities would reduce the fishing experience related to
8 nonnative predatory fish, overall these efforts would not appreciably reduce Delta-wide abundances
9 of predatory game fish (i.e., largemouth bass, striped bass) and populations would not be
10 diminished to the extent that fishing opportunities would be adversely affected (refer to Chapter 11,
11 *Fish and Aquatic Resources*, Section 11.3.4.9).

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

17 CM15 would reduce local effects of predators on covered fished species by conducting predator
18 control in areas with high predator density. Predator *hot spots* would be identified and control
19 methods would be adopted including the removal of predator hiding spots, modification of channel
20 geometry, targeted removal of predators, and other focused methods as dictated by site-specific
21 conditions and the intended outcome or goal. Preference for which hot spots to address would be
22 given to areas of high overlap with covered fish species, such as migratory routes or spawning and
23 rearing habitats. Predator control would decrease opportunities for onshore and boat fishing for
24 species targeted for removal but would improve fishing opportunities for game species benefiting
25 from reduced predation. If implementation includes a relaxation of regulations relating to bag limits
26 or size restrictions associated with predatory species, this measure would carry a beneficial effect
27 for anglers targeting these species as well. Overall, as for other CMs targeting predator species, these
28 efforts would not appreciably reduce Delta-wide abundances of predatory game fish such that
29 recreational fishing would be adversely affected (refer to Chapter 11, *Fish and Aquatic Resources*,
30 Section 11.3.4.9).

31 CM16 involves nonphysical fish barriers (BioAcoustic Fish Fences [BAFFs]) at the junction of
32 channels with low survival of outmigrating juvenile salmonids to deter fish from entering these
33 channels. Nonphysical fish barrier placement locations would include Georgiana Slough, the head of
34 Old River, the Delta Cross Channel, Turner Cut and Columbia Cut (note that Turner and Columbia
35 Cut each have two channels, and thus would require two barriers). Installation of these barriers
36 could temporarily limit fishing activities by creating noise and necessitating a physical footprint in
37 existing fishing areas. This measure would decrease opportunities for onshore and boat fishing in
38 some channels but would support overall native fish populations, resulting in a mixed, but minimal,
39 effect on fishing opportunities across the Delta region.

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

1 activities and could result in greater regulatory burdens for law-abiding anglers as a result of
2 increased inspection frequency, it would increase opportunities for a wider number of individuals
3 through the enforcement of bag limits.

4 CM18 would establish new conservation propagation programs and expand the existing program for
5 delta and longfin smelt. This measure would include development of a delta and longfin smelt
6 conservation hatchery by USFWS. The specifications and operations of this facility have not been
7 developed. The final selection of a location for the facility will involve additional environmental
8 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
9 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20 in
10 BDCP Chapter 3, *Conservation Strategy*). One site is northwest of the city limits and could be used for
11 a supplementation production facility. This site is not near any existing well-established recreation
12 sites or opportunities and is approximately 1 mile from the Sacramento River such that future
13 construction and operation activities would not be expected to affect water-based recreation
14 opportunities and experiences. The other site is a former Army Reserve base on the west river bank,
15 south of the city limits, that would be developed as a genetic refuge and research facility.
16 Construction at this site could affect recreation activities and experiences at the Delta Marina Yacht
17 Harbor, immediately north of the site, and boating (including boat fishing) on the Sacramento River,
18 depending on noise levels and the degree of visual disturbances. Additional permitting and
19 environmental documentation would be needed to implement this conservation measure once
20 facility designs and funding are available. Overall, implementation of CM18 would not be expected to
21 have an adverse effect on fishing opportunities because construction of the facility would be
22 anticipated to last 2 years or less (short term) and operation of the facility would not be expected to
23 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. The conservation measures are expected to result in a long-term
26 beneficial effect on recreation by enhancing aquatic habitat and fish abundance in the study area.

27 **CEQA Conclusion:** Significant impacts could occur from implementation of CMs 2-21 if it resulted in
28 a long-term reduction in fishing opportunities. During the implementation stage, CM2-CM21 could
29 result in impacts on fishing opportunities by temporarily or permanently limiting access to fishing
30 sites and disturbing fish habitat.

31 CM2 would increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in
32 decreased onshore fishing opportunities. These impacts would be considered less than significant
33 because the BDCP would include environmental commitments to consult with CDFW to expand
34 wildlife viewing, angling, and hunting opportunities, as described in Recommendation DP R14 of the
35 Delta Plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*).

36 CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly
37 localized reductions of predatory species, overall, these measures would not result in an appreciable
38 decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic
39 Resources*, Section 11.3.4.9). Construction of facilities could have short-term impacts on the noise or
40 visual setting and could indirectly affect recreational fishing.

41 Environmental commitments that will reduce construction-related impacts on recreation include a
42 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
43 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2
44 and Impact REC-3, above). DWR has also made environmental commitments to prevent water

1 quality effects include environmental training; implementation of stormwater pollution prevention
2 plans, erosion and sediment control plans, hazardous materials management plans, and spill
3 prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a
4 barge operations plan (Appendix 3B).

5 Because construction of the conservation measure component facilities would be less intense and of
6 shorter duration than construction of CM1 conveyance facilities, the environmental commitments
7 would reduce the construction-related impacts on recreational fishing associated with the other
8 conservation measures to a less-than-significant level.

9 In addition, a number of mitigation measures already being implemented to mitigate effects of
10 construction of CM1 will address construction-related impacts on recreational fishing by reducing
11 the degree of aesthetic and visual degradation at construction sites (see Chapter 17, *Aesthetics and*
12 *Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e,
13 AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and
14 Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and
15 transportation safety and access conditions that could affect public use of recreation areas (see
16 additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*,
17 Section 19.3.3.9). Mitigation Measures NOI-1a and NOI-1b address construction-related noise
18 concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23,
19 *Noise*, Section 23.3.3.9). Finally, should construction of conservation measure facilities require pile-
20 driving, mitigation measures to protect fish and aquatic species would be implemented to reduce
21 these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and*
22 *Aquatic Resources*, Section 11.3.4.9).

23 Further, the individual facilities or conservation elements will undergo additional environmental
24 review and permitting which will include identification of site-specific measures to further protect
25 resources.

26 Therefore, the potential impact on covered and non-covered sport fish species from construction
27 activities would be considered less than significant. CM2–CM21 in the long-term would be expected
28 to improve fishing opportunities by enhancing fish habitat in the Yolo Bypass; restoring tidal
29 habitat, seasonally inundated floodplains, channel margins, and riparian habitat; controlling aquatic
30 vegetation and predators; controlling illegal harvest of covered species; and expanding boat launch
31 facilities. In the long term, the impact on fishing opportunities would be considered beneficial
32 because the conservation measures are intended to enhance aquatic habitat and fish abundance.

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

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

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

40 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
41 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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.

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: Monitor Underwater Noise, and if Necessary, Use an**
20 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
21 **Underwater Noise**

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

24 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
25 **as a Result of Implementing CM2–CM21**

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

33 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
34 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
35 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
36 improvements and flow management facilities, would be implemented in four phases starting with
37 plan implementation and continuing to approximately 2063. Boats are not allowed in the Yolo

1 Bypass Wildlife Area, so there would be no effect on boating opportunities due to construction
2 activities associated with the physical modifications for this measure. The maximum extent of
3 inundation in the Yolo Bypass would not increase from current conditions, but the frequency and
4 duration of inundation events would increase. This measure would not affect opportunities for
5 boating-related activities as a result of longer inundation periods.

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

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

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

41 CM11 would provide beneficial effects on boating opportunities by allowing recreation to occur on
42 approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal
43 pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter
44 4, Section 4.2.3.9.2, *Recreation*). The reserve system would update one boating facility, as well as a

1 new boat launch facility within the footprint of the North Delta diversion facilities, which would
2 increase opportunities for boating within the study area.

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. While aquatic vegetation removal operations could temporarily restrict or obstruct
6 navigation and reduce the quality of boating, overall the measure would increase boat passage and
7 navigation and would improve the boating experience.

8 Under CM16, nonphysical fish barriers would be placed at the head of Old River, the Delta Cross
9 Channel, and Georgiana Slough, Turner Cut and Columbia Cut (note that Turner and Columbia Cut
10 each have two channels, and thus would require two barriers). Depending on their design, the
11 construction and operation of these barriers could constrict boat passage or necessitate lower speed
12 limits, diminishing the boating experience around the barriers.

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 CM18 would establish new conservation propagation programs and expand the existing program for
19 delta and longfin smelt. This measure would include development of a delta and longfin smelt
20 conservation hatchery by USFWS. The specifications and operations of this facility have not been
21 developed. The final selection of a location for the facility will involve additional environmental
22 review. The location is expected to be within the study area in the vicinity of Rio Vista. The BDCP
23 identifies potential USFWS conservation hatchery facility locations in this area (see Figure 3.4-20 in
24 BDCP Chapter 3, *Conservation Strategy*). One site is northwest of the city limits and could be used for
25 a supplementation production facility. This site is not near any existing well-established recreation
26 sites or opportunities and is approximately 1 mile from the Sacramento River such that future
27 construction and operation activities would not be expected to affect water-based recreation
28 opportunities and experiences. The other site is a former Army Reserve base on the west river bank,
29 south of the city limits, that would be developed as a genetic refuge and research facility.

30 Construction at this site could affect recreation activities and experiences at the Delta Marina Yacht
31 Harbor, immediately north of the site, and boating on the Sacramento River, depending on noise
32 levels and the degree of visual disturbances. The BDCP proponents would implement environmental
33 commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
34 *and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3) to lessen these
35 impacts. In addition, a number of mitigation measures address construction-related impacts on
36 recreational boating by reducing the degree of aesthetic and visual degradation at the construction
37 site (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a,
38 AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional
39 discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-
40 1b, and TRANS-1c will address traffic and transportation safety and access conditions of the marina
41 (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
42 *Transportation*, Section 19.3.3.9). Mitigation Measures NOI-1a and NOI-1b will address construction-
43 related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and
44 Chapter 23, *Noise*, Section 23.3.3.9). Implementation of these measures, as determined applicable to
45 construction of this facility under future site-specific environmental review, would reduce impacts

related to a long-term reduction in boating-related recreation activities to a less-than-significant level. Overall, implementation of CM18 would not be expected to have an adverse effect on recreational boating opportunities.

Under CM20, the BDCP Implementation Office would fund a Delta Recreational Users Invasive Species Program designed to implement actions to prevent the introduction of new aquatic invasive species and reduce the spread of existing aquatic invasive species via recreational watercraft, trailers, and other mobile recreational equipment used in aquatic environments in the study area. The program would consist of two primary elements targeting recreational boaters: education and outreach, and watercraft inspection. Education and outreach printed materials and interpretive displays would provide information regarding the presence and range of existing aquatic invasive species, the various vectors of aquatic invasive species, the threat of existing aquatic invasive species spreading within the study area, and the risk of new aquatic invasive species introductions. The watercraft inspection would involve development and implementation of a comprehensive inspection program. This type of program involves screening interviews at the point of entry; a comprehensive inspection of all high risk watercraft, trailers, and equipment identified as high-risk during the screening interview; decontamination and/or quarantine or exclusion of watercraft, trailers, and equipment that are not clean, drained, and dry; and optional vessel certification. Although there could be a marginal effect on the recreation experience if boaters are delayed at the boat launch, it is expected that there would be no adverse effect on recreational boating.

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

With the exception of CM 18, these measures would not result in a long-term reduction in boating-related recreation activities. With mitigation implemented, CM 18 would result not be adverse. Overall, this impact would not be adverse.

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 stem from construction, which may limit 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. Overall, these measures would not be anticipated to result in a long-term reduction in
5 boating-related recreation activities; therefore, this impact is considered less than significant for the
6 conservation 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 base
8 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
9 site. The BDCP proponents would implement environmental commitments to include a noise
10 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
11 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. However,
12 construction of CM18 would result in significant impacts. A number of mitigation measures address
13 construction-related impacts on recreational boating by reducing the degree of aesthetic and visual
14 degradation at the construction site (see Chapter 17, *Aesthetics and Visual Resources*, Section
15 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-
16 4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above).
17 Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c would 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 19.3.3.9). Mitigation Measures NOI-1a
20 and NOI-1b would address construction-related noise concerns (see additional discussion under
21 Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.9). Implementation of
22 these measures, as determined applicable to construction of this facility under future site-specific
23 environmental review, would reduce impacts related to a long-term reduction in boating-related
24 recreation activities to a less-than-significant level. No 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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 CM2–CM21**

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

23 Under CM2, the Yolo Bypass would be modified to increase the frequency, duration, and magnitude
24 of floodplain inundation. These actions would improve passage and habitat for Sacramento splittail,
25 Chinook salmon, lamprey, and possibly steelhead. The modifications, which include fish passage
26 improvements and flow management facilities, would be implemented in four phases starting with
27 plan implementation and continuing to approximately 2063. The maximum extent of inundation in
28 the Yolo Bypass would not increase from current conditions, but the frequency and duration of
29 inundation events would increase. The Yolo Bypass Wildlife Area provides opportunities for upland
30 recreational activities, including waterfowl and upland game bird hunting, hiking and walking,
31 wildlife viewing, botanical viewing, and nature photography. Changes to flood management in the
32 Yolo Bypass have the potential to result in effects on waterfowl and other recreation uses, including
33 recreational hunting, in this area (Ducks Unlimited 2012). Because the wildlife area closes during
34 periods of inundation, this measure would decrease opportunities for these activities as a result of
35 the longer inundation periods in the Yolo Bypass. Under Existing Conditions, flood-related
36 conditions contribute to Yolo Bypass hunting area closures lasting for up to 2 weeks (14 days) out of
37 the 100-day hunting season. Removal of berms and levees could also decrease recreational access in
38 the Yolo Bypass. Construction activities would also temporarily affect the quality of activities by
39 introducing noise, odors, and unattractive visual scenes into the recreational environment. Longer
40 inundation events would reduce wetland-dependent wildlife species access to food and could result
41 in impacts to upland game birds and failure of nesting birds during spring events. This may decrease
42 hunting and wildlife viewing experiences during non-flooding periods. Winter flood water levels
43 under CM2 could be deeper than Existing Conditions waterfowl species (e.g., dabbling duck) that

1 prefer a shallower flooded seasonal wetland area could experience reduced foraging habitat.
2 Another factor that could affect waterfowl populations and related waterfowl hunting and bird
3 watching would be spring seed production loss and related decrease of food resources for these
4 populations (Ducks Unlimited 2012). Hunting in the Yolo Bypass is most common in the lower
5 elevation portions of the property; thus, low levels of flooding would impact blind areas and free
6 roam areas and reduce hunting opportunities. As described in Table 3.4.2-1 of Chapter 3 of the
7 BDCP, two inundation targets have been proposed for CM2, which would attempt to inundate 7,000-
8 10,000 acres from November to May, or 17,000 acres from December through February, every year
9 for 50 years, which could have potential effects on waterfowl and associated recreational
10 opportunities. The hunting season for waterfowl lasts from late October through January, so some
11 months would not be affected by inundation. However, CM2 would still have an adverse effect on
12 upland recreational opportunities. The BDCP proponents and agencies are considering alternative
13 methods for managing closures at the wildlife area, such as partial rather than full closures following
14 flood events, and so it could be that future operations would not adversely affect the overall hunting
15 season. Additionally, environmental commitments are available to reduce the effects of inundation
16 on upland recreational opportunities.

17 CM3 provides the mechanism and guidance for land acquisition and establishment of a system of
18 conservation lands in the study area necessary to meet BDCP natural community and species habitat
19 protection objectives. This system of conservation lands would be built over the implementation
20 term of the BDCP to protect and enhance areas of existing natural communities and covered species
21 habitat, protect and maintain years of selected plant species with very limited distributions, provide
22 sites suitable for restoration of natural communities and covered species habitat, and provide
23 habitat connectivity among the various BDCP conservation land units in the system. This measure
24 includes tidal habitat restored under CM4; valley/foothill riparian habitat restored under CM7;
25 grassland habitat restored under CM8; 8,000 acres of grassland habitat protected, vernal pool
26 complex restored to achieve no net loss under CM9; 600 additional acres vernal pool complex
27 protected, nontidal freshwater perennial emergent wetland and nontidal perennial aquatic habitat
28 restored under CM10; 400 acres of alkali seasonal wetland complex protected and 16,620–32,640
29 acres of agricultural habitats protected. Depending on the acquisition strategy implemented through
30 this measure, recreational access for upland activities could be expanded or diminished.
31 Mechanisms that permit public access would increase opportunities related to upland hunting,
32 hiking, walking, wildlife viewing, botanical viewing, nature photography, picnicking, and sightseeing.
33 Alternatively, acquisition that would exclude public recreational use would decrease opportunities
34 for these activities.

35 CM4 provides for restoration of 16,300 acres of tidal habitat (brackish emergent wetland,
36 freshwater emergent wetland, perennial aquatic, other wetland, and adjacent upland [to
37 accommodate sea level rise]) in the near-term and up to 65,000 acres in the late long-term. In the
38 late long-term, BDCP implementation would provide for the cumulative restoration of 65,000 acres
39 of freshwater and brackish tidal habitat in the BDCP ROAs under Alternative 1A. The extent of
40 restored tidal habitat includes shallow subtidal aquatic habitat, restored tidal mudflat, restored tidal
41 marsh plain habitat, and adjoining transitional upland habitat. Areas to be restored would be
42 modified by breaching and lowering levees, constructing new or modified levees to protect adjacent
43 areas from flooding, connecting remnant sloughs or channels to improve circulation, and modifying
44 ground elevations to reduce effects of subsidence. Site preparation and earthwork associated with
45 this restoration could result in temporary closure to recreational areas and excess noise, decreasing
46 recreational quality. Additionally, some upland areas would be converted to tidal habitat as part of

1 this measure, limiting access for upland recreation activities including upland hiking and walking,
2 camping, picnicking, and nature viewing and photography. However, because transitional upland
3 habitat adjoining tidal areas would also be restored, this could also create new opportunities.
4 Furthermore, restoration actions adjacent to existing recreational areas could enhance the quality of
5 the experience in these areas.

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

21 Channel margin habitat enhancement would modify channel geometry and restore riparian, marsh,
22 and mudflat habitats along existing levees. Under CM6 at least 5 miles of habitat would be enhanced
23 within the first 10 years and up to 20 miles after 30 years. At least 5 of the 20 miles of channel
24 margin enhancement would take place along the Sacramento River and at least 5 miles would be
25 along the San Joaquin River. The remaining 10 miles would be distributed among other fish
26 migration channels. Earthwork and site preparation associated with habitat enhancement may limit
27 access to existing upland recreational areas and degrade the recreational experience. This measure
28 would create benches on the outboard side of levees or create setback levees. Where setback levees
29 and associated enhancement activities close access to existing upland areas, associated recreational
30 opportunities such as wildlife viewing and hiking would be reduced. Where habitat enhancement
31 creates new upland areas accessible to recreationists, the opportunities for upland activities would
32 improve. In either case, habitat enhancements would improve the experience of wildlife-dependent
33 upland recreational activities from existing, adjacent recreation areas.

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

44 Under CM8, 2,000 acres of grassland within CZ 1, CZ 8, and CZ 11 would be restored. Restoration
45 activities for this measure would be associated with tidal habitat restoration under CM4 and

1 agricultural land protection under CM3. Anticipated actions to restore grassland habitat, as
2 appropriate to site-specific conditions, would include, but not be limited to, acquiring lands, in fee
3 title or through conservation easements, with site characteristics that support restoration of high-
4 value grassland, restoring grassland by sowing native species using a variety of techniques, and
5 potentially restoring grazing grassland habitat to modify its vegetation. While earthwork and site
6 preparation of these areas could temporarily degrade recreational access and quality by introducing
7 noise and odors into the setting, restoration of grassland communities would increase opportunities
8 for upland hunting, wildlife viewing, botanical viewing, and nature photography due to
9 improvements to wildlife and native plant habitats. Restoration of natural areas under this measure
10 would also increase opportunities for upland hiking, walking, picnicking, and sightseeing.

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

25 Under CM10, 1,200 acres of nontidal freshwater marsh within CZ 2 and CZ 4 and/or CZ 5 would be
26 restored by year 40. CM10 actions would be phased with 400 acres restored by year 10, 600 by year
27 20 and the cumulative total of 1,200 acres restored by year 40. Restoration of nontidal freshwater
28 emergent wetland and nontidal perennial aquatic natural communities would provide habitat for
29 giant garter snake, western pond turtle, and other native wildlife and plant species characteristic of
30 this habitat. Restored nontidal wetlands would also be designed and managed to support other
31 native wildlife functions including waterfowl foraging, resting, and brood habitat and shorebird
32 foraging and roosting habitat. Restored habitat would include preserved transitional upland habitat
33 to provide upland habitat for giant garter snakes and western pond turtles and nesting habitat for
34 waterfowl. While construction activities and access restrictions associated with this measure may
35 reduce some upland recreational opportunities and create temporary construction effects from
36 activities producing noise or odors, improvements in wildlife and native plant habitats associated
37 with the measure would increase the quality of upland hunting, wildlife viewing, botanical viewing,
38 and nature photography in and adjacent to restored areas.

39 Implementation of CM11 would provide beneficial effects on recreation opportunities by allowing
40 recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system, consisting
41 of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural community types
42 (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would comprise more than
43 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead facilities and one
44 updated boating facility, as well as a new boat launch facility within the footprint of the North Delta
45 diversion facilities. This measure is expected to increase upland recreational opportunities by

1 permitting hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, and equestrian
 2 use, as well as a potential for limited hunting opportunities.

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

8 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 9 conservation measures would temporarily limit opportunities for upland recreational activities
 10 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 11 construction activities would also temporarily compromise the quality of upland recreation in and
 12 around these areas. Additionally, it is possible that current areas of upland recreation would be
 13 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 14 activities. These impacts on upland recreational opportunities would be considered less than
 15 significant because the BDCP would include environmental commitments that would require BDCP
 16 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 17 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
 18 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 19 upland recreation and the measure would improve the quality of existing recreational opportunities
 20 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 21 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 22 considered less than significant.

23 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other 24 Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations 25 Addressing Recreation Resources**

26 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 27 CM21 could result in the potential for incompatibilities with plans and policies related to protecting
 28 recreation resources of the Delta. A number of plans and policies that coincide with the study area
 29 provide guidance for recreation resource issues as overviewed in Section 15.2, *Regulatory Setting*.
 30 This overview of plan and policy compatibility evaluates whether Alternative 4 is compatible or
 31 incompatible with such enactments, rather than whether impacts are adverse or not adverse or
 32 significant or less than significant. If the incompatibility relates to an applicable plan, policy, or
 33 regulation adopted to avoid or mitigate recreation effects, then an incompatibility might be
 34 indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 35 physical effects of Alternative 4 on recreation resources is addressed in Impacts REC-1 through REC-
 36 11, and in other chapters such as Chapter 23, *Noise*, Section 23.3.3.9, and Chapter 17, *Aesthetics and*
 37 *Visual Resources*, Section 17.3.3.9. The following is a summary of compatibility evaluations related to
 38 recreation resources for plans and policies relevant to the BDCP.

- 39 • 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 and General Development Plan, and San Luis Reservoir State
 Recreation Area General Development Plan all have policies or goals to protect the recreation

1 resources and promote a range of opportunities to visitors to these areas. Construction and
2 operation of the proposed water conveyance facilities and other conservation measures would
3 not affect recreation opportunities in these areas and would be compatible with these plans.

- 4 • The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
5 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the*
6 *Delta, Delta Plan, and Brannan Island and Franks Tract State Recreation Areas General Plan* are
7 all focused on the protection of resources, including recreation resources, within the Delta.
8 These plans have policies, objectives, or goals intended to protect and enhance existing
9 recreation and encourage development of new local and regional opportunities. Constructing
10 the proposed conveyance facilities would result in long term disruption to existing established
11 recreation areas in the study area and change the nature of the recreation setting. The proposed
12 water conveyance elements could be considered incompatible with measures to protect existing
13 recreation opportunities in the study area.
- 14 • The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System,
15 and the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all
16 promote development of a regional trail system providing a continuous regional recreational
17 corridor to provide bikeways and hiking trails. The BDCP proponents would work with these
18 regional and local efforts to design proposed restoration areas to be compatible with and
19 complement the goals of creating a regional trail network and where feasible to adapt
20 restoration proposals to incorporate recreational amenities and opportunities in these areas.
- 21 • Regional plans and those geared toward the management of specific areas, including the *Stone*
22 *Lakes National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island*
23 *and Franks Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land*
24 *Management Plan, the Yolo County General Plan, Lower Sherman Island Wildlife Area Land*
25 *Management Plan, San Francisco Bay Plan, Suisun Marsh Protection Plan, and Solano County*
26 *General Plan Suisun Marsh Policy Addendum* are primarily designed to preserve and enhance the
27 natural resource and recreation qualities of these areas. Implementing the BDCP alternatives
28 may create disruptions related to facility and restoration improvements. Proposed restoration
29 areas in the Yolo Bypass, on Sherman Island, and in Suisun Marsh would be designed to be
30 compatible with and complement the current management direction for these areas and would
31 be required to adapt restoration proposals to meet current policy established for managing
32 these areas.
- 33 • The BDCP would be constructed and operate in compliance with regulations related to boat
34 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
35 Department of Parks and Recreation's Division of Boating and Waterways), and federal
36 (including the U.S. Coast Guard) boating law enforcement. The alternative would be compatible
37 with California State Land Commission regulations related to recreational piers or marinas.
- 38 • EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
39 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
40 alternative.
- 41 • Alternative 4 would result in the construction of permanent and temporary features associated
42 with the proposed water conveyance facility across land governed by the general plans of
43 Sacramento, San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have
44 policies related to the protection of recreation resources and encourage the development of new
45 water-based and land-based recreation opportunities. Sacramento and San Joaquin Counties

1 recognize the Delta as an area of international importance and as a major recreational resource
2 of these counties. Construction activities that disrupt and degrade recreation opportunities in
3 the study area would be incompatible with policies designed to protect recreation resources,
4 including those intended to protect open space and natural areas and those that discourage
5 development of public facilities and infrastructure unless it is related to agriculture, natural
6 resources and open space, and has recreational value.

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

11 **15.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and 12 Intake 1 (3,000 cfs; Operational Scenario C)**

13 For the purposes of assessment of effects on recreation, Alternative 5 is the same as Alternative 1A,
14 with the following exceptions.

- 15 • Only one intake facility would be constructed under Alternative 5 (Intake 1).
- 16 • Alternative 5 has a different operations scenario.
- 17 • Under Alternative 5, tidal habitat restoration would be limited to 25,000 acres.

18 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
19 Alternative 5 (Mapbook Figure M15-1), except that recreation sites or areas affected by construction
20 of Intakes 2, 3, 4, or 5 would not be affected under Alternative 5. Specific effects on recreation areas
21 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:** Alternative 5 effects would be the same as those discussed under Alternative 1A, with
26 the exception that Alternative 5 proposes one intake site rather than 5 (Intake 1). The proposed
27 location of the Alternative 5 intake facility, tunnels, and associated water conveyance facilities
28 would not lie within the designated boundaries of any existing public use recreation site. The post-
29 construction location of the water conveyance facilities would not result in long-term disruption or
30 reduction of any well-established recreation activity or site, including parks, marinas, or other
31 designated areas. Therefore, there would be no adverse effects. Effects on recreation related to
32 construction of the water conveyance facilities are discussed below in Impact REC-2. Also see
33 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, and Chapter 23, *Noise*, Section
34 23.3.3.10, for additional discussion of these topics.

35 **CEQA Conclusion:** The alternative would not result in the permanent displacement of any well-
36 established public use or private commercial recreation facility available for public access.
37 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: Effects related to temporary conflicts with recreational opportunities or experiences under Alternative 5 would be similar to those described for Alternative 1A; however, only one intake location (Intake 1) would be constructed under Alternative 5. Effects associated with Alternative 5 construction of physical components would be anticipated to be less severe relative to Alternative 1A for the Clarksburg Fishing Access and Stone Lakes NWR because Intakes 2, 3, 4, and 5 would not be constructed. However, overall, substantial disruption of recreation opportunities at the sites within the alternative impact area would still occur. Construction may occur year-round and last from 1 to 5 years and in-river construction activities primarily would be limited to June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.10, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, Chapter 19, *Transportation*, Section 19.3.3.10, and Chapter 23, *Noise*, Section 23.3.3.10, for additional detail related to waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas within the construction impact area.

Other Recreation Opportunities

On-Water Recreation

Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the construction impact area for Intake 1 and 2. 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. 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 with the proposed water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be further limited primarily to June 1 through October 31 each year. Although dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to experience a changed recreation setting.

Campgrounds

Nighttime construction activities would require the use of bright lights that would negatively affect nighttime views of and from the work area. This would affect any overnight camping at the recreation sites and areas discussed above, although day use areas that close at sunset would not be adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.3.3.10, another nighttime effect on recreation would be construction noise levels that could adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime construction could be infrequent and intermittent, but would adversely affect

1 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
2 Measures NOI-1a and 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
7 12.3.3.10, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, Chapter 19, *Transportation*,
8 Section 19.3.3.10, and Chapter 23, *Noise*, Section 23.3.3.10, for additional detail related to
9 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
10 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
11 sites or areas 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 implementation of *AMM20 Greater Sandhill Crane* and
24 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
25 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
26 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
27 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
28 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
29 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
30 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
31 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
32 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
33 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
34 suitable habitat conditions for covered species and native biodiversity, including benefiting
35 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
36 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
37 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
38 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
39 community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would
40 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
41 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
42 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
43 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

44 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.10, 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 23.3.3.10, 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, AMMs,*
44 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
45 to the extent possible so as to avoid effects on passive recreation activities such as walking,
46 picnicking, and viewing the aesthetic amenities of the area.

1 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
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 5 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 would 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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:** Effects related to temporary conflicts with recreational opportunities or experiences
22 under this alternative would be similar to those described for Alternative 1A; however, only one
23 intake location would be constructed under Alternative 5. While effects associated with this
24 alternative would therefore be anticipated to be less severe than those from Alternative 1A, long-
25 term conflicts with navigation would remain. Direct effects on boat passage and navigation on the
26 Sacramento River would result from construction of the intake. Effects could include reduced access
27 and delays to boat passage and navigation related to the narrower available river width and
28 temporary speed zones. However, boat passage volume along the corridor of the Sacramento River
29 where the intake is proposed is low. Water-based recreational activities such as waterskiing,
30 wakeboarding, or tubing are also low. In addition, there is sufficient width in the channel to allow
31 boat passage, with minor delays related to construction speed zones. Construction of only one intake
32 rather than 5 would reduce the extent of this effect on Sacramento River navigation, although the
33 effect would still be long-term because construction would last for more than 2 years. These effects
34 would be addressed with the implementation of Mitigation Measure TRANS-1a that involves the
35 BDCP proponents developing and implementing site-specific construction traffic management plans,
36 including waterway navigation elements. Nonetheless, these effects would be long-term and would be
37 considered adverse because of the reduced recreation opportunity and experiences expected to
38 exist near construction activity.

Construction of temporary barge unloading facilities would result in adverse effects on boat passage and navigation on the Sacramento River and other waterways in the study area, including the creation of obstructions to boat passage and associated boat traffic delays and temporary partial channel closures that could impede boat movement and eliminate recreational opportunities. In waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading facilities would be eliminated during construction. Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed barge operations in the waterways. Additionally, BDCP proponents would contribute funds for the construction of new recreation opportunities as well as for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment serves to compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. These commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

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

CEQA Conclusion: Impacts on boat passage and navigation in the study area would result from the construction of the intake and temporary barge unloading facilities. Impacts would last approximately 5 years and include obstruction and delays to boat passage and navigation as a result

1 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
2 closures could impede boat movement and eliminate recreational opportunities. In waterways
3 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
4 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
5 development and implementation of site-specific construction traffic management plans, including
6 specific measures related to management of barges and stipulations to notify the commercial and
7 leisure boating communities of proposed barge operations in the waterways. While the
8 environmental commitments would reduce impacts on water-based recreation (water-skiing,
9 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
10 eliminated during construction, these impacts would be long-term and considered significant and
11 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:** Effects on recreational fishing under Alternative 5 would be similar to those described
19 under Alternative 1A, Impact REC-4. However, only one intake location (Intake 1) would be
20 constructed under Alternative 5, so effects associated with construction of physical components
21 would be anticipated to be less severe.

22 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10, Sacramento River and
23 Delta region fish populations would not be affected by changes to localized water quality conditions,
24 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
25 recreational fishing opportunities would be substantially reduced during construction. BDCP
26 environmental commitments to prevent water quality effects include environmental training;
27 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
28 hazardous materials management plans, and spill prevention, containment, and countermeasure
29 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
30 *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas
31 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
32 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
33 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
34 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
35 driving. Although fish populations likely would not be affected to the degree that fishing
36 opportunities would be substantially reduced, construction conditions would introduce noise and
37 visual disturbances that would affect the recreation 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

1 also be available to address construction-related visual effects on sensitive receptors from
2 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
3 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
4 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
5 chapter identifies measures to address longer term visual effects associated with changes to the
6 landscape/visual setting from construction and the presence of new water conveyance features.
7 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
8 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
9 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
10 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
11 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
12 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
13 locations. Additionally, anglers could move to other locations along the Sacramento River and
14 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
15 sites further removed from areas affected by construction. Therefore, construction of the proposed
16 water conveyance facilities would not result in a long-term reduction of fishing opportunities. This
17 effect would not be adverse.

18 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
19 construction activities would be considered less than significant because the BDCP would include
20 environmental commitments to prevent water quality effects include environmental training;
21 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
22 hazardous materials management plans, and spill prevention, containment, and countermeasure
23 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
24 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
25 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
26 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
27 such that there would be no long-term reduction of local fishing opportunities and experiences. This
28 impact would be less than significant.

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

30 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
31 1A.

32 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 33 of Pile Driving and Other Construction-Related Underwater Noise**

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

36 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an 37 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related 38 Underwater Noise**

39 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
40 Alternative 1A, Impact AQUA-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 AES-1a: Locate New Transmission Lines and Access Routes to**
8 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
9 **Transmission Lines and Underground Transmission Lines Where Feasible**

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

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

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

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

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

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

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

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

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

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

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

31 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
32 **Landscape Plan**

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

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

3 **NEPA Effects:** Operation of Alternative 5 may result in changes in entrainment, spawning, rearing
4 and migration. However, in general, effects on (non-covered) fish species that are popular for
5 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
6 recreational fishing. While there are some significant impacts to specific non-covered species, as
7 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10, they are typically limited to
8 specific rivers and not the population of that species as a whole. The effect is not adverse because it
9 would not result in a substantial long-term reduction in recreational fishing opportunities

10 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
11 operation of Alternative 5 would be considered less than significant because any impacts to fish and,
12 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
13 not impact the species population of any popular sportfishing species overall.

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

17 **NEPA Effects:** Operation of Alternative 5 would result in changes in the frequency with which the
18 end of September reservoir levels at study area reservoirs fall below levels identified as important
19 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
20 Action Alternative (LLT-2060) (alternative operations contribution [impact] comparison) (Table 15-
21 12a and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of
22 Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
23 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
24 II model and assumptions.

25 **Existing Conditions (CEQA Baseline) Compared to Alternative 5 (2060)**

26 As shown in Table 15-12a and Table 15-12b, under Alternative 5 there would be from 3 to 28
27 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
28 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
29 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and at San Luis Reservoir. However, as
30 discussed under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations
31 are caused by sea level rise, climate change, and operation of the alternative. It is not possible to
32 specifically define the exact extent of the changes due to implementation of the action alternative
33 using these model simulation results. Thus, the precise contributions of sea level rise and climate
34 change to the total differences between Existing Conditions and Alternative 5 cannot be isolated in
35 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 5
36 (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
37 attributable to operation of Alternative 5.

38 **No Action Alternative (2060) Compared to Alternative 5 (2060)**

39 The comparison of Alternative 5 (2060) to the No Action Alternative (2060) condition most closely
40 represents changes in reservoir elevations that may occur as a result of operation of the alternative
41 because both conditions include sea level rise and climate change (see Appendix 5A,
42 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

In comparisons of Alternative 5 (2060) operations to No Action Alternative (2060), the CALSIM II modeling results indicate that reservoir levels under Alternative 5 operations, with the exception of San Luis Reservoir, would either not change or would fall below the individual reservoir thresholds less frequently than under No Action Alternative (2060) (Table 15-12a and Table 15-12b). These changes in reservoir elevations at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake would not be adverse. At Lake Oroville, Folsom Lake, and New Melones Lake, because there would be fewer years in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060) conditions, these effects would be considered beneficial effects on recreation opportunities and experiences. Operation of Alternative 5 would not adversely affect water-dependent or water-enhanced recreation at these reservoirs. At Lake Oroville, Folsom Lake, and New Melones Lake these conditions represent improved recreation conditions under operation of Alternative 5 because 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.

At San Luis Reservoir, recreation boating opportunity in September would be reduced more frequently under Alternative 5 (2060) conditions (22 years) relative to the 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 two fewer years below the threshold which would be considered a beneficial effect). Therefore, because the Basalt boat launch would still be available for access to the reservoir and there would be two fewer years in which the end-of-September reservoir elevation would fall below recreation threshold at Basalt, these changes 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.

CEQA Conclusion: This impact on water-dependent and water-enhanced recreation opportunities at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less than significant because the CALSIM II modeling results indicate that reservoir levels attributable to Alternative 5 (2060) operations would fall below the individual reservoir thresholds either with the same or reduced frequency than under the No Action Alternative (2060). These changes in reservoir elevations would result in a less-than-significant impact on recreation opportunities and experiences at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At Lake Oroville, Folsom Lake, and New Melones Lake, because there would be fewer years in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on recreation opportunities and experiences. At San Luis Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would not substantially change. The modeled two fewer years of exceeding the recreation threshold at the Basalt boat launch attributable to operation of Alternative 5 (2060) relative to the No Action Alternative (2060) would be less than significant and beneficial. Operation of Alternative 5 would not substantially affect water-dependent or water-enhanced recreation at these reservoirs. Overall, this would be a less-than-significant impact. No mitigation is required.

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

NEPA Effects: Effects related to changes to boat passage and navigation as a result of maintenance of intake facilities under Alternative 5 would be similar to those described for Alternative 1A; however,

1 maintenance activities would only be necessary for one intake facility under this alternative.
2 Maintenance would result in periodic temporary but not substantial effects on boat passage and
3 water-based recreational activities. Any effects would be short-term (less than 2 years) and
4 intermittent. Other facility maintenance activities would occur on land and would not affect boat
5 passage and navigation. Implementation of the environmental commitment to provide notification
6 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
7 would reduce these effects. These effects are not considered adverse.

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

16 **Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a 17 Result of Maintenance of the Proposed Water Conveyance Facilities**

18 **NEPA Effects:** Changes to land-based recreation opportunities as a result of maintenance of
19 conveyance facilities under Alternative 5 would be similar to those described for Alternative 1A,
20 Impact REC-8; however, under Alternative 5, only one intake facility would be constructed.
21 Maintenance would be short-term and intermittent and would be conducted within the individual
22 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
23 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
24 water conveyance facilities.

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

28 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of 29 Implementing CM2–CM21**

30 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
31 components as part of Alternative 5 could have effects related to recreational fishing that are similar
32 in nature to those discussed above for construction, and operation and maintenance of proposed
33 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
34 likely be substantially lower because the nature of the activities associated with implementing the
35 conservation components would be different—less heavy construction equipment would be
36 required and the restoration actions would be implemented over a longer time frame than CM1.
37 Potential effects from implementation of the conservation components would be dispersed over a
38 larger area and would generally involve substantially fewer construction and operation effects
39 associated with built facilities. Additionally, overall, the habitat restoration and enhancement
40 components would be expected to result in long-term benefits to aquatic species. Additional
41 discussion related to the individual conservation measures is provided below.

42 With regards to fishing opportunities, effects of implementing the conservation components under
43 Alternative 5 would be similar to those described for Alternative 1A; however, under this

1 alternative, only 25,000 acres of tidal habitat would be restored (instead of 65,000 acres under
2 other BDCP alternatives). CM2–CM21 would be expected to improve fishing opportunities in the
3 study area although some effect on fishing opportunities could take place during implementation of
4 the conservation measures. Overall, implementing the proposed conservation components would be
5 expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving
6 fishing opportunities

7 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
8 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
9 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
10 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
11 implementation stage, these measures could result in impacts on fishing opportunities by
12 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
13 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
14 onshore fishing opportunities. These impacts would be considered less than significant because the
15 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
16 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
17 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
18 fish species and although these CMs would result in highly localized reductions of predatory species,
19 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
20 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.10).

21 Construction of facilities could have short-term impacts on the noise or visual setting and could
22 indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish
23 species from construction activities would be considered less than significant because the BDCP
24 would include environmental commitments to prevent water quality effects include environmental
25 training; implementation of stormwater pollution prevention plans, erosion and sediment control
26 plans, hazardous materials management plans, and spill prevention, containment, and
27 countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan
28 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, mitigation measures and
29 environmental commitments identified to reduce the effects of constructing CM1 would also be used
30 to minimize effects of construction on recreation (i.e., visual conditions, noise,
31 transportation/access) associated with implementation of the other conservation components.
32 Because construction of the conservation measure component facilities would be less intense and of
33 shorter duration than construction of CM1 conveyance facilities, the mitigation measures and
34 environmental commitments would reduce the construction-related impacts on recreational fishing
35 associated with the other conservation measures to a less-than-significant level. Further, the
36 individual facilities or conservation elements will undergo additional environmental review and
37 permitting which will include identification of site-specific measures to further protect resources.

38 Environmental commitments that will reduce construction-related impacts on recreation include a
39 noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix
40 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2
41 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-
42 related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
43 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
44 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also
45 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
46 TRANS-1a, TRANS-1b, and TRANS-1c will address traffic and transportation safety and access

1 conditions that could affect public use of recreation areas (see additional discussion under Impact
2 REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.10). Mitigation
3 Measures NOI-1a and NOI-1b will address construction-related noise concerns (see additional
4 discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.10).
5 Finally, should construction of conservation measure facilities require pile-driving, mitigation
6 measures to protect fish and aquatic species would be implemented to reduce these impacts (see
7 additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*,
8 Section 11.3.4.10).

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

28 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
29 Construction**

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

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

33 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: Monitor Underwater Noise, and if Necessary, Use an
6 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
7 Underwater Noise**

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

10 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
11 as a Result of Implementing CM2–CM21**

12 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
13 conservation components under Alternative 5 would be similar to those described for Alternative
14 1A; however, under this Alternative, only 25,000 acres of tidal habitat would be restored (instead of
15 65,000 acres under other BDCP alternatives). Implementing the conservation measures could result
16 in an adverse effect on recreation by limiting boating by reducing the extent of navigable waterways
17 available to boaters. Once implemented, the conservation measures could provide beneficial effects
18 to recreation by expanding the extent of navigable waterways available to boaters, improving and
19 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
20 navigation.

21 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
22 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
23 site. The BDCP proponents would implement environmental commitments to include a noise
24 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
25 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
26 number of mitigation measures are available to address construction-related effects on recreational
27 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
28 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
29 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
30 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
31 TRANS-1c are available to address traffic and transportation safety and access conditions of the
32 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
33 *Transportation*, Section 19.3.3.10). Mitigation measures NOI-1a and NOI-1b are available to address
34 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
35 3, above and Chapter 23, *Noise*, Section 23.3.3.10).

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
42 experience by expanding the extent of navigable waterways available to boaters, improving and
43 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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; 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 19.3.3.10). 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 23.3.3.10). 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 a less-than-significant level. 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.

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

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

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

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

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

Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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 CM2–CM21**

9 **NEPA Effects:** Implementing the conservation components under Alternative 5 would have similar
10 impacts on upland recreation activities as those described for Alternative 1A; however, under this
11 Alternative, only 25,000 acres of tidal habitat would be restored (instead of 65,000 acres under
12 other BDCP alternatives). Implementing the conservation measures could result in an adverse effect
13 on recreation opportunities by reducing the extent of upland recreation sites and activities. Once
14 implemented, the conservation measures could adversely affect recreation by reducing the extent of
15 upland areas suitable for hiking, nature photography, or other similar activity. However,
16 environmental commitments would reduce these effects, and implementation of the measures
17 would also restore or enhance new potential sites for upland recreation thereby improving the
18 quality recreational opportunities. CM17–CM21 involve enforcement, management, or other
19 individual, localized project components that would not affect upland recreation opportunities.
20 CM17 is an enforcement funding mechanism and would not result in a physical change to upland
21 areas; construction under CM18, CM19, or CM21 would not affect existing upland recreation areas;
22 and CM20 is an enforcement action primarily located at boat launches and would not affect upland
23 recreation areas and related opportunities. These measures are not discussed further in this
24 analysis.

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, angling, and hunting opportunities, as
34 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
35 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
36 upland recreation and the measure would improve the quality of existing recreational opportunities
37 adjacent to areas modified by the conservation measures. These measures would not be anticipated
38 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
39 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 5 would generally have the same potential for incompatibilities with one or more plans
6 and policies related to protecting recreation opportunities in the study area as described for
7 Alternative 1A, Impact AES-12. The primary differences under Alternative 5 are that only Intake 1
8 would be constructed and the Byron Tract Forebay would be 200 acres instead of 600 acres. As
9 described under Alternative 1A, there would be potential for the alternative to be incompatible with
10 plans and policies related to protecting and promoting recreation opportunities in the study area
11 (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992, *Delta Protection*
12 *Commission Land Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan,*
13 *Brannan Island and Franks Tract State Recreation Areas General Plan*). In addition, with the
14 exception of Solano County, the alternative may be incompatible with county general plan policies
15 that protect recreation resources in the study area.

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

20 **15.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and
21 Intakes 1–5 (15,000 cfs; Operational Scenario D)**

22 For the purposes of assessment of effects on recreation, Alternative 6A is the same as Alternative 1A,
23 with the following exceptions.

- 24 • Alternative 6A utilizes isolated conveyance.
- 25 • Alternative 6A has a different operational scenario (scenario D).

26 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
27 Alternative 6A. No recreation sites fall within the construction footprint (Mapbook Figure M15-1).
28 Specific effects on recreation areas or sites are discussed under Alternative 1A.

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

32 **NEPA Effects:** The effects of permanent displacement of existing recreational facilities as a result of
33 the location of the water conveyance facilities would be the same as those described under
34 Alternative 1A, Impact REC-1. Proposed placement of the Alternative 6A water conveyance facilities
35 would not fall within the designated boundaries or conflict with any existing public use recreation
36 site and would not result in the permanent disruption or reduction of any well-established
37 recreation activity or site, including parks, marinas, or other designated areas. Therefore, there
38 would be no adverse effects. Effects on recreation related to construction of the water conveyance
39 facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and Visual Resources*,
40 Section 17.3.3.11, and Chapter 23, *Noise*, Section 23.3.3.11, 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:** The temporary conflicts between recreational opportunities and the construction of
8 conveyance facilities under Alternative 6A would be the same as those described under Alternative
9 1A, Impact REC-2. Construction of Alternative 6A intakes and water conveyance facilities would
10 result in temporary effects related to disruption of well-established recreational opportunities and
11 experiences in the study area during construction. Indirect effects on recreation experience may
12 occur as a result of impaired access, construction noise, or negative visual effects associated with
13 construction.

14 ***Other Recreation Opportunities***

15 ***On-Water Recreation***

16 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
17 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
18 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
19 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
20 outside of the impact area for noise, the overall recreation experience upstream or downstream of
21 these sites may fall within the noise impact area and could experience diminished recreation
22 opportunities because of the elevated noise levels as well as visual setting disruptions over the
23 course of intake installation. Overall, construction activities associated with the proposed water
24 conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would
25 primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be
26 further limited primarily to June 1 through October 31 each year. Although dewatering would take
27 place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday
28 construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of
29 the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing
30 recreationists to experience a changed recreation setting.

31 ***Campgrounds***

32 Nighttime construction activities would require the use of bright lights that would negatively affect
33 nighttime views of and from the work area. This would affect any overnight camping at the
34 recreation sites and areas discussed above, although day use areas that close at sunset would not be
35 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
36 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
37 23.3.3.11, another nighttime effect on recreation would be construction noise levels that could
38 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
39 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
40 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
41 Measures NOI-1a and NOI-1b would be available to address these effects.

1 **Summary**

2 Overall, construction may occur year-round and last up from 1 to 5 years at individual construction
3 sites near recreation sites or areas and in-river construction activities would be primarily limited to
4 June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section
5 12.3.3.11, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.11, Chapter 19, *Transportation*,
6 Section 19.3.3.11, and Chapter 23, *Noise*, Section 23.3.3.11, for additional detail related to
7 waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer
8 to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation
9 sites or areas within the construction impact area.

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

42 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.11, identifies a number of mitigation
43 measures that would be available to address construction-related visual effects on sensitive
44 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
45 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
46 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In

addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). DWR would also make a commitment to enhance the visual character of the area by creating new wildlife viewing sites and enhancing interest in the construction site by constructing viewing areas and displaying information about the project, which may attract people who may use the recreation facilities to the construction site as part of the visit.

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

As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.

Chapter 23, *Noise*, Section 23.3.3.11, discusses that construction noise effects could be addressed through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and implementation of a complaint/response tracking program (NOI-1b), and an environmental commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities such as walking, picnicking, and viewing the aesthetic amenities of the area.

In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-2 would ensure continued access to existing recreation experiences. The Delta offers many

1 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
2 all of which would continue to be available for recreationists. However, due to the length of time that
3 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
4 related to temporary disruption of existing recreational activities at facilities within the impact area
5 would be adverse.

6 **CEQA Conclusion:** Construction of Alternative 6A intakes and related water conveyance facilities
7 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
8 years) impacts on well-established recreational opportunities and experiences in the study area
9 because of access, noise, and visual setting disruptions that could result in loss of public use. These
10 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
11 commitments, and AMMs would reduce these construction-related impacts by implementing
12 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
13 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
14 and implement noise reduction and complaint tracking measures. However, the level of impact
15 would not be reduced to less than significant because even though mitigation measures and
16 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
17 and noise conditions that could detract from the recreation experience, due to the dispersed effects
18 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
19 of these impacts to less than significant in all instances such that there would be no reduction of
20 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
21 considered significant and unavoidable. However, the impacts related to construction of the intakes
22 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
25 1A.

26 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 27 Disturbance of Nesting Birds**

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

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

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

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

37 Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*,
38 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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:** Under this alternative, recreational boat navigation would be affected to the same
22 extent as described under Alternative 1A, Impact REC-3.

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 speed zones. However, boat
26 passage volume along the corridor of the Sacramento River where intakes are proposed is low.
27 Water-based recreational activities such as waterskiing, wakeboarding, or tubing fishing are also
28 low. In addition, there is sufficient width in the channel to allow boat passage, with minor delays
29 related to construction speed zones. These effects on boat passage and navigation would be reduced
30 with the implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents
31 developing and implementing site-specific construction traffic management plans, including
32 waterway navigation elements and providing notification of construction activities in waterways.

33 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
34 and navigation on the Sacramento River and other waterways in the study area, including the
35 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
36 channel closures that could impede boat movement and eliminate recreational opportunities. In
37 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
38 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation

Measure TRANS-1a would be available to reduce effects to marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed barge operations in the waterways. Additionally, BDCP proponents would contribute funds for the construction of new recreation opportunities as well as for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment serves to compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. These commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

CM13 Invasive Aquatic Vegetation Control and the environmental commitments would create and rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP proponents would also ensure through various outreach methods that recreationists were aware of nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered adverse because of the reduced recreation opportunity and experiences expected to exist near construction activity.

CEQA Conclusion: Impacts on boat passage and navigation in the study area would result from the construction of the intakes and temporary barge unloading facilities. Impacts would last approximately 5 years and include obstruction and delays to boat passage and navigation as a result of channel obstructions in addition to compliance with temporary speed zones. Temporary channel closures could impede boat movement and eliminate recreational opportunities. In waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by development and implementation of site-specific construction traffic management plans, including

specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed barge operations in the waterways. While the environmental commitments would reduce impacts on water-based recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those eliminated during construction, these impacts would be long-term and considered significant and unavoidable.

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

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

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

NEPA Effects: Effects on recreational fishing under Alternative 6A would be the same as those described under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11, Sacramento River and Delta region fish populations would not be affected by changes to localized water quality conditions, underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that recreational fishing opportunities would be substantially reduced during construction. BDCP environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport fish populations from impact pile driving. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers.

While construction noise would be temporary, and primarily be limited to Monday through Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual setting disruptions could distract from the recreation experience including on weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would also be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic

design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water conveyance facilities would not degrade the fishing experience for boat and on-shore fishing locations. Additionally anglers could move to other locations along the Sacramento River and throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access sites further removed from areas affected by construction. Therefore, construction of the proposed water conveyance facilities would not result in a long-term reduction of fishing opportunities. This effect would not be adverse.

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations such that there would be no long-term reduction of local fishing opportunities and experiences. This impact would be less than significant.

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

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

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

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

Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related Underwater Noise

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

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

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

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

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 6A 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 11.3.4.11, they are typically limited to
36 specific rivers and not the population of that species as a whole. The effect is not adverse because it
37 would not result in a substantial long-term reduction in recreational fishing opportunities

1 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
 2 operation of Alternative 6A would be considered less than significant because any impacts to fish
 3 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
 4 would not impact the species population of any popular sportfishing species overall.

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 **NEPA Effects:** Operation of Alternative 6A would result in changes in the frequency with which the
 9 end-of-September reservoir levels at study area reservoirs fall below levels identified as important
 10 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 11 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 12 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 13 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 14 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
 15 II model and assumptions.

16 **Existing Conditions (CEQA Baseline) Compared to Alternative 6A (2060)**

17 As shown in Table 15-12a and Table 15-12b, under Alternative 6A there would be from 3 to 64
 18 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 19 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 20 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
 21 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
 22 climate change, and operation of the alternative. It is not possible to specifically define the exact
 23 extent of the changes due to implementation of the action alternative using these model simulation
 24 results. Thus, the precise contributions of sea level rise and climate change to the total differences
 25 between Existing Conditions and Alternative 6A cannot be isolated in this comparison. Please refer
 26 to the comparison of the No Action Alternative (2060) to Alternative 6A (2060) for a discussion of
 27 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
 28 Alternative 6A.

29 **No Action Alternative (2060) Compared to Alternative 6A (2060)**

30 The comparison of Alternative 6A (2060) to the No Action Alternative (2060) condition most closely
 31 represents changes in reservoir elevations that may occur as a result of operation of the alternative
 32 because both conditions include sea level rise and climate change (see Appendix 5A,
 33 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

34 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6A would result in changes in
 35 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
 36 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
 37 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
 38 the CALSIM II modeling results indicate that reservoir levels under Alternative 6A (2060) operations
 39 would fall below the individual reservoir thresholds less frequently than under No Action
 40 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
 41 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
 42 beneficial effects on recreation opportunities and experiences because there would be fewer years
 43 in which the lake levels fall below the recreation threshold relative to the No Action Alternative

(2060). Operation of Alternative 6A would not adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation conditions under operation of Alternative 6A because 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.

The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to the No Action Alternative (2060) condition for which the reservoir level would fall below the reservoir boating threshold at the end of September 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) conditions (there would be three additional years). This is a less than 10% change (8 years or less) and would not be considered a substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would still be available for access to the reservoir, these changes 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.

CEQA Conclusion: This impact on water-dependent and water-enhanced recreation opportunities at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less than significant because the CALSIM II modeling results indicate that reservoir levels attributable to Alternative 6A (2060) operations would fall below the individual reservoir thresholds less frequently than under No Action Alternative (2060). Because there would be fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts would be considered beneficial impacts on recreation opportunities and experiences. At San Luis Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would not substantially change. The modeled additional three years of exceeding the recreation threshold attributable to operation of Alternative 6A (2060) relative to the No Action Alternative (2060) would be less than significant because it is a less than 10% change (8 years or less). This would be a less-than-significant impact. No mitigation is required. Operation of Alternative 6A would not substantially affect water-dependent or water-enhanced recreation at these reservoirs.

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

NEPA Effects: Effects of facility maintenance activities on water-based recreation under Alternative 6A would be similar to those described under Alternative 1A, Impact REC-7, and would result in periodic temporary but not substantial effects on boat passage and water-based recreational activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility maintenance activities would occur on land and would not affect boat passage and navigation. Implementation of the environmental commitment to provide notification of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would reduce these effects. These effects are not considered adverse.

CEQA Conclusion: Effects on recreation resulting from the maintenance of intake facilities would be short-term and intermittent and would not result in significant impacts on boat passage, navigation, or water-based recreation within the vicinity of the intakes. In addition, implementation of the environmental commitment to provide notification of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) would further minimize these effects.

1 Intake maintenance impacts on recreation would be considered less than significant because
2 impacts, if any, on public access or public use of established recreation facilities would last for 2
3 years or less. Mitigation is not required.

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

6 **NEPA Effects:** Changes to land-based recreation under Alternative 6A would be the same as those
7 described for Alternative 1A, Impact REC-8. Maintenance would be short-term and intermittent and
8 would be conducted within the individual facility right-of-way, which does not include any
9 recreation facilities or recreation use areas. There would be no adverse effects on recreation
10 opportunities as a result of maintenance of the proposed water conveyance facilities.

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

14 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of
15 Implementing CM2–CM21**

16 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
17 components as part of Alternative 6A could have effects related to recreational fishing that are
18 similar in nature to those discussed above for construction, and operation and maintenance of
19 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
20 effects would likely be substantially lower because the nature of the activities associated with
21 implementing the conservation components would be different—less heavy construction equipment
22 would be required and the restoration actions would be implemented over a longer time frame than
23 CM1. Potential effects from implementation of the conservation components would be dispersed
24 over a larger area and would generally involve substantially fewer construction and operation
25 effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement
26 components would be expected to result in long-term benefits to aquatic species. Additional
27 discussion related to the individual conservation measures is provided below.

28 With regards to fishing opportunities, effects of implementing the conservation components under
29 Alternative 6A would be similar to those described for Alternative 1A. CM2–CM21 would be
30 expected to improve fishing opportunities in the study area although some effect on fishing
31 opportunities could take place during implementation of the conservation measures. Overall,
32 implementing the proposed conservation components would be expected to provide beneficial
33 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

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 Plan

(Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly localized reductions of predatory species, overall, these measures would not result in an appreciable decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11).

Construction of facilities could have short-term impacts on the noise or visual setting and could indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). In addition, mitigation measures and environmental commitments identified to reduce the effects of constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of the other conservation components.

Because construction of the conservation measure component facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; 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 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.11). 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 23.3.3.11). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.11).

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

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
20 of Pile Driving and Other Construction-Related Underwater Noise**

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

23 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an
24 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
25 Underwater Noise**

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

28 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
29 as a Result of Implementing CM2–CM21**

30 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
31 conservation components under Alternative 6A would be similar to those described for Alternative
32 1A. Implementing the conservation measures could result in an adverse effect on recreation by
33 limiting boating by reducing the extent of navigable waterways available to boaters. Once
34 implemented, the conservation measures could provide beneficial effects to recreation by expanding
35 the extent of navigable waterways available to boaters, improving and expanding boat launch
36 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; 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, AES-4c, and AES-4d; 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 19.3.3.11). 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 23.3.3.11).

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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.11). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.11). 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 a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

26 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
27 **Result of Implementing CM2–CM21**

28 **NEPA Effects:** Implementing the conservation components under Alternative 6A would have similar
29 impacts on upland recreation activities as those described for Alternative 1A, Impact REC-11.
30 Implementing the conservation measures could result in an adverse effect on recreation
31 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
32 the conservation measures could adversely affect recreation by reducing the extent of upland areas
33 suitable for hiking, nature photography, or other similar activity. However, environmental
34 commitments would reduce these effects, and implementation of the measures would also restore
35 or enhance new potential sites for upland recreation thereby improving the quality recreational
36 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
37 components that would not affect upland recreation opportunities. CM17 is an enforcement funding

1 mechanism and would not result in a physical change to upland areas; construction under CM18,
 2 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 3 action primarily located at boat launches and would not affect upland recreation areas and related
 4 opportunities. These measures are not discussed further in this analysis.

5 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 6 conservation measures would temporarily limit opportunities for upland recreational activities
 7 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 8 construction activities would also temporarily compromise the quality of upland recreation in and
 9 around these areas. Additionally, it is possible that current areas of upland recreation would be
 10 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 11 activities. These impacts on upland recreational opportunities would be considered less than
 12 significant because the BDCP would include environmental commitments that would require BDCP
 13 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 14 described in Recommendation DP R14 of the Delta Plan (*Appendix 3B, Environmental Commitments,*
 15 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 16 upland recreation and the measure would improve the quality of existing recreational opportunities
 17 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 18 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 19 considered less than significant.

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

23 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 24 Alternative 6A would generally have the same potential for incompatibilities with one or more plans
 25 and policies related to protecting and promoting recreation opportunities in the study area as
 26 described for Alternative 1A, Impact AES-12. As described under Alternative 1A, there would be
 27 potential for the alternative to be incompatible with plans and policies related to recreation
 28 opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of
 29 1992, *Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of*
 30 *the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas General Plan*). In
 31 addition, with the exception of Solano County, the alternative may be incompatible with county
 32 general plan policies that protect visual resources in 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 **15.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and** 38 **Intakes 1–5 (15,000 cfs; Operational Scenario D)**

39 For the purposes of assessment of effects on recreation, Alternative 6B is the same as Alternative 1B,
 40 with the following exceptions.

- 41 • Alternative 6B utilizes isolated conveyance.
- 42 • Alternative 6B has a different operational scenario (scenario D).

1 Table 15-13 under Alternative 1B lists the recreation sites and areas that may be affected by
 2 Alternative 6B (Mapbook Figure M15-2). Specific effects on recreation areas or sites are discussed
 3 under Alternative 1B.

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

7 **NEPA Effects:** The effects of permanent displacement of existing recreational facilities as a result of
 8 the location of the water conveyance facilities under Alternative 6B would be the same as those
 9 described under Alternative 1B, Impact REC-1. Proposed placement of the Alternative 6B water
 10 conveyance facilities may fall within the boundaries of Stone Lakes NWR, Cosumnes River Preserve,
 11 and White Slough Wildlife Area Pond 6 (Table 15-13 and Mapbook Figure M15-2); however,
 12 permanent placement of these facilities would not result in long-term disruption or reduction of any
 13 well-established recreation activity or site, including parks, marinas, or other designated areas.
 14 Therefore, there would be no adverse effects. Effects on recreation related to construction of the
 15 water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and*
 16 *Visual Resources*, Section 17.3.3.12, and Chapter 23, *Noise*, Section 23.3.3.12, for additional
 17 discussion of these topics.

18 **CEQA Conclusion:** Alternative 6B would not locate alternative facilities that would result in the
 19 permanent displacement of any well-established public use or private commercial recreation facility
 20 available for public access. Therefore, impacts are considered less than significant. No mitigation is
 21 required.

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

24 **NEPA Effects:** The temporary conflicts between recreational opportunities and the construction of
 25 conveyance facilities would be the same as those described under Alternative 1B, Impact REC-2.
 26 Construction of Alternative 6B intakes and proposed water conveyance facilities would result in
 27 temporary short-term and long-term effects related to disruption of well-established recreational
 28 opportunities and experiences in the study area. Indirect effects on recreation experiences may
 29 occur as a result of impaired access, construction noise, or negative visual effects associated with
 30 construction.

31 **Other Recreation Opportunities**

32 **On-Water Recreation**

33 Cliff's Marina is upstream of Intake 1 construction area. Similarly, Lazy M Marina and Rivers End
 34 Marina & Boat Storage sites are not within the construction impact area for the Byron Tract Forebay
 35 and related facilities near Clifton Court Forebay. Although these facilities and other marinas or
 36 fishing sites fall outside of the impact area for noise, the overall recreation experience upstream or
 37 downstream of these sites may fall within the noise impact area and could experience diminished
 38 recreation opportunities because of the elevated noise levels as well as visual setting disruptions
 39 over the course of intake installation. Overall, construction activities associated with the proposed
 40 water conveyance facilities would range from 1 year to up to 5 years depending on the site. Work
 41 would primarily occur Monday through Friday for up to 24 hours per day. In-river construction
 42 would be further limited primarily to June 1 through October 31 each year. Although dewatering

would take place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to experience a changed recreation setting.

Campgrounds

Nighttime construction activities would require the use of bright lights that would negatively affect nighttime views of and from the work area. This would affect any overnight camping at the recreation sites and areas discussed above, although day use areas that close at sunset would not be adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.3.3.12, another nighttime effect on recreation would be construction noise levels that could adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime construction could be infrequent and intermittent, but would adversely affect camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and NOI-1b would be available to address these effects.

Summary

Overall, construction may occur year-round and last from 1 to 5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year. As discussed in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.2, construction could have an adverse effect on waterfowl if they were present in or adjacent to work areas and could result in destruction of nests or disturbance of nesting and foraging behaviors. These effects could indirectly affect recreational wildlife viewing and hunting in the study area; however, mitigation measures, environmental commitments, and conservation measures would provide several benefits to waterfowl habitat, which would result in increased recreational opportunities. Mitigation Measure BIO-75, *Conduct preconstruction nesting bird surveys and avoid disturbance of nesting birds*, would be available to address these effects. In addition, in areas near greater sandhill crane habitat, construction-related disturbances (noise and visual), installation of transmission lines, or habitat degradation associated with accidental spills, runoff and sedimentation, and dust could have adverse effects on sandhill cranes and related recreational viewing opportunities. These effects on sandhill crane would be minimized with implementation of AMM20 *Greater Sandhill Crane* and AMM31 *Noise Abatement*. These measures, designed to avoid and minimize effects on greater sandhill crane, would be implemented by the BDCP proponents where determined necessary for all covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Materials could be reused for purposes such as flood protection, habitat restoration, subsidence reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species and native biodiversity, including benefiting migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed wetland,

1 and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The
2 reserve system would comprise more than 170 miles of trail (25 of which would be new), 4 picnic
3 areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat launch
4 facility within the footprint of the North Delta diversion facilities. Permitted activities will include
5 hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting,
6 fishing, and boating.

7 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.12, identifies a number of mitigation
8 measures that would be available to address construction-related visual effects on sensitive
9 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
10 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
11 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
12 addition, the chapter identifies measures to address longer term visual effects associated with
13 changes to the landscape/visual setting from construction and the presence of new water
14 conveyance features. These include developing and implementing a spoil/borrow and RTM area
15 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
16 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
17 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
18 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
19 would also make a commitment to enhance the visual character of the area by creating new wildlife
20 viewing sites and enhancing interest in the construction site by constructing viewing areas and
21 displaying information about the project, which may attract people who may use the recreation
22 facilities to the construction site as part of the visit.

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

34 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
35 involve preparation of site-specific construction traffic management plans that would address
36 potential public access routes and provide construction information notification to local residents
37 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
38 of access to affected recreation areas as an environmental commitment. Where construction
39 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
40 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
41 construction sites. These would be designed to be safe, pleasant and would integrate with
42 opportunities to view the construction site as an additional area of interest. These physical facilities
43 would be combined with public information, including sidewalk wayfinding information that would
44 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
45 limit construction hours or activities and prohibit construction vehicle trips on congested roadway

1 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
2 congested roadway segments.

3 Chapter 23, *Noise*, Section 23.3.3.12, discusses that construction noise effects could be addressed
4 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
5 implementation of a complaint/response tracking program (NOI-1b), and an environmental
6 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
7 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
8 to the extent possible so as to avoid effects on passive recreation activities such as walking,
9 picnicking, and viewing the aesthetic amenities of the area.

10 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
11 2 would ensure continued access to existing recreation experiences. The Delta offers many
12 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
13 all of which would continue to be available for recreationists. However, due to the length of time that
14 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
15 related to temporary disruption of existing recreational activities at facilities within the impact area
16 would be adverse.

17 **CEQA Conclusion:** Construction of the Alternative 6B intakes and related water conveyance facilities
18 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
19 years) impacts on well-established recreational opportunities and experiences in the study area
20 because of access, noise, and visual setting disruptions that could result in loss of public use. These
21 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
22 commitments, and AMMs would reduce these construction-related impacts by implementing
23 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
24 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
25 and implement noise reduction and complaint tracking measures. However, the level of impact
26 would not be reduced to less than significant because even though mitigation measures and
27 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
28 and noise conditions that could detract from the recreation experience, due to the dispersed effects
29 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
30 of these impacts to less than significant in all instances such that there would be no reduction of
31 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
32 considered significant and unavoidable. However, the impacts related to construction of the intakes
33 would be less than significant.

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

35 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
36 1A.

37 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 38 Disturbance of Nesting Birds**

39 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
40 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

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

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

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

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

32 **NEPA Effects:** Under this Alternative, recreational boat navigation would be affected to the same
33 extent as under Alternative 1B, Impact REC-3. Changes to boat passage and navigation on the
34 Sacramento River in the vicinity of the intakes, barge unloading facilities and the siphons would
35 result in adverse direct and indirect effects on recreational navigation in the affected waterways.

1 Direct effects would result from the creation of obstructions to boat passage and associated boat
2 traffic delays and temporary channel closures that could impede boat movement. Changes to boat
3 passage would also result in effects on recreational navigation and water-based recreation activities
4 such as wakeboarding, waterskiing, and tubing. Although there may be short delays in boat passage,
5 access to the affected waterways would be maintained. The sloughs where siphons would cross do
6 not support large boat traffic volumes and construction activities would not result in substantial
7 adverse effects. However, because boat passage and navigation would be disrupted, effects are
8 considered adverse. Mitigation Measure TRANS-1a would be available to reduce effects to marine
9 navigation by development and implementation of site-specific construction traffic management
10 plans, including specific measures related to management of barges and stipulations to notify the
11 commercial and leisure boating communities of proposed barge operations in the waterways.
12 Additionally, BDCP proponents would contribute funds for the construction of new recreation
13 opportunities as well as for the protection of existing recreation opportunities as outlined in
14 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. Potential uses of these funds could be for the reopening of Brannan Island State
17 Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new
18 State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds
19 will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This
20 commitment serves to compensate for the loss of recreational opportunities within the project area
21 by providing a recreational opportunity downstream/upstream in the same area for the same
22 regional recreational users. These commitments are further described in Appendix 3B,
23 *Environmental Commitments, AMMs, and CMs.*

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

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

1 **CEQA Conclusion:** Alternative 1B would result in significant impacts on boat passage and navigation
2 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
3 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
4 boat traffic delays and impediments to boat movement. Changes to boat passage and navigation
5 would also result in temporary impacts on wakeboarding, waterskiing and tubing because of
6 reduced speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on
7 marine navigation by development and implementation of site-specific construction traffic
8 management plans, including specific measures related to management of barges and stipulations to
9 notify the commercial and leisure boating communities of proposed barge operations in the
10 waterways. While the environmental commitments would reduce impacts on water-based
11 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
12 opportunities for those eliminated during construction, these impacts would be long-term and
13 considered significant and unavoidable.

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

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

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

20 **NEPA Effects:** Effects on recreational fishing under Alternative 6B would be similar to those
21 described under Alternative 1A, Impact REC-4.

22 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12, Sacramento River and
23 Delta region fish populations would not be affected by changes to localized water quality conditions,
24 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
25 recreational fishing opportunities would be substantially reduced during construction. BDCP
26 environmental commitments to prevent water quality effects include environmental training;
27 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
28 hazardous materials management plans, and spill prevention, containment, and countermeasure
29 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
30 *Environmental Commitments, AMMs, and CMs*). RTM would be removed from RTM storage areas
31 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
32 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
33 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
34 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
35 driving. Although fish populations likely would not be affected to the degree that fishing
36 opportunities would be substantially reduced, construction conditions would introduce noise and
37 visual disturbances that would affect the recreation 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

1 also be available to address construction-related visual effects on sensitive receptors from
2 vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers
3 between construction work areas and sensitive receptors (AES-1b), and locating concrete batch
4 plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the
5 chapter identifies measures to address longer term visual effects associated with changes to the
6 landscape/visual setting from construction and the presence of new water conveyance features.
7 These include developing and implementing a spoil/borrow and RTM area management plan (AES-
8 1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic
9 design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants
10 and fuel stations upon removal of facilities (AES-1f), and implementing best management practices
11 to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water
12 conveyance facilities would not degrade the fishing experience for boat and on-shore fishing
13 locations. Additionally, anglers could move to other locations along the Sacramento River and
14 throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access
15 sites further removed from areas affected by construction. Therefore, construction of the proposed
16 water conveyance facilities would not result in a long-term reduction of fishing opportunities. This
17 effect would not be adverse.

18 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
19 construction activities would be considered less than significant because the BDCP would include
20 environmental commitments to prevent water quality effects include environmental training;
21 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
22 hazardous materials management plans, and spill prevention, containment, and countermeasure
23 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
24 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
25 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
26 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
27 such that there would be no long-term reduction of local fishing opportunities and experiences. This
28 impact would be less than significant.

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

30 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
31 1A.

32 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects 33 of Pile Driving and Other Construction-Related Underwater Noise**

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

36 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an 37 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related 38 Underwater Noise**

39 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
40 Alternative 1A, Impact AQUA-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 AES-1a: Locate New Transmission Lines and Access Routes to**
8 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
9 **Transmission Lines and Underground Transmission Lines Where Feasible**

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

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

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

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

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

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

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

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

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

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

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

31 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
32 **Landscape Plan**

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

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

3 **NEPA Effects:** Operation of Alternative 6B may result in changes in entrainment, spawning, rearing
4 and migration. However, in general, effects on (non-covered) fish species that are popular for
5 recreational fishing as a result of these changes are not of a nature/level that will adversely affect
6 recreational fishing. While there are some significant impacts to specific non-covered species, as
7 discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12, they are typically limited to
8 specific rivers and not the population of that species as a whole. The effect is not adverse because it
9 would not result in a substantial long-term reduction in recreational fishing opportunities

10 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
11 operation of Alternative 6B would be considered less than significant because any impacts to fish
12 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
13 would not impact the species population of any popular sportfishing species overall.

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

17 **NEPA Effects:** Operation of Alternative 6B would be the same as Alternative 6A and would primarily
18 result in small changes in the frequency with which the end of September reservoir levels at Trinity
19 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels
20 identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir show
21 greater difference when compared to the no action conditions than projected for the other
22 reservoirs. See Table 15-12a and Table 15-12b. Also see Chapter 3, *Description of Alternatives*,
23 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
24 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
25 model and assumptions.

26 **Existing Conditions (CEQA Baseline) Compared to Alternative 6B (2060)**

27 As shown in Table 15-12a and Table 15-12b, under Alternative 6B there would be from 3 to 64
28 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
29 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
30 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
31 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
32 climate change, and operation of the alternative. It is not possible to specifically define the exact
33 extent of the changes due to implementation of the action alternative using these model simulation
34 results. Thus, the precise contributions of sea level rise and climate change to the total differences
35 between Existing Conditions and Alternative 6B cannot be isolated in this comparison. Please refer
36 to the comparison of the No Action Alternative (2060) to Alternative 6B (2060) for a discussion of
37 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
38 Alternative 6B.

1 No Action Alternative (LLT-2060) Compared to Alternative 6B (2060)

2 The comparison of Alternative 6B (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,
5 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

6 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6B would result in changes in
7 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
8 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
9 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
10 the CASIM II modeling results indicate that reservoir levels under Alternative 6B (2060) operations
11 would fall below the individual reservoir thresholds less frequently than under No Action
12 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
13 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
14 beneficial effects on recreation opportunities and experiences because there would be fewer years
15 in which the lake levels fall below the recreation threshold relative to the No Action Alternative
16 (2060). Operation of Alternative 6B would not adversely affect water-dependent or water-enhanced
17 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
18 under operation of Alternative 6B because there would be fewer years in which end-of-September
19 reservoir levels would fall below the recreation thresholds thus indicating better boating
20 opportunities, when compared to No Action Alternative (2060) conditions.

21 The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to
22 the No Action Alternative (2060) condition for which the reservoir level would fall below the
23 reservoir boating threshold at the end of September for the Dinosaur Point boat launch. However,
24 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
25 substantially change relative to the No Action Alternative (2060) conditions (there would be three
26 additional years). This is a less than 10% change (8 years or less) and would not be considered a
27 substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would
28 still be available for access to the reservoir, these changes would not be adverse. Shoreline fishing
29 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
30 and fishing—would be available. These changes would not be adverse.

31 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
32 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
33 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
34 Alternative 6B (2060) operations would fall below the individual reservoir thresholds less
35 frequently than under No Action Alternative (2060). Because there would be fewer years in which
36 the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative
37 (2060) conditions, these impacts would be considered beneficial impacts on recreation
38 opportunities and experiences. At San Luis Reservoir, although boating opportunity would be
39 reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would
40 not substantially change. The modeled additional three years of exceeding the recreation threshold
41 attributable to operation of Alternative 6B (2060) relative to the No Action Alternative (2060)
42 would be less than significant because it is a less than 10% change (8 years or less). This would be a
43 less-than-significant impact. No mitigation is required. Operation of Alternative 6B would not
44 substantially affect water-dependent or water-enhanced recreation at these reservoirs.

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

3 **NEPA Effects:** Effects of facility maintenance activities on water-based recreation under Alternative
4 6B would be similar to those described under Alternative 1A, Impact REC-7, and would result in
5 periodic temporary but not substantial effects on boat passage and water-based recreational
6 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
7 maintenance activities would occur on land and would not affect boat passage and navigation.
8 Implementation of the environmental commitment to provide notification of maintenance activities
9 in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*) would reduce these
10 effects. These effects are not considered adverse.

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

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

21 **NEPA Effects:** Changes to land-based recreation under Alternative 6B would be the same as those
22 described for Alternative 1B, Impact REC-8 and would not affect recreation opportunities. The right-
23 of-way under Alternative 6B includes the Stone Lakes NWR, White Slough Wildlife Area, and
24 Cosumnes River Preserve; however, the lands in the Stone Lakes NWR and Cosumnes River Preserve
25 in the right-of-way are not used for recreation, so there would be no effects on recreation
26 opportunities. In the White Slough Wildlife Area (Pond 6) there would be a bridge right-of-way;
27 facility maintenance activities would be restricted to roadway maintenance and would not affect
28 recreation opportunities in the wildlife area. Maintenance would be short-term and intermittent and
29 there would be no long-term change to recreation opportunities as a result of maintenance of
30 conveyance facilities. There would be no adverse effects.

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

34 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
35 **Implementing CM2–CM21**

36 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
37 components as part of Alternative 6B could have effects related to recreational fishing that are
38 similar in nature to those discussed above for construction, and operation and maintenance of
39 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
40 effects would likely be substantially lower because the nature of the activities associated with
41 implementing the conservation components would be different—less heavy construction equipment
42 would be required and the restoration actions would be implemented over a longer time frame than
43 CM1. Potential effects from implementation of the conservation components would be dispersed

over a larger area and would generally involve substantially fewer construction and operation effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement components would be expected to result in long-term benefits to aquatic species. Additional discussion related to the individual conservation measures is provided below.

With regards to fishing opportunities, effects of implementing the conservation components under Alternative 6B would be similar to those described for Alternative 1B, Impact REC-9. CM2–CM21 would be expected to improve fishing opportunities in the study area although some effect on fishing opportunities could take place during implementation of the conservation measures. Overall, implementing the proposed conservation components would be expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving fishing opportunities

CEQA Conclusion: CM2–CM21 in the long-term would be expected to improve fishing opportunities by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators; controlling illegal harvest of covered species; and expanding boat launch facilities. During the implementation stage, these measures could result in impacts on fishing opportunities by temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased onshore fishing opportunities. These impacts would be considered less than significant because the BDCP would include environmental commitments 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, AMMs, and CMs*). CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly localized reductions of predatory species, overall, these measures would not result in an appreciable decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12).

Construction of facilities could have short-term impacts on the noise or visual setting and could indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B). In addition, mitigation measures and environmental commitments identified to reduce the effects of constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of the other conservation components. Because construction of the conservation measure component facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at

construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.12). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.12). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.12).

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

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.

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

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

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

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

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

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

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

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

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

Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

28 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
29 **Construction**

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

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

33 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: Monitor Underwater Noise, and if Necessary, Use an
6 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
7 Underwater Noise**

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

10 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
11 as a Result of Implementing CM2–CM21**

12 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
13 conservation components under Alternative 6B would be similar to those described for Alternative
14 1B. Implementing the conservation measures could result in an adverse effect on recreation by
15 limiting boating by reducing the extent of navigable waterways available to boaters. Once
16 implemented, the conservation measures could provide beneficial effects to recreation by expanding
17 the extent of navigable waterways available to boaters, improving and expanding boat launch
18 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

19 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
20 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
21 site. The BDCP proponents would implement environmental commitments to include a noise
22 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
23 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
24 number of mitigation measures are available to address construction-related effects on recreational
25 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
26 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
27 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
28 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
29 TRANS-1c are available to address traffic and transportation safety and access conditions of the
30 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
31 *Transportation*, Section 19.3.3.12). Mitigation Measures NOI-1a and NOI-1b are available to address
32 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
33 3, above and Chapter 23, *Noise*, Section 23.3.3.12).

34 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
35 some habitat restoration and enhancement measures and other conservation measures would limit
36 some opportunities for boating and boating-related recreation by reducing the extent of navigable
37 water available to boaters. Temporary effects would also stem from construction, which may limit
38 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
39 implementation. However, BDCP conservation measures would also lead to an enhanced boating
40 experience by expanding the extent of navigable waterways available to boaters, improving and
41 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
42 navigation. Because these measures would not be anticipated to result in a substantial long-term

1 disruption of boating activities, this impact is considered less than significant for the conservation
2 measures, with the exception of CM18, discussed further below.

3 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
4 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
5 site. The BDCP proponents would implement environmental commitments to include a noise
6 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
7 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
8 number of mitigation measures address construction-related impacts on recreational boating by
9 reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17,
10 *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-
11 1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under
12 Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c
13 address traffic and transportation safety and access conditions of the marina (see additional
14 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
15 19.3.3.12). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns
16 (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*,
17 Section 23.3.3.12). Implementation of these measures, as determined applicable to construction of
18 this facility under future site-specific environmental review, would reduce impacts on recreational
19 boating to a less-than-significant level. No additional mitigation would be required.

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.

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

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

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

38 Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*,
39 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 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 CM2–CM21**

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 Commitments,*
30 *AMMs, and CMs*). 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 polices.

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 17.3.3.13, and Chapter 23, *Noise*, Section 23.3.3.13, 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, AES-4c, and AES-4d would be available to
23 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
24 23.3.3.13, another nighttime effect on recreation would be construction noise levels that could
25 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
26 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
27 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
28 Measures NOI-1a and 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 23.3.3.13 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 implementation of *AMM20 Greater Sandhill Crane* and
7 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
8 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
9 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
10 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
11 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
12 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
13 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
14 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
15 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
16 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
17 suitable habitat conditions for covered species and native biodiversity, including benefiting
18 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
19 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
20 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
21 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
22 community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would
23 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
24 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
25 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
26 led wildlife and botanical tours, 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 23.3.3.13, 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, AMMs,*
26 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
27 to the extent possible so as to avoid effects on passive recreation activities such as walking,
28 picnicking, and 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

on wildlife, visual setting, transportation, and noise conditions that could detract from the recreation experience, due to the dispersed effects on the recreation experience across the Delta, it is not certain the mitigation would reduce the level of these impacts to less than significant in all instances such that there would be no reduction of recreational opportunities or experiences over the entire study area. Therefore, these impacts are considered significant and unavoidable. However, the impacts related to construction of the intakes would be less than significant.

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

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

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

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

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.

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

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

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

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

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

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

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

Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*, 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
8 **Result of Constructing the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Under this Alternative, recreational boat navigation would be affected to the same
10 extent as under Alternative 1C. Alternative 6C would result in the creation of obstructions to boat
11 passage causing boat traffic delays, and impediments to boat movement. Overall, effects on
12 temporary alteration of recreational navigation would be considered adverse. Mitigation Measure
13 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, AMMs, and CMs*.

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, AMMs, and CMs*.

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, effects on waterskiing, wakeboarding or tubing opportunities would last
6 approximately 5 years (long-term) and would be considered adverse because of the reduced
7 recreation opportunity and experiences expected to exist near construction activity.

8 **CEQA Conclusion:** Alternative 6C would result in significant impacts on boat passage and navigation
9 in the Sacramento River and other waterways within the Delta where intakes, temporary barge
10 unloading facilities, and siphons occur. The creation of obstructions to boat passage would result in
11 boat traffic delays, impediments to boat movement. Changes to boat passage and navigation would
12 also result in temporary impacts on wakeboarding, waterskiing, and tubing because of reduced
13 speeds and passage impediments. Mitigation Measure TRANS-1a would reduce impacts on marine
14 navigation by development and implementation of site-specific construction traffic management
15 plans, including specific measures related to management of barges and stipulations to notify the
16 commercial and leisure boating communities of proposed barge operations in the waterways. While
17 the environmental commitments would reduce impacts on water-based recreation (water-skiing,
18 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
19 eliminated during construction, these impacts would be long-term and considered significant and
20 unavoidable.

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

27 **NEPA Effects:** Effects on recreational fishing under Alternative 6C would be similar to those
28 described under Alternative 1A, Impact REC-4.

29 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13, Sacramento River and
30 Delta region fish populations would not be affected by changes to localized water quality conditions,
31 underwater noise, fish stranding or other physical disturbances, or reduced habitat areas such that
32 recreational fishing opportunities would be substantially reduced during construction. BDCP
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, AMMs, and CMs*). RTM would be removed from RTM storage areas
38 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
39 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
40 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
41 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
42 driving.

However, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers. Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would also be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g).

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

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training, 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, RTM, and dredged material; and a barge operations plan (Appendix 3B,
3 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
4 avoid and minimize adverse effects on sport fish populations from impact pile driving. However, the
5 overall experience for anglers would be degraded because of elevated noise and degraded visual
6 conditions. Construction would last up to 5 years; although this would be temporary, it would result
7 in a long-term reduction of local fishing opportunities and experiences and would be a significant
8 and unavoidable impact because the public use of established recreation facilities in the study area
9 would be affected for more than 2 years. Mitigation Measure REC-2 would ensure continued access
10 for bank fishing at established sport fishing locations such that there would be no long-term
11 reduction of local fishing opportunities and experiences. This 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: Monitor Underwater Noise, and if Necessary, Use an
20 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
21 Underwater Noise**

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
25 Construction**

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

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

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

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

33 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
34 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 6C 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 11.3.4.13, 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 6C would be considered less than significant because any impacts to fish
35 and, as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and
36 would 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 6C would be the same as Alternative 6A and would primarily
5 result in small changes in the frequency with which the end-of-September reservoir levels at Trinity
6 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would fall below levels
7 identified as important water-dependent recreation thresholds. Changes at San Luis Reservoir show
8 greater difference when compared to the no action conditions than projected for the other
9 reservoirs. See Table 15-12a and Table 15-12b. Also see Chapter 3, *Description of Alternatives*,
10 Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
11 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
12 model and assumptions.

13 **Existing Conditions (CEQA Baseline) Compared to Alternative 6C (2060)**

14 As shown in Table 15-12a and Table 15-12b, under Alternative 6C there would be from 3 to 64
15 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
16 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
17 Trinity Lake, Folsom Lake, and at San Luis Reservoir. However, as discussed under Section 15.3.1,
18 *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by sea level rise,
19 climate change, and operation of the alternative. It is not possible to specifically define the exact
20 extent of the changes due to implementation of the action alternative using these model simulation
21 results. Thus, the precise contributions of sea level rise and climate change to the total differences
22 between Existing Conditions and Alternative 6C cannot be isolated in this comparison. Please refer
23 to the comparison of the No Action Alternative (2060) to Alternative 6C (2060) for a discussion of
24 the potential effects on end-of-September reservoir and lake elevations attributable to operation of
25 Alternative 6C.

26 **No Action Alternative (2060) Compared to Alternative 6C (2060)**

27 The comparison of Alternative 6C (2060) to the No Action Alternative (2060) condition most closely
28 represents changes in reservoir elevations that may occur as a result of operation of the alternative
29 because both conditions include sea level rise and climate change (see Appendix 5A,
30 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

31 As shown in Table 15-12a and Table 15-12b, operation of Alternative 6C would result in changes in
32 the frequency with which the end of September reservoir levels at Trinity Lake, Shasta Lake, Lake
33 Oroville, Folsom Lake, New Melones Lake, and San Luis Reservoir would fall below levels identified
34 as important water-dependent recreation thresholds. In all but one instance (San Luis Reservoir),
35 the CALSIM II modeling results indicate that reservoir levels under Alternative 6C (2060) operations
36 would fall below the individual reservoir thresholds less frequently than under No Action
37 Alternative (2060) conditions. These changes in reservoir elevations would not be adverse at Trinity
38 Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake and would be considered
39 beneficial effects on recreation opportunities and experiences because there would be fewer years
40 in which the lake levels fall below the recreation threshold relative to the No Action Alternative
41 (2060). Operation of Alternative 6C would not adversely affect water-dependent or water-enhanced
42 recreation at these reservoirs. Overall, these conditions represent improved recreation conditions
43 under operation of Alternative 6C because there would be fewer years in which end-of-September

1 reservoir levels would fall below the recreation thresholds thus indicating better boating
2 opportunities, when compared to No Action Alternative (2060) conditions.

3 The modeling for San Luis Reservoir indicates there could be up to 58 additional years relative to
4 the No Action Alternative (2060) condition for which the reservoir level would fall below the
5 reservoir boating threshold at the end of September for the Dinosaur Point boat launch. However,
6 access to the Basalt boat launch, which is available to reservoir elevation 340 feet, would not
7 substantially change relative to the No Action Alternative (2060) conditions (there would be three
8 additional years). This is a less than 10% change (8 years or less) and would not be considered a
9 substantial reduction in recreation opportunities. Therefore, because the Basalt boat launch would
10 still be available for access to the reservoir, these changes would not be adverse. Shoreline fishing
11 would still be possible, and other recreation activities at the reservoir—picnicking, biking, hiking,
12 and fishing—would be available. These changes would not be adverse.

13 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
14 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
15 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
16 Alternative 6C (2060) operations would fall below the individual reservoir thresholds less
17 frequently than under No Action Alternative (2060). Because there would be fewer years in which
18 the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative
19 (2060) conditions, these impacts would be considered beneficial impacts on recreation
20 opportunities and experiences. At San Luis Reservoir, although boating opportunity would be
21 reduced more frequently for the Dinosaur Point boat launch, access to the Basalt boat launch would
22 not substantially change. The modeled additional three years of exceeding the recreation threshold
23 attributable to operation of Alternative 6C (2060) relative to the No Action Alternative (2060)
24 would be less than significant because it is a less than 10% change (8 years or less). This would be a
25 less-than-significant impact. No mitigation is required. Operation of Alternative 6C would not
26 substantially affect water-dependent or water-enhanced recreation at these reservoirs.

27 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a 28 Result of Maintenance of the Proposed Water Conveyance Facilities**

29 **NEPA Effects:** Effects of facility maintenance activities on water-based recreation under Alternative
30 6C would be similar to those described under Alternative 1A, Impact REC-7, and would result in
31 periodic temporary but not substantial effects on boat passage and water-based recreational
32 activities. Any effects would be short-term (less than 2 years) and intermittent. Other facility
33 maintenance activities would occur on land and would not affect boat passage and navigation.
34 Implementation of the environmental commitment to provide notification of maintenance activities
35 in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*) would reduce these
36 effects. These effects are not considered adverse.

37 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
38 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
39 or water-based recreation within the vicinity of the intakes. In addition, implementation of the
40 environmental commitment to provide notification of maintenance activities in waterways
41 (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*) would further minimize these effects.
42 Intake maintenance impacts on recreation would be considered less than significant because
43 impacts, if any, on public access or public use of established recreation facilities would last for 2
44 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 under Alternative 6C would be the same as those
4 described for Alternative 1C, Impact REC-8. Maintenance would be short-term and intermittent and
5 would be conducted within the individual facility right-of-way, which does not include any
6 recreation facilities or recreation use areas. There would be no adverse effects on recreation
7 opportunities as a result of maintenance of the proposed water conveyance facilities.

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

11 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
12 **Implementing CM2–CM21**

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

25 With regards to fishing opportunities, effects of implementing the conservation components under
26 Alternative 6C would be similar to those described for Alternative 1C. CM2–CM21 would be
27 expected to improve fishing opportunities in the study area although some effect on fishing
28 opportunities could take place during implementation of the conservation measures. Overall,
29 implementing the proposed conservation components would be expected to provide beneficial
30 effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

31 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
32 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
33 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
34 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
35 implementation stage, these measures could result in impacts on fishing opportunities by
36 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
37 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
38 onshore fishing opportunities. These impacts would be considered less than significant because the
39 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
40 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
41 (*Appendix 3B, Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
42 fish species and although these CMs would result in highly localized reductions of predatory species,
43 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
44 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13).

1 Construction of facilities could have short-term impacts on the noise or visual setting and could
2 indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish
3 species from construction activities would be considered less than significant because the BDCP
4 would include environmental commitments to prevent water quality effects include environmental
5 training; implementation of stormwater pollution prevention plans, erosion and sediment control
6 plans, hazardous materials management plans, and spill prevention, containment, and
7 countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan
8 (*Appendix 3B, Environmental Commitments, AMMs, and CMs*). In addition, mitigation measures and
9 environmental commitments identified to reduce the effects of constructing CM1 would also be used
10 to minimize effects of construction on recreation (i.e., visual conditions, noise,
11 transportation/access) associated with implementation of the other conservation components.
12 Because construction of the conservation measure component facilities would be less intense and of
13 shorter duration than construction of CM1 conveyance facilities, the mitigation measures and
14 environmental commitments would reduce the construction-related impacts on recreational fishing
15 associated with the other conservation measures to a less-than-significant level. Further, the
16 individual facilities or conservation elements will undergo additional environmental review and
17 permitting which will include identification of site-specific measures to further protect resources.

18 Environmental commitments that will reduce construction-related impacts on recreation include a
19 noise abatement plan and consultation with CDFW to expand recreational opportunities (*Appendix*
20 *3B, Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2
21 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-
22 related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at
23 construction sites (see Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation
24 Measures AES-1a, AES-1b, AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also
25 see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures
26 TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions
27 that could affect public use of recreation areas (see additional discussion under Impact REC-2 and
28 Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.13). Mitigation Measures NOI-
29 1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact
30 REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.13). Finally, should
31 construction of conservation measure facilities require pile-driving, mitigation measures to protect
32 fish and aquatic species would be implemented to reduce these impacts (see additional discussion
33 under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.13).

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

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

39 Please refer to Mitigation Measure AES-1a in Chapter 17, *Aesthetics and Visual Resources*,
40 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

33 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
34 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 **Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects
20 of Pile Driving and Other Construction-Related Underwater Noise**

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

23 **Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an
24 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
25 Underwater Noise**

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

28 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities
29 as a Result of Implementing CM2–CM21**

30 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
31 conservation components under Alternative 6C would be similar to those described for Alternative
32 1C. Implementing the conservation measures could result in an adverse effect on recreation by
33 limiting boating by reducing the extent of navigable waterways available to boaters. Once
34 implemented, the conservation measures could provide beneficial effects to recreation by expanding
35 the extent of navigable waterways available to boaters, improving and expanding boat launch
36 facilities, and removing nonnative vegetation that restricts or obstructs navigation.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; 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, AES-4c, and AES-4d; 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 19.3.3.13). 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 23.3.3.13).

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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.13). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.13). 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 a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

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

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

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

26 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
27 **Result of Implementing CM2–CM21**

28 **NEPA Effects:** Implementing the conservation components under Alternative 6C would have similar
29 impacts on upland recreation activities as those described for Alternative 1C, Impact REC-11.
30 Implementing the conservation measures could result in an adverse effect on recreation
31 opportunities by reducing the extent of upland recreation sites and activities. Once implemented,
32 the conservation measures could adversely affect recreation by reducing the extent of upland areas
33 suitable for hiking, nature photography, or other similar activity. However, environmental
34 commitments would reduce these effects, and implementation of the measures would also restore
35 or enhance new potential sites for upland recreation thereby improving the quality recreational
36 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
37 components that would not affect upland recreation opportunities. CM17 is an enforcement funding

1 mechanism and would not result in a physical change to upland areas; construction under CM18,
 2 CM19 or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 3 action primarily located at boat launches and would not affect upland recreation areas and related
 4 opportunities. These measures are not discussed further in this analysis.

5 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 6 conservation measures would temporarily limit opportunities for upland recreational activities
 7 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 8 construction activities would also temporarily compromise the quality of upland recreation in and
 9 around these areas. Additionally, it is possible that current areas of upland recreation would be
 10 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 11 activities. These impacts on upland recreational opportunities would be considered less than
 12 significant because the BDCP would include environmental commitments that would require BDCP
 13 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 14 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
 15 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 16 upland recreation and the measure would improve the quality of existing recreational opportunities
 17 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 18 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 19 considered less than significant.

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

23 **NEPA Effects:** Constructing conveyance facilities (CM1) and implementing CM2–CM21 under
 24 Alternative 6C would generally have the same potential for incompatibilities with one or more plans
 25 and policies related to protecting recreation resources in the study area as described for Alternative
 26 1C, Impact AES-12. As described under Alternative 1C, there would be potential for the alternative
 27 to be incompatible with plans and policies related to protecting and promoting recreation
 28 opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright Delta Protection Act of
 29 1992, *Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of*
 30 *the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas General Plan*). In
 31 addition, with the exception of San Joaquin County, the alternative may be incompatible with county
 32 general plan policies that protect recreation resources in 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 **15.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2,
 38 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs;
 39 Operational Scenario E)**

40 For the purposes of assessment of effects on recreation, Alternative 7 is the same as Alternative 1A,
 41 with the following exceptions.

- 42 • Alternative 7 has three proposed intakes, rather than five—Intakes 2, 3, and 5.

- 1 ● Alternative 7 has a different operational scenario (scenario E).
2 ● The restoration measures for Alternative 7 include an additional 20 miles of channel margin
3 restoration and an additional 10,000 acres of seasonally inundated floodplain.

4 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
5 Alternative 7, except that sites or areas affected by Intakes 1 or 4 would not be affected under this
6 alternative (Mapbook Figure M15-1). Specific effects on recreation areas or sites are discussed
7 under Alternative 1A.

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

11 **NEPA Effects:** Alternative 7 would have similar effects on the displacement of existing recreational
12 facilities as those described under Alternative 1A; however, only three intake locations (Intakes 2, 3,
13 and 5) would be constructed under Alternative 7. The proposed location of the intake facilities,
14 tunnels, and associated water conveyance facilities would not lie within the designated boundaries
15 of an existing public use recreation site, including parks, marinas, or other designated areas.
16 Therefore, there would be no adverse effects. Effects on recreation related to construction of the
17 water conveyance facilities are discussed below in Impact REC-2. Also see Chapter 17, *Aesthetics and*
18 *Visual Resources*, Section 17.3.3.14, and Chapter 23, *Noise*, Section 23.3.3.14, for additional
19 discussion of these topics.

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

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

26 **NEPA Effects:** Effects related to temporary disruption of well-established recreational opportunities
27 or experiences under Alternative 7 would be the same as described for Alternative 4. Construction
28 of Alternative 7 facilities would result in temporary short-term and long-term effects related to
29 disruption of well-established recreational opportunities and experiences at recreation sites or
30 areas in the study area. Indirect effects on recreation experiences may occur as a result of impaired
31 access, construction noise, or negative visual effects associated with construction.

32 **Other Recreation Opportunities**

33 **On-Water Recreation**

34 Cliff's Marina is upstream of Intake 1 construction area and Clarksburg Marina falls between the
35 construction impact area for Intake 1 and 2. Similarly, Lazy M Marina and Rivers End Marina & Boat
36 Storage sites are not within the construction impact area for the Byron Tract Forebay and related
37 facilities near Clifton Court Forebay. Although these facilities and other marinas or fishing sites fall
38 outside of the impact area for noise, the overall recreation experience upstream or downstream of
39 these sites may fall within the noise impact area and could experience diminished recreation
40 opportunities because of the elevated noise levels as well as visual setting disruptions over the
41 course of intake installation. Overall, construction activities associated with the proposed water

conveyance facilities would range from 1 year to up to 5 years depending on the site. Work would primarily occur Monday through Friday for up to 24 hours per day. In-river construction would be further limited primarily to June 1 through October 31 each year. Although dewatering would take place 7 days a week for 24 hours per day, it would not result in adverse noise effects. Weekday construction would reduce the amount of fish and other wildlife in recreation areas in the vicinity of the intakes, resulting in decreased recreation opportunities related to wildlife and fish, causing recreationists to experience a changed recreation setting.

Campgrounds

Nighttime construction activities would require the use of bright lights that would negatively affect nighttime views of and from the work area. This would affect any overnight camping at the recreation sites and areas discussed above, although day use areas that close at sunset would not be adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section 23.3.3.14, another nighttime effect on recreation would be construction noise levels that could adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction areas. Nighttime construction could be infrequent and intermittent, but would adversely affect camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation Measures NOI-1a and NOI-1b would be available to address these effects.

Summary

Overall, construction may occur year-round and last from 1 to 5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year. Also see Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.14, Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.14, Chapter 19, *Transportation*, Section 19.3.3.14, and Chapter 23, *Noise*, Section 23.3.3.14 for additional detail related to waterfowl/wildlife, aesthetics/visual resources, transportation, and noise, respectively. Please refer to Alternative 1A, Impact REC-2 for detailed discussions of the potential effects at specific recreation sites or areas within the construction impact area.

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

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

Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.14, identifies a number of mitigation measures that would be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). DWR would also make a commitment to enhance the visual character of the area by creating new wildlife viewing sites and enhancing interest in the construction site by constructing viewing areas and displaying information about the project, which may attract people who may use the recreation facilities to the construction site as part of the visit.

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

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

1 of access to affected recreation areas as an environmental commitment. Where construction
2 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
3 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
4 construction sites. These would be designed to be safe, pleasant and would integrate with
5 opportunities to view the construction site as an additional area of interest. These physical facilities
6 would be combined with public information, including sidewalk wayfinding information that would
7 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
8 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
9 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
10 congested roadway segments.

11 Chapter 23, *Noise*, Section 23.3.3.14, discusses that construction noise effects could be addressed
12 through mitigation measures that call for use of noise-reducing construction practices (NOI-1a) and
13 implementation of a complaint/response tracking program (NOI-1b), and an environmental
14 commitment requiring a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs,*
15 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
16 to the extent possible so as to avoid effects on passive recreation activities such as walking,
17 picnicking, and viewing the aesthetic amenities of the area.

18 In addition to these mitigation measures and environmental commitments, Mitigation Measure REC-
19 2 would ensure continued access to existing recreation experiences. The Delta offers many
20 alternative recreational opportunities for water-based, water-enhanced, and land-based recreation,
21 all of which would continue to be available for recreationists. However, due to the length of time that
22 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
23 related to temporary disruption of existing recreational activities at facilities within the impact area
24 would be adverse.

25 **CEQA Conclusion:** Construction of Alternative 7 intakes and related water conveyance facilities
26 would result in temporary short-term (i.e., lasting 2 years or less) and long-term (i.e., lasting over 2
27 years) impacts on well-established recreational opportunities and experiences in the study area
28 because of access, noise, and visual setting disruptions that could result in loss of public use. These
29 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
30 commitments, and AMMs would reduce these construction-related impacts by implementing
31 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
32 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
33 and implement noise reduction and complaint tracking measures. However, the level of impact
34 would not be reduced to less than significant because even though mitigation measures and
35 environmental commitments would reduce impacts on wildlife, visual setting, transportation, and
36 noise conditions that could detract from the recreation experience, due to the dispersed effects on
37 the recreation experience across the Delta, it is not certain the mitigation would reduce the level of
38 these impacts to less than significant in all instances such that there would be no reduction of
39 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
40 considered significant and unavoidable. However, the impacts related to construction of the intakes
41 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 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

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

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

28 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
29 **Construction**

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

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

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

1 Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a 2 Result of Constructing the Proposed Water Conveyance Facilities

3 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
4 under this alternative would be the same as those described for Alternative 4. Direct effects on boat
5 passage and navigation on the Sacramento River would result from construction of the intakes.
6 Effects could include reduced access and delays to boat passage and navigation related to the
7 narrower available river width and temporary speed zones. However, boat passage volume along
8 the corridor of the Sacramento River where intakes are proposed is low. Water-based recreational
9 activities such as waterskiing, wakeboarding, tubing, or fishing are also low. In addition, there is
10 sufficient width in the channel to allow boat passage, with minor delays related to construction
11 speed zones. These effects on boat passage and navigation would be reduced with the
12 implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents developing
13 and implementing site-specific construction traffic management plans, including waterway
14 navigation elements. Nonetheless, these effects would be long-term, lasting approximately 5 years
15 and would be considered adverse because of the reduced recreation opportunity and experiences
16 expected to exist near construction activity.

17 Construction of temporary barge unloading facilities would result in adverse effects on boat passage
18 and navigation on the Sacramento River and other waterways in the study area, including the
19 creation of obstructions to boat passage and associated boat traffic delays and temporary partial
20 channel closures that could impede boat movement and eliminate recreational opportunities. In
21 waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the
22 vicinity of the barge unloading facilities would be eliminated during construction. Mitigation
23 Measure TRANS-1a would be available to reduce effects to marine navigation by development and
24 implementation of site-specific construction traffic management plans, including specific measures
25 related to management of barges and stipulations to notify the commercial and leisure boating
26 communities of proposed barge operations in the waterways. Additionally, BDCP proponents would
27 contribute funds for the construction of new recreation opportunities as well as for the protection of
28 existing 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, AMMs, and CMs*.

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
41 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture-
42 Agriculture Research Service, University of California Cooperative Extension Weed Research and
43 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
44 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
45 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce
46 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where

1 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
2 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
3 Enhanced ability to control these invasive vegetation would lead to increased recreation
4 opportunities which would compensate for the loss of recreational opportunities within the project
5 area by providing a recreational opportunity downstream/upstream in the same area for the same
6 regional recreational users. This commitment is described in Appendix 3B, *Environmental
7 Commitments, AMMs, and CMs.*

8 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
9 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
10 proponents would also ensure through various outreach methods that recreationists were aware of
11 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
12 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
13 adverse because of the reduced recreation opportunity and experiences expected to exist near
14 construction activity.

15 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
16 construction of the intakes and temporary barge unloading facilities. Impacts would last
17 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
18 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
19 closures could impede boat movement and eliminate recreational opportunities. In waterways
20 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
21 during construction. Mitigation Measure TRANS-1a would reduce impacts on marine navigation by
22 development and implementation of site-specific construction traffic management plans, including
23 specific measures related to management of barges and stipulations to notify the commercial and
24 leisure boating communities of proposed barge operations in the waterways. While the
25 environmental commitments would reduce impacts on water-based recreation (water-skiing,
26 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
27 eliminated during construction, these impacts would be long-term and considered significant and
28 unavoidable.

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

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

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

35 **NEPA Effects:** Effects on recreational fishing under Alternative 7 would be the same as those
36 described under Alternative 4, Impact REC-4.

37 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14, 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, AMMs, and CMs*). RTM would be removed from RTM storage areas
3 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
4 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
5 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b
6 would be available to avoid and minimize adverse effects on sport fish populations from impact pile
7 driving. However, construction conditions would introduce noise and visual disturbances that
8 would affect the recreation experience for anglers. Although fish populations likely would not be
9 affected to the degree that fishing opportunities would be substantially reduced, construction
10 conditions would introduce noise and visual disturbances that would affect the recreation
11 experience for anglers.

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

35 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
36 construction activities would be considered less than significant because the BDCP would include
37 environmental commitments to prevent water quality effects include environmental training,
38 implementation of stormwater pollution prevention plans, erosion and sediment control plans,
39 hazardous materials management plans, and spill prevention, containment, and countermeasure
40 plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B,
41 *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to
42 avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation
43 Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations
44 such that there would be no long-term reduction of local fishing opportunities and experiences. This
45 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: Monitor Underwater Noise, and if Necessary, Use an
9 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
10 Underwater Noise**

11 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
12 Alternative 1A, Impact AQUA-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 **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 **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 7 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 11.3.4.14, 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 7 would be considered less than significant because any impacts to fish and,
 24 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
 25 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 7 would result in changes in the frequency with which the
 30 end of September reservoir levels at study area reservoirs fall below levels identified as important
 31 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
 32 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
 33 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
 34 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
 35 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
 36 II model and assumptions.

37 **Existing Conditions (CEQA Baseline) Compared to Alternative 7 (2060)**

38 As shown in Table 15-12a and Table 15-12b, under Alternative 7 there would be from 1 to 45
 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, Shasta Lake, Folsom Lake, and San Luis Reservoir. However, as discussed under
3 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
4 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
5 the exact extent of the changes due to implementation of the action alternative using these model
6 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
7 differences between Existing Conditions and Alternative 7 cannot be isolated in this comparison.
8 Please refer to the comparison of the No Action Alternative (2060) to Alternative 7 (2060) for a
9 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
10 operation of Alternative 7.

11 **No Action Alternative (2060) Compared to Alternative 7 (2060)**

12 The comparison of Alternative 7 (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,
15 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

16 In comparisons of Alternative 7 (2060) operations to No Action Alternative (2060), the CALSIM II
17 modeling results indicate that reservoir levels under Alternative 7 operations, with the exception of
18 Folsom Lake and San Luis Reservoir, would either not change (New Melones Lake) or would fall
19 below the individual reservoir thresholds less frequently than under No Action Alternative (2060)
20 (Table 15-12a and Table 15-12b). These changes in reservoir elevations would not be adverse at
21 Trinity Lake, Shasta Lake, Oroville Reservoir, Folsom Lake, and New Melones Lake. At Trinity Lake,
22 Shasta Lake, and Lake Oroville these changes would be considered beneficial effects on recreation
23 opportunities and experiences under Alternative 7 operations because there would be fewer years
24 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
25 conditions. Operation of Alternative 7 would not adversely affect water-dependent or water-
26 enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation
27 conditions under operation of Alternative 7 because there would be fewer years in which end-of-
28 September reservoir levels would fall below the recreation thresholds thus indicating better boating
29 opportunities, when compared to No Action Alternative (2060) conditions.

30 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
31 frequently under Alternative 7 (2060) (39 years) relative to No Action Alternative (2060) for the
32 Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to
33 reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative
34 (2060) (there would be three less years below the threshold). This change would not result in a
35 substantial reduction in recreation opportunities or experiences. Shoreline fishing would still be
36 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
37 would be available. These changes would not be adverse.

38 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
39 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
40 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
41 Alternative 7 (2060) operations would either not change (New Melones Lake) or would fall below
42 the individual reservoir thresholds less frequently than under No Action Alternative (2060).
43 Because there would be fewer years in which the reservoir or lake levels fall below the recreation
44 threshold relative to No Action Alternative (2060) conditions, these impacts would be considered

1 beneficial impacts on recreation opportunities and experiences. At San Luis Reservoir, although
 2 boating opportunity would be reduced more frequently for the Dinosaur Point boat launch, access to
 3 the Basalt boat launch would not substantially change. The modeling indicates there would be three
 4 fewer years when reservoir elevations would exceed the recreation threshold under operation of
 5 Alternative 7 (2060) relative to the No Action Alternative (2060) which would be a beneficial
 6 impact. Operation of Alternative 7 would not substantially affect water-dependent or water-
 7 enhanced recreation at these reservoirs. Overall, Alternative 7 would result in a less-than-significant
 8 impact on recreation opportunities and experiences. No mitigation is required.

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:** Effects related to changes to boat passage and navigation as a result of maintenance of
 12 intake facilities under Alternative 7 would be similar to those described for Alternative 1A; however,
 13 maintenance activities would only be necessary for three intake facilities under this alternative.
 14 Maintenance would result in periodic temporary but not substantial effects on boat passage and
 15 water-based recreational activities. Any effects would be short-term (less than 2 years) and
 16 intermittent. Other facility maintenance activities would occur on land and would not affect boat
 17 passage and navigation. Implementation of the environmental commitment to provide notification
 18 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
 19 would reduce these effects. These effects are not considered adverse.

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

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

30 **NEPA Effects:** Changes to land-based recreation as a result of maintenance of conveyance facilities
 31 under Alternative 7 would be the same as those described for Alternative 4, Impact REC-8.
 32 Maintenance would be short-term and intermittent and would be conducted within the individual
 33 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
 34 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
 35 water conveyance facilities.

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

39 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
 40 **Implementing CM2–CM21**

41 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
 42 components as part of Alternative 7 could have effects related to recreational fishing that are similar

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

11 With regards to fishing opportunities, effects of implementing the conservation components under
12 Alternative 7 would be similar to those described for Alternative 1A; however, under this
13 Alternative, 40 miles of channel margin habitat would be enhanced and 20,000 acres of seasonally
14 inundated floodplain would be restored, instead of 20 miles and 10,000 acres, respectively, under
15 other BDCP alternatives. CM2–CM21 would be expected to improve fishing opportunities in the
16 study area although some effect on fishing opportunities could take place during implementation of
17 the conservation measures. Overall, implementing the proposed conservation components would be
18 expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving
19 fishing opportunities.

20 **CEQA Conclusion:** CM2–CM21 in the long-term would be expected to improve fishing opportunities
21 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
22 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
23 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
24 implementation stage, these measures could result in impacts on fishing opportunities by
25 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
26 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
27 onshore fishing opportunities. These impacts would be considered less than significant because the
28 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
29 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
30 (Appendix 3B, *Environmental Commitments, AMMs, and CMs*). CM4, CM13, and CM15 target predator
31 fish species and although these CMs would result in highly localized reductions of predatory species,
32 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
33 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14).
34 Construction of facilities could have short-term impacts on the noise or visual setting and could
35 indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish
36 species from construction activities would be considered less than significant because the BDCP
37 would include environmental commitments to prevent water quality effects include environmental
38 training; implementation of stormwater pollution prevention plans, erosion and sediment control
39 plans, hazardous materials management plans, and spill prevention, containment, and
40 countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan
41 (Appendix 3B). In addition, mitigation measures and environmental commitments identified to
42 reduce the effects of constructing CM1 would also be used to minimize effects of construction on
43 recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of
44 the other conservation components. Because construction of the conservation measure component
45 facilities would be less intense and of shorter duration than construction of CM1 conveyance
46 facilities, the mitigation measures and environmental commitments would reduce the construction-

related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (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 address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.14). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.14).

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

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.

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

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

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

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

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

Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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: Monitor Underwater Noise, and if Necessary, Use an**
12 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
13 **Underwater Noise**

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

16 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
17 **as a Result of Implementing CM2–CM21**

18 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
19 conservation components under Alternative 7 would be similar to those described for Alternative
20 1A; however, under this alternative, 40 miles of channel margin habitat would be enhanced and
21 20,000 acres of seasonally inundated floodplain would be restored, instead of 20 miles and 10,000
22 acres, respectively, under other BDCP alternatives. Implementing the conservation measures could
23 result in an adverse effect on recreation by limiting boating by reducing the extent of navigable
24 waterways available to boaters. Once implemented, the conservation measures could provide
25 beneficial effects to recreation by expanding the extent of navigable waterways available to boaters,
26 improving and expanding boat launch facilities, and removing nonnative vegetation that restricts or
27 obstructs navigation.

28 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
29 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
30 site. The BDCP proponents would implement environmental commitments to include a noise
31 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
32 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
33 number of mitigation measures are available to address construction-related effects on recreational
34 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
35 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
36 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
37 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
38 TRANS-1c are available to address traffic and transportation safety and access conditions of the
39 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
40 *Transportation*, Section 19.3.3.14). Mitigation Measures NOI-1a and NOI-1b are available to address

1 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
2, above and Chapter 23, *Noise*, Section 23.3.3.14).

3 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
4 some habitat restoration and enhancement measures and other conservation measures would limit
5 some opportunities for boating and boating-related recreation by reducing the extent of navigable
6 water available to boaters. Temporary effects would also stem from construction, which may limit
7 boat access, speeds, or create excess noise, odors, or unattractive visual scenes during periods of
8 implementation. However, BDCP conservation measures would also lead to an enhanced boating
9 experience by expanding the extent of navigable waterways available to boaters, improving and
10 expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
11 navigation. Because these measures would not be anticipated to result in a substantial long-term
12 disruption of boating activities, this impact is considered less than significant for the conservation
13 measures, with the exception of CM18, discussed further below.

14 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
15 near the Delta Marina Yacht Harbor could result in construction-related impacts on boaters at this
16 site. The BDCP proponents would implement environmental commitments to include a noise
17 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional
18 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
19 number of mitigation measures address construction-related impacts on recreational boating by
20 reducing the degree of aesthetic and visual degradation at the construction site (see Chapter 17,
21 *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b, AES-1c, AES-
22 1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion under
23 Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c
24 address traffic and transportation safety and access conditions of the marina (see additional
25 discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section
26 19.3.3.14). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns
27 (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*,
28 Section 23.3.3.14). Implementation of these measures, as determined applicable to construction of
29 this facility under future site-specific environmental review, would reduce impacts on recreational
30 boating to a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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.

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 CM2–CM21**

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 BDCP 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 Commitments,*
 4 *AMMs, and CMs*). 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 polices.

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 BDCP alternatives.

35 Table 15-11 under Alternative 1A lists the recreation sites and areas that may be affected by
 36 Alternative 8 (Mapbook Figure M15-1). 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 23.3.3.15, 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, AES-4c, and AES-4d would be available to
6 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
7 23.3.3.15, another nighttime effect on recreation would be construction noise levels that could
8 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
9 areas. Nighttime construction could be infrequent and intermittent, but would adversely affect
10 camping sites. Nighttime construction would not occur on weekends or holidays. Mitigation
11 Measures NOI-1a and 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 23.3.3.15 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 implementation of *AMM20 greater Sandhill Crane* and
34 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
35 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
36 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
37 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
38 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
39 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
40 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
41 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
42 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
43 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
44 suitable habitat conditions for covered species and native biodiversity, including benefiting
45 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and

other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system, consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead facilities and one updated boating facility, as well as a new boat launch facility within the footprint of the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.15, identifies a number of mitigation measures that would be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). DWR would also make a commitment to enhance the visual character of the area by creating new wildlife viewing sites and enhancing interest in the construction site by constructing viewing areas and displaying information about the project, which may attract people who may use the recreation facilities to the construction site as part of the visit.

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

As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would 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 23.3.3.15, 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, AMMs,*
8 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
9 to the extent possible so as to avoid effects on passive recreation activities such as walking,
10 picnicking, and 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

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

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

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

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

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

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

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

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

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

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

32 **NEPA Effects:** Effects related to temporary conflicts with recreational opportunities or experiences
33 under this alternative would be to the same as those described for Alternative 4. Direct effects on
34 boat passage and navigation on the Sacramento River would result from construction of the intakes.
35 Effects of cofferdam construction could include reduced access and delays to boat passage and

navigation related to the narrower available river width and temporary speed zones. However, boat passage volume along the corridor of the Sacramento River where intakes are proposed is low. Water-based recreational activities such as waterskiing, wakeboarding, tubing, or fishing are also low. In addition, there is sufficient width in the channel to allow boat passage, with minor delays related to construction speed zones. These effects on boat passage and navigation would be reduced with the implementation of Mitigation Measure TRANS-1a that involves the BDCP proponents developing and implementing site-specific construction traffic management plans, including waterway navigation elements. Nonetheless, these effects would be long-term, lasting approximately 5 years and would be considered adverse because of the reduced recreation opportunity and experiences expected to exist near construction activity.

Construction of temporary barge unloading facilities would result in adverse effects on boat passage and navigation on the Sacramento River and other waterways in the study area, including the creation of obstructions to boat passage and associated boat traffic delays and temporary partial channel closures that could impede boat movement and eliminate recreational opportunities. In waterways where waterskiing, wakeboarding, and tubing occur, recreation opportunities in the vicinity of the barge unloading facilities would be eliminated during construction. Mitigation Measure TRANS-1a would be available to reduce effects to marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed barge operations in the waterways. Additionally, BDCP proponents would contribute funds for the construction of new recreation opportunities as well as for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment serves to compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. These commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

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

1 regional recreational users. This commitment is described in Appendix 3B, *Environmental*
2 *Commitments, AMMs, and CMs.*

3 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
4 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
5 proponents would also ensure through various outreach methods that recreationists were aware of
6 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
7 Cut). Nonetheless, these effects would last up to 5 years (long-term) and would be considered
8 adverse because of the reduced recreation opportunity and experiences expected to exist near
9 construction activity.

10 **CEQA Conclusion:** Impacts on boat passage and navigation in the study area would result from the
11 construction of the intakes and temporary barge unloading facilities. Impacts would last
12 approximately 5 years and include obstruction and delays to boat passage and navigation as a result
13 of channel obstructions in addition to compliance with temporary speed zones. Temporary channel
14 closures could impede boat movement and eliminate recreational opportunities. In waterways
15 where waterskiing, wakeboarding, and tubing occur, recreation opportunities would be eliminated
16 during construction. Mitigation Measure TRANS-1a would reduce impacts on 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 communities of proposed barge operations in the waterways. While the
20 environmental commitments would reduce impacts on water-based recreation (water-skiing,
21 wakeboarding, tubing) in these areas by creating alternative recreation opportunities for those
22 eliminated during construction, these impacts would be long-term and considered significant and
23 unavoidable.

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

30 **NEPA Effects:** Effects on recreational fishing under Alternative 8 would be the same as those
31 described under Alternative 4, Impact REC-4.

32 As discussed in Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15, Sacramento River and
33 Delta 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, AMMs, and CMs*). RTM would be removed from RTM storage areas
41 (which represent a substantial portion of the permanent impact areas) and reused, as appropriate,
42 as bulking material for levee maintenance, as fill material for habitat restoration projects, or other
43 beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b

would be available to avoid and minimize adverse effects on sport fish populations from impact pile driving. However, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers.

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

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations such that there would be no long-term reduction of local fishing opportunities and experiences. This impact would be less than significant.

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

42 Please refer to Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative
43 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: Monitor Underwater Noise, and if Necessary, Use an
6 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
7 Underwater Noise**

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

10 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
11 Construction**

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

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

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

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.

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 8 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 11.3.4.15, 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 8 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 8 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 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
 32 II model and assumptions.

33 **Existing Conditions (CEQA Baseline) Compared to Alternative 8 (2060)**

34 As shown in Table 15-12a and Table 15-12b, under Alternative 8 there would be from 4 to 73
 35 additional years of the recreation thresholds being exceeded at the reservoirs relative to the existing
 36 condition. These represent a greater than 10% increased exceedance of the reservoir thresholds at
 37 Trinity Lake, Lake Oroville, Folsom Lake, and San Luis Reservoir. However, as discussed under
 38 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are caused by
 39 sea level rise, climate change, and operation of the alternative. It is not possible to specifically define
 40 the exact extent of the changes due to implementation of the action alternative using these model

1 simulation results. Thus, the precise contributions of sea level rise and climate change to the total
2 differences between Existing Conditions and Alternative 8 cannot be isolated in this comparison.
3 Please refer to the comparison of the No Action Alternative (2060) to Alternative 8 (2060) for a
4 discussion of the potential effects on end-of-September reservoir and lake elevations attributable to
5 operation of Alternative 8.

6 **No Action Alternative (2060) Compared to Alternative 8 (2060)**

7 The comparison of Alternative 8 (LLT-2060) to the No Action Alternative (2060) condition most
8 closely represents changes in reservoir elevations that may occur as a result of operation of the
9 alternative because both conditions include sea level rise and climate change (see Appendix 5A,
10 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

11 In comparisons of Alternative 8 (2060) operations to No Action Alternative (2060), the CALSIM II
12 modeling results indicate that reservoir levels under Alternative 8 operations, with the exception of
13 San Luis Reservoir, would either not change (Lake Oroville and New Melones Lake) or would fall
14 below the individual reservoir thresholds less frequently than under No Action Alternative (2060)
15 (Table 15-12a and Table 15-12b). These changes in reservoir elevations would not be adverse at
16 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Lake. At Trinity Lake,
17 Shasta Lake, and Folsom Lake, these changes would be considered beneficial effects on recreation
18 opportunities and experiences under Alternative 8 operations because there would be fewer years
19 in which the lake levels fall below the recreation threshold relative to No Action Alternative (2060)
20 conditions. Operation of Alternative 8 would not adversely affect water-dependent or water-
21 enhanced recreation at these reservoirs. Overall, these conditions represent improved recreation
22 conditions under operation of Alternative 8 because there would be fewer years in which end-of-
23 September reservoir levels would fall below the recreation thresholds thus indicating better boating
24 opportunities, when compared to No Action Alternative (2060) conditions.

25 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
26 frequently under Alternative 8 (2060) (67 years) relative to No Action Alternative (2060) for the
27 Dinosaur Point boat launch. In addition, modeling indicates that reservoir levels would fall below
28 the Basalt boat launch threshold levels more frequently under Alternative 8 (2060) conditions
29 (there would be 59 additional years) relative to the No Action Alternative (2060) conditions. These
30 increases in the loss of boating recreation opportunity at San Luis Reservoir would be considered
31 substantial changes from the No Action Alternative (2060) conditions and would be adverse.
32 Mitigation Measure REC-6 would be available to address this effect.

33 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
34 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
35 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
36 Alternative 8 (2060) operations would either not change (Lake Oroville and New Melones Lake) or
37 would fall below the individual reservoir thresholds less frequently than under No Action
38 Alternative (2060). Because there would be fewer years in which the reservoir or lake levels fall
39 below the recreation threshold relative to No Action Alternative (2060) conditions, these impacts
40 would be considered beneficial impacts on recreation opportunities and experiences. At San Luis
41 Reservoir, boating opportunity would be reduced more frequently for the Dinosaur Point boat
42 launch (67 additional years relative to the No Action Alternative [2060]) and the Basalt boat launch
43 (59 additional years relative to the No Action Alternative [2060]). These changes in boat access to
44 the reservoir would be a greater than 10% change (8 years) and could be a significant impact on

1 opportunities at San Luis Reservoir. Mitigation Measure REC-6 would reduce this impact to a less-
2 than-significant level.

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:** Effects related to changes to boat passage and navigation as a result of maintenance of
12 intake facilities would be similar to those described for Alternative 1A; however, maintenance
13 activities would only be necessary for three intake facilities under this alternative. Maintenance
14 would result in periodic temporary but not substantial effects on boat passage and water-based
15 recreational activities. Any effects would be short-term (less than 2 years) and intermittent. Other
16 facility maintenance activities would occur on land and would not affect boat passage and
17 navigation. Implementation of the environmental commitment to provide notification of
18 maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMs*)
19 would reduce these effects. These effects are not considered adverse.

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

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

30 **NEPA Effects:** Changes to land-based recreation as a result of maintenance of conveyance facilities
31 under Alternative 8 would be the same as those described for Alternative 4, Impact REC-8.
32 Maintenance would be short-term and intermittent and would be conducted within the individual
33 facility right-of-way, which does not include any recreation facilities or recreation use areas. There
34 would be no adverse effects on recreation opportunities as a result of maintenance of the proposed
35 water conveyance facilities.

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

1 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
2 **Implementing CM2-CM21**

3 **NEPA Effects:** Construction, and operation and maintenance of the proposed conservation
4 components as part of Alternative 8 could have effects related to recreational fishing that are similar
5 in nature to those discussed above for construction, and operation and maintenance of proposed
6 water conveyance facilities. Although similar in nature, the potential intensity of any effects would
7 likely be substantially lower because the nature of the activities associated with implementing the
8 conservation components would be different—less heavy construction equipment would be
9 required and the restoration actions would be implemented over a longer time frame than CM1.
10 Potential effects from implementation of the conservation components would be dispersed over a
11 larger area and would generally involve substantially fewer construction and operation effects
12 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 8 would be similar to those described for Alternative 1A; however, under this
17 Alternative, target acreages for enhancement or restoration may be altered. CM2-CM21 would be
18 expected to improve fishing opportunities in the study area although some effect on fishing
19 opportunities could take place during implementation of the conservation measures. Overall,
20 implementing the proposed conservation components would be expected to provide beneficial
21 effects on aquatic habitat and fish abundance thereby improving fishing opportunities

22 **CEQA Conclusion:** CM2-CM21 in the long-term would be expected to improve fishing opportunities
23 by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated
24 floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators;
25 controlling illegal harvest of covered species; and expanding boat launch facilities. During the
26 implementation stage, these measures could result in impacts on fishing opportunities by
27 temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would
28 increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased
29 onshore fishing opportunities. These impacts would be considered less than significant because the
30 BDCP would include environmental commitments to consult with CDFW to expand wildlife viewing,
31 angling, and hunting opportunities, as described in Recommendation DP R14 of the Delta Plan
32 (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*). CM4, CM13, and CM15 target predator
33 fish species and although these CMs would result in highly localized reductions of predatory species,
34 overall, these measures would not result in an appreciable decrease in Delta-wide abundances of
35 predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15).
36 Construction of facilities could have short-term impacts on the noise or visual setting and could
37 indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish
38 species from construction activities would be considered less than significant because the BDCP
39 would include environmental commitments to prevent water quality effects include environmental
40 training; implementation of stormwater pollution prevention plans, erosion and sediment control
41 plans, hazardous materials management plans, and spill prevention, containment, and
42 countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan
43 (Appendix 3B). In addition, mitigation measures and environmental commitments identified to
44 reduce the effects of constructing CM1 would also be used to minimize effects of construction on
45 recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of
46 the other conservation components. Because construction of the conservation measure component

facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMS*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.15). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.15). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.15).

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

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.

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

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

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

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

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

Please refer to Mitigation Measure AES-1d in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

22 Please refer to Mitigation Measure AES-4d 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: Monitor Underwater Noise, and if Necessary, Use an**
12 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
13 **Underwater Noise**

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

16 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
17 **as a Result of Implementing CM2–CM21**

18 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
19 conservation components under Alternative 8 would be similar to those described for Alternative
20 1A; however, under this Alternative, target acreages for enhancement or restoration may be altered.
21 Implementing the conservation measures could result in an adverse effect on recreation by limiting
22 boating by reducing the extent of navigable waterways available to boaters. Once implemented, the
23 conservation measures could provide beneficial effects to recreation by expanding the extent of
24 navigable waterways available to boaters, improving and expanding boat launch facilities, and
25 removing nonnative vegetation that restricts or obstructs navigation.

26 Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base
27 near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this
28 site. The BDCP proponents would implement environmental commitments to include a noise
29 abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional
30 discussion under Impact REC-2 and Impact REC-3, above) to lessen these impacts. In addition, a
31 number of mitigation measures are available to address construction-related effects on recreational
32 boating by reducing the degree of aesthetic and visual degradation at the construction site (see
33 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.2, Mitigation Measures AES-1a, AES-1b,
34 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4b, AES-4c, and AES-4d; also see additional discussion
35 under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and
36 TRANS-1c are available to address traffic and transportation safety and access conditions of the
37 marina (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19,
38 *Transportation*, Section 19.3.3.15). Mitigation Measures NOI-1a and NOI-1b are available to address
39 construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-
40 3, above and Chapter 23, *Noise*, Section 23.3.3.15).

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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.15). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.15). 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 a less-than-significant level. 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.

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

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

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

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

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

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

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Please refer to Mitigation Measure AES-1e in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-1.

Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities

Please refer to Mitigation Measure AES-1f in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-1.

Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan

Please refer to Mitigation Measure AES-1g in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-1.

Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for Construction

Please refer to Mitigation Measure AES-4b in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-4.

Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences

Please refer to Mitigation Measure AES-4c in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-4.

Mitigation Measure AES-4d: Avoid the Use of Blue Rich White Light LED Lighting

Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*, Alternative 1A, Impact AES-4.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A, Impact TRANS-1.

Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on Congested Roadway Segments

Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A, 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 CM2–CM21**

13 **NEPA Effects:** Implementing the conservation components under Alternative 8 would have similar
14 impacts on upland recreation activities as those described for Alternative 1A; however, under this
15 Alternative, target acreages for enhancement or restoration may be altered. Implementing the
16 conservation measures could result in an adverse effect on recreation opportunities by reducing the
17 extent of upland recreation sites and activities. Once implemented, the conservation measures could
18 adversely affect recreation by reducing the extent of upland areas suitable for hiking, nature
19 photography, or other similar activity. However, environmental commitments would reduce these
20 effects, and implementation of the measures would also restore or enhance new potential sites for
21 upland recreation thereby improving the quality recreational opportunities. CM17–CM21 involve
22 enforcement, management, or other individual, localized project components that would not affect
23 upland recreation opportunities. CM17 is an enforcement funding mechanism and would not result
24 in a physical change to upland areas; construction under CM18, CM19 or CM21 would not affect
25 existing upland recreation areas; and CM20 is an enforcement action primarily located at boat
26 launches and would not affect upland recreation areas and related opportunities. These measures
27 are not discussed further in this analysis.

28 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
29 conservation measures would temporarily limit opportunities for upland recreational activities
30 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
31 construction activities would also temporarily compromise the quality of upland recreation in and
32 around these areas. Additionally, it is possible that current areas of upland recreation would be
33 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
34 activities. These impacts on upland recreational opportunities would be considered less than
35 significant because the BDCP would include environmental commitments that would require BDCP
36 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
37 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
38 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
39 upland recreation and the measure would improve the quality of existing recreational opportunities
40 adjacent to areas modified by the conservation measures. These measures would not be anticipated
41 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
42 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 8 would generally have the same potential for incompatibilities with one or more plans
6 and policies related to protecting and promoting recreation opportunities in the study area as
7 described for Alternative 4, Impact AES-12. As described under Alternative 4, there would be
8 potential for the alternative to be incompatible with plans and policies related to protecting and
9 promoting recreation opportunities in the study area (i.e., The Johnston-Baker-Andal-Boatwright
10 Delta Protection Act of 1992, *Delta Protection Commission Land Use and Resource Management Plan*
11 for the Primary Zone of the Delta, *Delta Plan*, Brannan Island and Franks Tract State Recreation Areas
12 General Plan). In addition, with the exception of Solano County, the alternative may be incompatible
13 with county general plan policies that protect visual resources in the study area.

14 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
15 physical consequence to the environment. The physical effects are discussed in impacts REC-1
16 through REC-11, above and no additional CEQA conclusion is required related to the compatibility of
17 the alternative with relevant plans and polices.

18 **15.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs;
19 Operational Scenario G)**

20 Table 15-16 lists the recreation sites that fall within the construction impact area. Specific effects are
21 discussed below.

22 **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

Recreation Site or Area	Primary Alternative Feature	Impact Source	Duration
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
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 M15-5), 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.

1 **Boathouse Marina**

2 Recreation opportunities at Boathouse Marina at Locke would be directly affected by the fish screen
3 installed at the mouth of the Delta Cross Channel. The upstream most 650 feet of the 2,800-foot-long
4 fish screen would occupy about 50% of the riverbank area now occupied by the marina. The marina
5 provides 56 boat berths and indoor storage for 48 boats. In addition, modification of the river levee
6 in conjunction with the fish screen would require removal of the main marina building, a former
7 packing shed that provides indoor boat storage and houses the marina office, and other marina
8 services. Because installing the fish screen would require a portion of the marina berths and the
9 primary marina structure to be removed, the marina could no longer operate in this location, and
10 these berthing opportunities would be lost.

11 **Walnut Grove Public Guest Dock**

12 The Walnut Grove public guest dock, just upstream of the Walnut Grove Bridge, could also be
13 affected by the fish screen at the mouth of the Delta Cross Channel. The downstream end of the fish
14 screen would be immediately upstream of the guest dock. Addition of the fish screen to the
15 waterway could make it more challenging for boats to navigate safely to and from the guest dock,
16 and changes in river currents related to the fish screen could also affect boaters' use of the dock.
17 Together, these factors could make continued operation of the dock infeasible. Therefore, this guest
18 docking opportunity could be lost, reducing boater's access to the goods and services provided in
19 Walnut Grove.

20 **Boon Dox Guest Dock**

21 The Boon Dox guest dock, downstream from the Walnut Grove public dock, on the other side of the
22 Walnut Grove Bridge, would be affected by the fish screen planned for the mouth of Georgiana
23 Slough. The upstream end of the fish screen would occupy the riverbank area now occupied by the
24 guest dock, which is used by boating patrons of the Boon Dox convenience store and possibly by
25 other boaters visiting Walnut Grove. Therefore, this guest docking opportunity would be lost, also
26 reducing boater's access to the goods and services provided in Walnut Grove.

27 Construction of Alternative 9 fish screens and intakes would result in the direct permanent loss of
28 well-established recreation facilities: Boathouse Marina, Walnut Grove public guest dock, and Boon
29 Dox guest dock. As discussed under Impact REC-3 and in Appendix 3B, *Environmental Commitments,*
30 *AMMs, and CMs*, BDCP proponents would contribute funds for the construction of new recreation
31 opportunities as well as for the protection of existing recreation opportunities as outlined in
32 Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the
33 expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the
34 Delta Plan. Potential uses of these funds could be for the reopening of Brannan Island State
35 Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new
36 State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds
37 will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This
38 commitment serves to compensate for the loss of recreational opportunities within the project area
39 by providing a recreational opportunity downstream/upstream in the same area for the same
40 regional recreational users. However, these effects would still be adverse due to the permanent loss
41 of these recreation facilities.

42 **CEQA Conclusion:** Construction of Alternative 9 fish screens and intakes would result in the direct
43 permanent loss of well-established recreation facilities: Boathouse Marina, Walnut Grove public

1 guest dock, and Boon Dox guest dock. BDCP proponents would contribute funds for the construction
2 of new recreation opportunities as well as for the protection of existing recreation opportunities as
3 outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in
4 funding the expansion of state recreation areas in the Delta as described in Recommendation DP
5 R13 of the Delta Plan. However, these impacts are considered significant and unavoidable.

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:** Three recreation areas—Delta Meadows State Park, Brannan Island State Recreation
9 Area, and Sherman Island—are within the construction footprint and would have temporary
10 construction-related activities occurring within or directly adjacent to their boundaries causing
11 temporary disruption to recreational opportunities and uses.

12 Adverse effects on recreational sites within the construction impact area may include restricted
13 access to a recreation facility or use; degraded recreation opportunities and experiences as a result
14 of construction noise or changes to the visual setting; or other conflict with construction activities
15 that adversely affects the ability of visitors to participate in recreational activities at the site. If these
16 effects were to occur, visitors may choose to visit different recreation areas or marinas during the
17 construction period.

18 The effects that have the potential to occur at each recreation facility site are discussed below.
19 Potential indirect effects include disrupted access, noise generated during construction, and changes
20 in the visual character of the area surrounding the recreation sites.

21 *Delta Meadows River Park*

22 **Delta Meadows**

23 According to the California Department of Parks and Recreation website at the time the Draft
24 EIR/EIS was prepared, the Delta Meadows River Park is closed to the public and has no visitor
25 services. It still serves as a preserve, and is a popular mooring site among boaters. This analysis
26 describes the park as if it is accessible to recreationists.

27 Components of Alternative 9 that are within or adjacent to Delta Meadows include the fish screen at
28 the Delta Cross Channel, operable barrier on Snodgrass slough, channel connections and
29 improvements to Meadow Slough, and the construction of permanent access roads along the border
30 of the park, and associated work areas and potential borrow and/or spoil areas. For construction of
31 the fish screen at the Delta Cross Channel, an approximate 18.5 acre temporary work areas would be
32 located at the southwest corner of the park property. This area of open fields appears to receive
33 little recreation use. Construction of the new channel connection would require the use of
34 construction equipment, such as barges and dredges, which could cause construction noise.
35 Construction would also degrade or reduce non-motorized boating, fishing, or wildlife viewing
36 opportunities if wildlife avoids the area because of construction noise. Construction activity at the
37 site of the new connection would also have adverse effects on boaters using the adjacent Meadow
38 Slough, a popular mooring area for houseboaters and other boaters characterized by a relatively
39 quiet, sheltered natural setting. Recreation opportunities at this site could also be affected by the use
40 of the railroad levee road for temporary construction access during creation of the connecting
41 channel between the navigable portion of Meadow Slough and an isolated portion of the slough to
42 the southwest. This levee road is the primary access road into the park property and leads to a

1 parking area and portable restroom (when the park is open). This road is a primary walkway for
2 visitors to the park property engaged in wildlife viewing and other activities. It also provides access
3 to Snodgrass Slough for bank anglers. These recreational activities, if ongoing at the time of
4 construction, would be adversely affected by construction traffic.

5 The levee road on the south edge of the park property would also be used for construction access.
6 This use could disrupt the use of the levee road by recreationists for shore fishing activity, bird
7 watching, wildlife viewing, and walking along the levee.

8 *Brannan Island State Recreation Area*

9 Construction of the operable gate on Threemile Slough would also result in direct effects on
10 recreation opportunities and experiences available at Brannan Island State Recreation Area, if this
11 area is open during project construction. A temporary construction access road is planned to be
12 established at the south end of the State Recreation Area, generally following the route of an existing
13 gas well access road. A temporary work area covering about 5.3 acres in the same area of the State
14 Recreation Area would be needed. The main entrance road to the State Recreation Area would not
15 be used for construction traffic; therefore, recreation access to the State Recreation Area would not
16 be affected.

17 The southernmost portion of the State Recreation Area in the vicinity of these construction activities
18 is primarily undeveloped grassland with informal (user-developed) trails. Fishing activity may take
19 place along the adjacent reach of Threemile Slough. The presence of construction traffic on the
20 gravel road and presence of construction activities in the southern portion of the State Recreation
21 Area would effectively close these areas to this informal trail use and shoreline fishing; however, the
22 recreation use associated with these recreation activities in the past occurred at low levels in this
23 area, particularly on weekdays, when overall visitation to the State Recreation Area is low. Both
24 activities would be available on the extensive areas of the State Recreation Area and its Threemile
25 Slough shoreline that would be unaffected by construction activity.

26 Both land- and water-related construction activities would negatively affect the recreation setting
27 for land-based activities because of noise and visual presence of the construction, which in turn may
28 lead visitors to avoid the informal trails in the southern portion of the State Recreation Area and
29 campers to select campsites away from the construction area. However, weekday camping use in the
30 State Recreation Area (and presumably informal trail use associated with the campground at the
31 south end of the State Recreation Area) is generally low (California Department of Parks and
32 Recreation 2008c), and there are other informal and formal trails and more than 100 campsites
33 available for use in other portions of the State Recreation Area. Because the nearest developed
34 campsites are about 800 feet away from the construction site, and the undeveloped RV rally area is
35 located about 500 feet away, both visual and noise effects on campers would be somewhat lessened.

36 Although the construction activities and equipment would be visible to State Recreation Area
37 visitors using the primarily undeveloped south end of the park, the existing visual setting in the
38 vicinity already includes electric transmission line towers (on both sides of Threemile Slough), and a
39 communication tower with guy wires located close to the Threemile Slough Bridge.

40 *Sherman Island*

41 Land-based construction activities would also occur on Sherman Island, and construction traffic
42 would use East Sherman Island Levee Road. This traffic would be focused on the road entrance

1 located just before Threemile Slough Bridge and on the first 500 feet of the road leading to the
2 construction area. This road is also the main access to Outrigger Marina on Threemile Slough, about
3 1 mile beyond the construction site. Road access would be maintained throughout the construction
4 period, allowing patrons of Outrigger Marina to reach the marina without delays from construction
5 traffic or activities. In addition, adjacent landowners would still be able to access their private docks
6 or the shoreline for recreation activities. Therefore, there would be no effect on recreation
7 opportunities at Outrigger Marina or at private docks related to construction access to Sherman
8 Island.

9 A temporary work area adjacent to the gate on Threemile Slough includes a portion of Sherman
10 Island, which is included in CDFW's Delta Island Hunting Program, a late-season hunt for pheasants
11 and waterfowl on State-owned lands on Twitchell and Sherman islands (California Department of
12 Fish and Game 2009a). The 3.2-acre area on Sherman Island planned for construction is not used for
13 recreation; therefore, temporary use of this land for construction of project facilities would not
14 affect recreation. Construction noise and activities could affect hunting opportunities within the
15 vicinity of the construction activities, depending on the timing of gate construction. If construction is
16 occurring just before or during the hunt, recreation hunting near the gate construction could be
17 degraded, depending on the volume of noise and its effect on waterfowl and pheasants. As discussed
18 in Chapter 12, *Terrestrial Biological Resources*, Section 12.3.3.16, mitigation would be available to
19 address effects on nesting birds and waterfowl populations. In addition, over the longer term of the
20 action alternatives, implementation of CM3 and CM11 will result in protection and enhancement of
21 at least 8,100 acres of managed wetlands (see BDCP Chapter 3, Section 3.4, *Conservation Measures*,
22 Goal MWNC1, Objective MWNC1.1) that will provide suitable habitat conditions for covered species
23 and native biodiversity, including benefiting migratory waterfowl. Under CM3, the protection of
24 cultivated lands will also benefit sandhill crane and other species. As described above in the *Stone*
25 *Lakes National Wildlife Refuge* section, implementation of CM11 would provide beneficial effects on
26 recreation opportunities by allowing recreation to occur on approximately 61,000 acres of lands in
27 the BDCP reserve system. Permitted activities will include hiking, wildlife viewing, docent-led
28 wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating. Additional
29 habitat restoration projects would occur under an environmental commitment to remove RTM from
30 RTM storage areas (which represent a substantial portion of the permanent impact areas) and reuse
31 it, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration
32 projects, or other beneficial means of reuse identified for the material, as described in Appendix 3B,
33 *Environmental Commitments, AMMs, and CMs*.

34 *Stone Lakes National Wildlife Refuge*

35 The construction impact area associated with an access road to be built within the Cosumnes River
36 Preserve at the southwestern corner of the Stone Lakes NWR and near Delta Meadows River Park,
37 would result in minor noise disturbance within the Stone Lakes NWR. The access road lies within
38 the Cosumnes River Preserve. The noise disturbance associated with constructing the access road
39 would have no effect on limited public recreation amenities within the refuge.

40 *Cosumnes River Preserve*

41 The impact area encompasses a portion of the Cosumnes River Preserve in the vicinity of the
42 Mokelumne River and east of the McCormack-Williamson Tract.

43 Within the Cosumnes River Preserve, the southernmost portion of the Cosumnes River Walk 3-mile
44 nature trail passes within about one-third of a mile of the beginning of a construction access road

1 planned for the south levee of the Mokelumne River. The construction access road extends west
2 from that point on Franklin Boulevard to the operable gate site on the Mokelumne River at Lost
3 Slough. Recreation use of the Cosumnes River Walk would not, therefore, be directly affected by the
4 project; however, the recreation experience of trail users may be affected by construction traffic
5 noise.

6 *Dagmar's Landing, Deckhands Marine Supply, and Landing 63*

7 The impact area for Alternative 9 also includes three private commercial marinas; Dagmar's
8 Landing, Deckhands Marine Supply, and Landing 63 are small marinas on the Sacramento River near
9 Walnut Grove with a total of 12–30 berths. These marinas are on the west bank of the Sacramento
10 River, opposite the proposed fish screen and intakes at Meadow Slough and the Delta Cross Channel.
11 In-water work in the Sacramento River may require speed zones and access detours; however, on-
12 water access and use of these marinas would be maintained throughout construction.

13 Construction activities would degrade the recreation experience for boaters using these marinas.
14 These facilities would be directly adjacent to construction activities. Users of these facilities would
15 likely experience undesirable boat traffic delays, congestion, and construction noise effects that
16 would contribute to their loss of enjoyment of boating in the affected area. Environmental
17 commitments for a water navigation plan and noise abatement plan would lessen the adverse effects
18 on recreation experience near construction areas. However, boaters may cease their recreation
19 activities on affected waterways or pursue their recreation activities at a different time or location.

20 *Walnut Grove Marina*

21 The Walnut Grove Marina is a large facility on Snodgrass Slough near Walnut Grove with 180 berths
22 that also offers RV campsites. On-water and vehicular access to the marina would be maintained,
23 and use of the marina's boating facilities would not be affected by land-based construction activities.
24 Boating, picnicking, and camping opportunities would still be available at the marina during
25 construction; however, the recreation experience of marina users may be affected by construction
26 activities.

27 *Bullfrog Landing & Marina, Union Point Marina Bar & Grill, Clifton Court Forebay*

28 The Middle River corridor encompasses Bullfrog Landing & Marina, which provides 43 berths and a
29 small store near Railroad Cut, and Union Point Marina Bar & Grill, a restaurant and bar with a guest
30 dock near Victoria Canal/North Canal. In the south Delta, the impact area encompasses a portion of
31 Clifton Court Forebay and one private commercial marina, Rivers End Marina & Storage. The marina
32 is situated on an inlet off Old River near the Tracy Fish Facility and provides a boat ramp, dry boat
33 storage, and 13 RV campsites.

34 *Campgrounds*

35 Nighttime construction activities would require the use of bright lights that would negatively affect
36 nighttime views of and from the work area. This would affect any overnight camping at the
37 recreation sites and areas discussed above, although day use areas that close at sunset would not be
38 adversely affected. Mitigation Measures AES-4a, AES-4b, AES-4c, and AES-4d would be available to
39 reduce the effects of nighttime construction lighting. As discussed in Chapter 23, *Noise*, Section
40 23.3.3.16, another nighttime effect on recreation would be construction noise levels that could
41 adversely affect camping or other nighttime recreation uses within up to 2,800 feet of construction
42 areas. Nighttime construction would adversely affect camping sites. Nighttime construction would

1 not occur on weekends or holidays. Mitigation Measures NOI-1a and NOI-1b would be available to
2 address these effects.

3 Temporary disruption of use of facilities in the impact area ranges from no effect on recreation
4 amenities to effects relating to construction and noise, dust and degradation of the recreational
5 setting. In the case of the sites discussed above, access to all facilities will be maintained.
6 Environmental commitments to prepare and implement a water navigation plan and noise
7 abatement plan would be implemented to reduce these effects. Because these effects would not be
8 substantial and construction activities would not directly occur within these facilities, effects are not
9 considered adverse.

10 **Summary**

11 Construction of Alternative 9 water conveyance facilities would result in temporary effects related
12 to disruption of recreational opportunities and experiences in the study area during construction.
13 Indirect effects on recreation experiences may occur as a result of impaired access, construction
14 noise, or negative visual effects associated with construction. Overall, construction may occur year-
15 round and last up to 9 years; however, construction in the vicinity of identified recreation facilities
16 would last from 1 to 6 years and in-river construction would be primarily limited to June 1 through
17 October 31 each year.

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 implementation of *AMM20 Greater Sandhill Crane* and
30 *AMM31 Noise Abatement*. These measures, designed to avoid and minimize effects on greater
31 sandhill crane, would be implemented by the BDCP proponents where determined necessary for all
32 covered activities throughout the permit term. These and other BDCP AMMs are detailed in BDCP
33 Appendix 3.C, *Avoidance and Minimization Measures*. Also, as discussed in Appendix 3B,
34 *Environmental Commitments, AMMs, and CMs*, DWR would implement an environmental
35 commitment that would dispose of and reuse spoils, reusable tunnel material, and dredged material.
36 Materials could be reused for purposes such as flood protection, habitat restoration, subsidence
37 reversal. In addition, over the longer term of the action alternatives, implementation of CM3 and
38 CM11 will result in protection and enhancement of 8,100 acres of managed wetlands (see BDCP
39 Chapter 3, Section 3.4, *Conservation Measures*, Goal MWNC1, Objective MWNC1.1) that will provide
40 suitable habitat conditions for covered species and native biodiversity, including benefiting
41 migratory waterfowl. CM3 will also protect cultivated lands, which will benefit sandhill crane and
42 other species. Implementation of CM11 will provide beneficial effects on recreation opportunities by
43 allowing recreation to occur on approximately 61,000 acres of lands in the BDCP reserve system,
44 consisting of grassland, vernal pool complex, riparian, managed wetland, and aquatic natural
45 community types (see BDCP Chapter 4, Section 4.2.3.9.2, *Recreation*). The reserve system would

1 comprise more than 170 miles of trail (25 of which would be new), 4 picnic areas, 15 new trailhead
2 facilities and one updated boating facility, as well as a new boat launch facility within the footprint of
3 the North Delta diversion facilities. Permitted activities will include hiking, wildlife viewing, docent-
4 led wildlife and botanical tours, bicycling, equestrian use, hunting, fishing, and boating.

5 Chapter 17, *Aesthetics and Visual Resources*, Section 17.3.3.16, identifies a number of mitigation
6 measures that would be available to address construction-related visual effects on sensitive
7 receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of
8 visual barriers between construction work areas and sensitive receptors (AES-1b), and locating
9 concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In
10 addition, the chapter identifies measures to address longer term visual effects associated with
11 changes to the landscape/visual setting from construction and the presence of new water
12 conveyance features. These include developing and implementing a spoil/borrow and RTM area
13 management plan (AES-1c), restoring barge loading facility sites once they are decommissioned
14 (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e),
15 restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and
16 implementing best management practices to implement a project landscaping plan (AES-1g). DWR
17 would also make a commitment to enhance the visual character of the area by creating new wildlife
18 viewing sites and enhancing interest in the construction site by constructing viewing areas and
19 displaying information about the project, which may attract people who may use the recreation
20 facilities to the construction site as part of the visit.

21 To further compensate for the loss of access as a result of constructing the river intakes, the BDCP
22 proponents will work with the California Department of Parks and Recreation to help insure the
23 elements of CM1 would not conflict with the elements proposed in DPR's Recreation Proposal for
24 the Sacramento-San Joaquin Delta and Suisun Marsh (California Department of Parks and
25 Recreation 2011d) that would enhance bicycle and foot access to the Delta. This would include the
26 helping to fund or construct elements of the American Discovery Trail and the potential conversion
27 of the abandoned Southern Pacific Railroad rail line that formerly connected Sacramento to Walnut
28 Grove. The BDCP project proponents will ensure that the constructed elements of CM1 would not
29 result in physical barriers to implementing the Delta recreation access elements outlined in the DPR
30 proposal. The BDCP project proponents will also work with DPR to determine if some of the
31 constructed elements of CM1 could incorporate elements of the DPR's proposal.

32 As described in Chapter 19, *Transportation*, Section 19.3.3.2, Mitigation Measure TRANS-1a would
33 involve preparation of site-specific construction traffic management plans that would address
34 potential public access routes and provide construction information notification to local residents
35 and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes
36 of access to affected recreation areas as an environmental commitment. Where construction
37 impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project
38 proponents would provide clear pedestrian, bicycle, and vehicular routes around or across
39 construction sites. These would be designed to be safe, pleasant and would integrate with
40 opportunities to view the construction site as an additional area of interest. These physical facilities
41 would be combined with public information, including sidewalk wayfinding information that would
42 clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would
43 limit construction hours or activities and prohibit construction vehicle trips on congested roadway
44 segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of
45 congested roadway segments.

1 Chapter 23, *Noise*, Section 23.3.3.16, 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, AMMs,*
5 *and CMs*). In addition, specific noise-generating activities near recreation areas would be scheduled
6 to the extent possible so as to avoid effects on passive recreation activities such as walking,
7 picnicking, and 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 1A 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 notably at Delta Meadows State Park, Brannan Island State Recreation Area, and Sherman Island,
19 because of access, noise, and visual setting disruptions that could result in loss of public use. These
20 impacts would be temporary, but may occur year-round. Mitigation measures, environmental
21 commitments, and BDCP AMMs would reduce these construction-related impacts by implementing
22 measures to protect or compensate for effects on wildlife habitat and species; minimize the extent of
23 changes to the visual setting, including nighttime light sources; manage construction-related traffic;
24 and implement noise reduction and complaint tracking measures. However, the level of impact
25 would not be reduced to less than significant because even though mitigation measures and
26 environmental commitments would reduce the impacts on wildlife, visual setting, transportation,
27 and noise conditions that could detract from the recreation experience, due to the dispersed effects
28 on the recreation experience across the Delta, it is not certain the mitigation would reduce the level
29 of these impacts to less than significant in all instances such that there would be no reduction of
30 recreational opportunities or experiences over the entire study area. Therefore, these impacts are
31 considered significant and unavoidable. However, the impacts related to construction of the intakes
32 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 BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 37 Disturbance of Nesting Birds**

38 Please refer to Mitigation Measure BIO-75 in Chapter 12, *Terrestrial Biological Resources*,
39 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 0.5 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

10 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-4.

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 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
17 **Congested Roadway Segments**

18 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
19 Impact TRANS-1.

20 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
21 **Agreements to Enhance Capacity of Congested Roadway Segments**

22 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
23 Impact TRANS-1.

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

26 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

27 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
28 **Tracking Program**

29 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

30 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
31 **Result of Constructing the Proposed Water Conveyance Facilities**

32 **NEPA Effects:** Adverse changes to boat passage and navigation, including obstructions to boat
33 passage and boat traffic delays, would occur during the construction of Alternative 9. Temporary
34 channel closures may also be required that could impede boat movement. Construction of fish
35 screens, operable gates, and boat passage facilities would include the installation of cofferdams in

the waterways and the use of barges, barge-mounted cranes, or other large waterborne equipment. Piers or temporary barge unloading facilities could also be located at the fish screens, gate sites, or spoil/dredged material storage areas. Construction equipment, such as barges and dredges, could obstruct boat passage or cause congestion in high traffic areas, as could the placement of cofferdams or barge unloading facilities. Channel obstructions and potential congestion may pose navigational and safety hazards to boaters. Reduced boat speed limits could cause further boat traffic delays in the vicinity of the construction sites.

Conveyance Facilities—Operable Gates, Fish Screens, Dredging, and Channel Modifications

Construction of Alternative 9 conveyance facilities would result in temporary obstruction of boat passage and may cause boat traffic delays or navigation hazards to boaters.

Operable Gates and Fish Screens

On the waterways where an operable gate is planned, boat passage and navigation would be adversely affected by restriction in the width of the channels open to boat passage and in-channel obstructions during construction. Construction activities would typically include the installation of cofferdams in the waterways and the use of barges, barge-mounted cranes, or other large waterborne equipment that would obstruct portions of the channel. For culvert siphons and operable gate sites, construction, including the installation of cofferdams, would be phased, allowing for at least half of the waterway to remain open at any one time. In this way, use of the waterway for recreational navigation would be allowed to continue during construction.

Boats would be unable to use the portion of the waterway where construction was occurring and would be required to navigate around obstructions within the channel. Effects to boat passage and navigation as a result of construction would be temporary and reduced with implementation of environmental commitments to prepare and implement a water navigation plan and provide notification of maintenance activities in waterways (*Appendix 3B, Environmental Commitments, AMMs, and CMs*).

Reduced boat speed limits would be required and would be posted in the vicinity of the construction sites. Some of the gate sites are within existing speed restriction zones because of the presence of marinas and private docks.² Reduced speeds in areas of moderately high- or high-volume boat traffic (primarily during summer weekends) could increase congestion on the water in those areas. However, the waterways in the vicinity of the gate construction sites would remain open to boat passage at most times, and any necessary channel closures would be short-term (typically less than 1–2 days) and avoid weekends.

Boaters may be able to use alternative routes to reach their desired destinations and avoid traffic delays while passing through the construction zones. However, most detours would require traveling a considerably greater distance and may not be practical or desirable for many boaters. Because gates could be constructed in multiple locations simultaneously, alternative routes without construction activity may not be available between some destinations (e.g., between the Sacramento and Mokelumne rivers near Walnut Grove or between Old and Middle Rivers in the south Delta).

Effects on boat passage and navigation on the Sacramento River, near Locke and Walnut Grove, would be associated with construction of fish screens and intakes would be similar to the effects of

² State law restricts speed to 5 miles per hour when passing within 200 feet of any docks or boat mooring location.

1 operable gate construction. The navigation channel would be narrowed and boat speeds could be
2 reduced in the vicinity of the fish screen and channel construction sites, but boat passage would
3 remain open and available at most times.

4 The operable gate at Georgiana Slough would be built in conjunction with a fish screen across the
5 mouth of the slough, with a boat lock. The fish screen would occupy a portion of the Sacramento
6 River channel along the east bank of the river, restricting the width of the channel available for boat
7 passage and potentially increasing congestion in this busy area. This could also have an adverse
8 effect on boating recreation on this portion of the Sacramento River.

9 *Siphons*

10 Effects on boat passage and navigation during the construction of siphons on Old River and West
11 Canal, on the east and west sides of Coney Island, would also be similar to the effects of operable
12 gate construction.

13 Both Old River and West Canal are popular south Delta boating routes with probable high traffic
14 volume at peak-use times. In particular, boaters use these waterways to move between access
15 points, such as Rivers End Marina & Storage, a few miles to the south, and waterskiing and
16 wakeboarding channels, such as Victoria Canal/North Canal and Woodward Canal, to the north.
17 These waterways are also used by waterskiers, wakeboarders, other pleasure boaters, and anglers.

18 *Channel Modifications*

19 Channel connections would occur in two areas on Meadow Slough, one portion would connect a
20 navigable portion of the slough to a non-navigable isolated portion of the slough. From the
21 westernmost point of the slough a new channel connection would be made to the Sacramento River
22 as part of the fish corridor. There is currently no boat passage at this point on Meadow Slough;
23 therefore, there would be no effect on boat passage and navigation related to construction at that
24 location.

25 Modification of the channel of Old River near the mouth of the Delta-Mendota Canal would involve
26 filling in the existing channel between the Tracy Fish Facility and Fabian Tract, thereby eliminating
27 access to and from the Rivers End Marina & Storage and connectivity between Old River and Delta-
28 Mendota Canal. A new channel would be designed and constructed between Old River and Rivers
29 End Marina & Storage. This channel would maintain a connection between Old River and Delta-
30 Mendota Canal and would allow for continued access to Rivers End Marina & Storage from Old
31 River. Although the new channel would preserve the continuity of the Old River channel north and
32 south of the Delta-Mendota Canal, boat passage likely would be disrupted periodically during
33 construction. Boat traffic in this area would be expected to be moderately high at peak-use times
34 because the Rivers End Marina & Storage launch ramp and dozens of boat docks associated with
35 private homes and cabins are in the vicinity.

36 Construction of the new channel would require the use of construction equipment, such as barges
37 and dredges, which could cause construction noise. Construction activities would also degrade or
38 reduce fishing or wildlife viewing opportunities if wildlife avoids the area because of construction
39 noise. The effects on fishing, hunting, or wildlife viewing opportunities in the vicinity of the
40 construction from noise would be temporary, but long-term, lasting up to 9 years.

1 *Dredging Activities*

2 Dredging activities are proposed on the Middle River between Empire Cut and Victoria Canal and in
3 Victoria Canal/North Canal. Dredging in these waterways would require the establishment of safety
4 zones around the dredge while it is in operation. The dredge and any associated barges or pipeline
5 used for sediment disposal would be marked with signage and lights as required by U.S. Coast Guard
6 regulations. Dredging on narrow reaches of the Middle River channel and on Victoria Canal/North
7 Canal may require temporary closure of the channel in the vicinity of the dredge. A side channel that
8 would not be dredged would be available alongside most portions of the reach of Middle River to be
9 dredged, which would allow unimpeded boat passage. Similarly, the parallel channels of Victoria and
10 North Canals, each about 200 feet wide, would allow continued boat passage at most times because
11 the dredger would be used on only one side of the waterway at a time. However, closure or other
12 limitation of one side of the waterway will interfere with the waterskiing activity here, where each
13 channel is informally regarded as "one way."

14 The dredging on Middle River and Victoria Canal/North Canal also would require the construction of
15 barge unloading facilities at two locations on Middle River and one location on North Canal
16 (Mapbook Figure M15-5). The facilities would be used to transfer dredged material to spoil sites and
17 would be removed after construction was completed. On Middle River, the barge unloading facilities
18 would occupy about 850 feet of the west bank of the river, at a site about 0.5 mile north of Railroad
19 Cut and a similar portion of the east bank of the river at a site about 1 mile south of Woodward Cut.
20 At the site north of Railroad Cut, the river splits into two channels around a large, vegetated island,
21 and the west channel is about 400–500 feet wide. Although the barge facility and operations would
22 occupy part of the channel and would restrict boat passage, boat traffic could continue to use the
23 west channel and could also use the east channel, which would be unobstructed and which is not
24 subject to dredging. At the site south of Woodward Cut, the river also splits into two channels
25 around a large, vegetated island, but the east channel is only about 200 feet wide. Therefore, the
26 barge unloading facility and barge operations at this location could occupy a substantial portion of
27 the east channel of the river, constricting or preventing boat passage in that channel. The 200- to
28 250-foot-wide west channel would be unaffected and would continue to permit unobstructed boat
29 passage. However, peak boat traffic volume is high at this location. Because all or most boat traffic
30 would be confined to the west channel by the barge unloading facility and barge operations,
31 increased boat traffic congestion is likely to occur during peak use (primarily summer weekends).

32 On North Canal, the barge unloading facility would occupy about 1,200 feet of the north bank of the
33 canal, at a site about 1 mile west of Middle River. The canal is about 150–200 feet wide at this
34 location. Therefore, the barge unloading facility and barge operations at this location could occupy a
35 substantial portion of the canal, constricting or preventing boat passage. The parallel and similarly
36 sized Victoria Canal would be unaffected by the barge unloading facility and would continue to
37 permit unobstructed boat passage, although dredging activity would occur in both canals. Peak boat
38 traffic volume is high at this location. Because all or most boat traffic would be confined to Victoria
39 Canal by the barge unloading facility and barge operations, increased boat traffic congestion is likely
40 to occur during peak use (primarily summer weekends).

41 *Temporary Barge Unloading Facilities*

42 Temporary barge unloading facilities may be located adjacent to four of the operable gate
43 construction sites: Fishermen's Cut at San Joaquin River, Old River at San Joaquin River, Railroad Cut
44 at Middle River, and Woodward Cut at Middle River. The facilities would be used to transfer

1 operable gate construction equipment and materials to and from the gate sites and would be
2 removed after construction is completed. At the Fishermen's Cut and Old River gate sites, the barge
3 unloading facilities would be built on the San Joaquin River and would occupy about 800 feet of the
4 riverbank. In both of these locations, the San Joaquin River is about 0.5-mile wide. Therefore, the
5 barge unloading facilities and the barges using them would temporarily occupy a relatively small
6 portion at one side of the channel.

7 Similar barge unloading facilities would be built on Middle River, immediately south of the Railroad
8 Cut and Woodward Cut gate construction sites. The facilities would be used to transfer operable gate
9 construction equipment and materials to and from the gate site and to transfer dredged material to
10 spoil sites. The facilities would be removed after construction is completed. These facilities would
11 occupy about 1,100 feet and 900 feet, respectively, of the riverbank in those areas. The Middle River
12 in both locations is about 600–650 feet wide and is characterized by a split channel, with a vegetated
13 island in the middle of the river. The barge unloading facilities and barge operations at these two
14 locations could occupy a substantial portion of the west channel of the river, constricting or
15 preventing boat passage in that channel. At both locations the 150- to 200-foot-wide east channel
16 would be unaffected and would continue to permit unobstructed boat passage. However, peak boat
17 traffic volume is high at these locations. Because all or most boat traffic would be confined to the
18 east channel by the barge facility and barge unloading operations, increased boat traffic congestion
19 is likely to occur during peak use (primarily summer weekends) at these locations.

20 Adverse direct and indirect effects on boat passage and navigation and associated recreational
21 activities such as waterskiing and wakeboarding would occur as a result of construction of the
22 conveyance facility features. Boats would be unable to use the portion of the waterways where
23 construction was occurring and would be required to navigate around obstructions within the
24 channel and observe speed restrictions. Mitigation Measure TRANS-1a would be available to reduce
25 effects to marine navigation by development and implementation of site-specific construction traffic
26 management plans, including specific measures related to management of barges and stipulations to
27 notify the commercial and leisure boating communities of proposed barge operations in the
28 waterways. Additionally, BDCP proponents would contribute funds for the construction of new
29 recreation opportunities as well as for the protection of existing recreation opportunities as outlined
30 in 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. For the reopening of Brannan Island State Recreation Area, completion of Delta
33 Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
34 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
35 concurrent with, commencement of construction of the BDCP. This mitigation serves to compensate
36 for the loss of recreational opportunities within the project area by providing a recreational
37 opportunity downstream/upstream in the same area for the same regional recreational users. These
38 commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

39 Invasive aquatic vegetation can limit access to boats and reduce swimming areas. *CM13 Invasive*
40 *Aquatic Vegetation Control* provides for the control of egeria, water hyacinth, and other IAV
41 throughout the Plan Area. However, the BDCP proponents would also commit to partner with
42 existing programs operating in the Delta (including DBW, U.S. Department of Agriculture–
43 Agriculture Research Service, University of California Cooperative Extension Weed Research and
44 Information Center, California Department of Food and Agriculture, local Weed Management Areas,
45 Resource Conservation Districts, and the California Invasive Plant Council) to perform risk
46 assessment and subsequent prioritization of treatment areas to strategically and effectively reduce

1 expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where
2 initial control efforts would occur to maximize the effectiveness of the conservation measure. The
3 funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP.
4 Enhanced ability to control these invasive vegetation would lead to increased recreation
5 opportunities which would compensate for the loss of recreational opportunities within the project
6 area by providing a recreational opportunity downstream/upstream in the same area for the same
7 regional recreational users. This commitment is described in Appendix 3B, *Environmental
8 Commitments, AMMs, and CMSs*.

9 *CM13 Invasive Aquatic Vegetation Control* and the environmental commitments would create and
10 rehabilitate alternative recreation opportunities for those eliminated during construction. BDCP
11 proponents would also ensure through various outreach methods that recreationists were aware of
12 nearby recreation opportunities for similar water sports (e.g., Victoria Canal, Empire Cut or Bishop
13 Cut). Nonetheless, these effects would be long-term, lasting approximately 5 years and would be
14 considered adverse because of the reduced recreation opportunity and experiences expected to
15 exist near construction activity.

16 **CEQA Conclusion:** Significant impacts on boat passage and navigation and associated recreational
17 activities such as waterskiing and wakeboarding would occur as a result of construction of the
18 conveyance facility features of Alternative 9. In areas where construction is occurring, boats would
19 be unable to use the portion of the waterways and be required to navigate around obstructions
20 within the channel and observe speed restrictions. Mitigation Measure TRANS-1a would reduce
21 impacts on marine navigation by development and implementation of site-specific construction
22 traffic management plans, including specific measures related to management of barges and
23 stipulations to notify the commercial and leisure boating communities of proposed barge operations
24 in the waterways. While the environmental commitments would reduce impacts on water-based
25 recreation (water-skiing, wakeboarding, tubing) in these areas by creating alternative recreation
26 opportunities for those eliminated during construction, these impacts would be long-term and
27 therefore considered significant and unavoidable.

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 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a 33 Result of Constructing the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** Effects on recreational fishing under Alternative 9 would be similar to those described
35 under Alternative 1A, Impact REC-4. As discussed in Chapter 11, *Fish and Aquatic Resources*, Section
36 11.3.4.16, Sacramento River and Delta region fish populations would not be affected by changes to
37 localized water quality conditions, underwater noise, fish stranding or other physical disturbances,
38 or reduced habitat areas such that recreational fishing opportunities would be substantially reduced
39 during construction. BDCP environmental commitments to prevent water quality effects include
40 environmental training; implementation of stormwater pollution prevention plans, erosion and
41 sediment control plans, hazardous materials management plans, and spill prevention, containment,
42 and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations
43 plan (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*). RTM would be removed from

RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Mitigation Measures AQUA-1a and AQUA-1b would be available to avoid and minimize adverse effects on sport fish populations from impact pile driving. However, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers. Although fish populations likely would not be affected to the degree that fishing opportunities would be substantially reduced, construction conditions would introduce noise and visual disturbances that would affect the recreation experience for anglers.

While construction noise would be temporary, and primarily be limited to Monday through Friday, it would be ongoing for up to 24 hours per day and for up to 5 years near individual work sites. Visual setting disruptions could distract from the recreation experience including on weekends. However, Mitigation Measures NOI-1a and NOI-1b would address construction noise effects. Additionally, specific noise-generating activities near recreation areas would be scheduled to the extent possible so as to avoid effects on passive recreation activities on-shore fishing. Mitigation measures would also be available to address construction-related visual effects on sensitive receptors from vegetation removal for transmission lines and access routes (AES-1a), provision of visual barriers between construction work areas and sensitive receptors (AES-1b), and locating concrete batch plants and fuel stations away from sensitive resources and receptors (AES-1f). In addition, the chapter identifies measures to address longer term visual effects associated with changes to the landscape/visual setting from construction and the presence of new water conveyance features. These include developing and implementing a spoil/borrow and RTM area management plan (AES-1c), restoring barge loading facility sites once they are decommissioned (AES-1d), applying aesthetic design treatments to all structures to the extent feasible (AES-1e), restoring concrete batch plants and fuel stations upon removal of facilities (AES-1f), and implementing best management practices to implement a project landscaping plan (AES-1g). Overall, construction of the proposed water conveyance facilities would not degrade the fishing experience for boat and on-shore fishing locations. Additionally, anglers could move to other locations along the Sacramento River and throughout the Delta region and REC-2 would provide anglers with alternative bank fishing access sites further removed from areas affected by construction. Therefore, construction of the proposed water conveyance facilities would not result in a long-term reduction of fishing opportunities. This effect would not be adverse.

CEQA Conclusion: The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, RTM, and dredged material; and a barge operations plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*) and Mitigation Measures AQUA-1a and AQUA-1b to avoid and minimize adverse effects on sport fish populations from impact pile driving. Mitigation Measure REC-2 would ensure continued access for bank fishing at established sport fishing locations such that there would be no long-term reduction of local fishing opportunities and experiences. This 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: Monitor Underwater Noise, and if Necessary, Use an
9 Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related
10 Underwater Noise**

11 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
12 Alternative 1A, Impact AQUA-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 **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 **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 9 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 11.3.4.16, 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 9 would be considered less than significant because any impacts to fish and,
24 as a result, impacts to recreational fishing, are anticipated to be isolated to certain areas and would
25 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 9 would result in changes in the frequency with which the
30 end of September reservoir levels at study area reservoirs fall below levels identified as important
31 water-dependent recreation thresholds relative to Existing Conditions (CEQA baseline) and the No
32 Action Alternative (2060) (alternative operations contribution [impact] comparison) (Table 15-12a
33 and Table 15-12b). These changes are discussed below. Also see Chapter 3, *Description of*
34 *Alternatives*, Section 3.6.4.2, for detailed information on the operational scenarios, and Appendix 5A,
35 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, for an explanation of the CALSIM
36 II model and assumptions.

37 **Existing Conditions (CEQA Baseline) Compared to Alternative 9 (2060)**

38 As shown in Table 15-12a and Table 15-12b, under Alternative 9 there would be from 3 to 26
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, Shasta Lake, Lake Oroville, Folsom Lake, and San Luis Reservoir. However, as discussed
3 under Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
4 caused by sea level rise, climate change, and operation of the alternative. It is not possible to
5 specifically define the exact extent of the changes due to implementation of the action alternative
6 using these model simulation results. Thus, the precise contributions of sea level rise and climate
7 change to the total differences between Existing Conditions and Alternative 9 cannot be isolated in
8 this comparison. Please refer to the comparison of the No Action Alternative (2060) to Alternative 9
9 (2060) for a discussion of the potential effects on end-of-September reservoir and lake elevations
10 attributable to operation of Alternative 9.

11 **No Action Alternative (2060) Compared to Alternative 9 (2060)**

12 The comparison of Alternative 9 (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,
15 *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*).

16 In comparisons of Alternative 9 (2060) operations to No Action Alternative (2060), the CALSIM II
17 modeling results indicate that reservoir levels under Alternative 9 operations, with the exception of
18 Lake Oroville and San Luis Reservoir, would fall below the individual reservoir thresholds less
19 frequently than under No Action Alternative (2060) (Table 15-12a and Table 15-12b). At Lake
20 Oroville, the modeling indicates there would be three additional years in which recreation
21 thresholds may be exceeded. This is a less than 10% change. These changes in reservoir elevations
22 would not be adverse at Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones
23 Lake. At Trinity Lake, Shasta Lake, Folsom Lake, and New Melones Lake these changes would be
24 considered beneficial effects on recreation opportunities and experiences under Alternative 9
25 operations because there would be fewer years in which the lake levels fall below the recreation
26 threshold relative to No Action Alternative (2060) conditions. Operation of Alternative 9 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 9 because there
29 would be fewer years in which end-of-September reservoir levels would fall below the recreation
30 thresholds thus indicating better boating opportunities, when compared to No Action Alternative
31 (2060) conditions.

32 At San Luis Reservoir, recreation boating opportunity in September would be reduced more
33 frequently under Alternative 9 (2060) (20 years) relative to No Action Alternative (2060) for the
34 Dinosaur Point boat launch. However, access to the Basalt boat launch, which is available to
35 reservoir elevation 340 feet, would not substantially change relative to the No Action Alternative
36 (2060) (there would be five additional years below the threshold). This is a less than 10% change
37 and would not result in a substantial reduction in recreation opportunities or experiences. Shoreline
38 fishing would still be possible, and other recreation activities at the reservoir—picnicking, biking,
39 hiking, and fishing—would be available. These changes would not be adverse.

40 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
41 Trinity Lake, Shasta Lake, Lake Oroville, Folsom Lake, and New Melones Reservoir would be less
42 than significant because the CALSIM II modeling results indicate that reservoir levels attributable to
43 Alternative 9 (2060) operations would either result in a less than 10% change (Lake Oroville) or
44 would fall below the individual reservoir thresholds less frequently than under No Action

1 Alternative (2060). Because overall there would be fewer years in which the reservoir or lake levels
 2 fall below the recreation threshold relative to No Action Alternative (2060) conditions, these
 3 impacts would be considered beneficial impacts on recreation opportunities and experiences. At San
 4 Luis Reservoir, although boating opportunity would be reduced more frequently for the Dinosaur
 5 Point boat launch, access to the Basalt boat launch would not substantially change. The modeling
 6 indicates there would be five additional years when reservoir elevations would exceed the
 7 recreation threshold under operation of Alternative 9 (2060) relative to the No Action Alternative
 8 (2060). This would be a less than 10% change and would be less than significant. Operation of
 9 Alternative 9 would not substantially affect water-dependent or water-enhanced recreation at these
 10 reservoirs. Overall, Alternative 9 would result in a less-than-significant impact on recreation
 11 opportunities and experiences. No mitigation is required.

12 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a 13 Result of Maintenance of the Proposed Water Conveyance Facilities**

14 **NEPA Effects:** Maintenance activities, such as painting, cleaning, making repairs, conducting
 15 biofouling prevention, conducting corrosion prevention, and maintaining equipment, could have a
 16 minor effect on boat passage and in the waterways where operable barriers, intakes and fish screens
 17 are installed. Repair efforts requiring barges and divers, as well as activities to remove debris and
 18 sediment, could cause a temporary impediment to boat movement and result in slowing of boat
 19 traffic in the immediate vicinity of the affected structure and reduce opportunities for waterskiing,
 20 wakeboarding and tubing in the immediate vicinity of the structures. However, boat passage and
 21 navigation would still be possible around any barges or other maintenance equipment and these
 22 effects would be expected to be short-term (2 years or less).

23 Maintenance of Alternative 9 facilities would result in temporary, but not substantial adverse effects
 24 on boat passage and water-based recreational activities. Any effects would be short-term and
 25 intermittent. Other facility maintenance activities would occur on land and would not affect boat
 26 passage and navigation. Implementation of the environmental commitment to provide notification
 27 of maintenance activities in waterways (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*)
 28 would reduce these effects. These effects are not considered adverse.

29 **CEQA Conclusion:** Effects resulting from the maintenance of intake facilities would be short-term
 30 and intermittent and would not result in any significant effects on boat passage, navigation, or
 31 water-based recreation within the vicinity of the intakes. In addition, implementation of the
 32 environmental commitment to provide notification of maintenance activities in waterways
 33 (Appendix 3B, *Environmental Commitments, AMMs, and CMSs*) would further minimize these effects.
 34 Maintenance impacts on recreation would be considered less than significant because impacts, if
 35 any, on public access or public use of established recreation facilities would last for 2 years or less.
 36 No mitigation is 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:** Maintenance activities for the conveyance facilities may include painting, landscaping,
 40 equipment replacement, and mechanical repairs that would be short-term and intermittent and
 41 would not affect recreation opportunities. Maintenance activities for these facilities would occur
 42 within the individual facility right-of-way, which does not include any recreation facilities or
 43 recreation use areas. In addition, there would be no public recreation use of the new facilities.

Maintenance activities would not result in any significant noise that would affect nearby recreational opportunities. Therefore, there would be no effects on recreation opportunities as a result of maintenance of Alternative 9 facilities.

CEQA Conclusion: Maintenance of conveyance facilities would be short-term and intermittent and would not result in any changes to recreational opportunities. Therefore, there would be no impact. Mitigation is not required.

Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of Implementing CM2–CM21

NEPA Effects: Construction, and operation and maintenance of the proposed conservation components as part of Alternative 9 could have effects related to recreational fishing that are similar in nature to those discussed above for construction, and operation and maintenance of proposed water conveyance facilities. Although similar in nature, the potential intensity of any effects would likely be substantially lower because the nature of the activities associated with implementing the conservation components would be different—less heavy construction equipment would be required and the restoration actions would be implemented over a longer time frame than CM1. Potential effects from implementation of the conservation components would be dispersed over a larger area and would generally involve substantially fewer construction and operation effects associated with built facilities. Additionally, overall, the habitat restoration and enhancement components would be expected to result in long-term benefits to aquatic species. Additional discussion related to the individual conservation measures is provided below.

With regards to fishing opportunities, effects of implementing the conservation components under Alternative 9 would be similar to those described for Alternative 1A; however, locations or target acreages may vary for proposed conservation activities. CM2–CM21 would be expected to improve fishing opportunities in the study area although some effect on fishing opportunities could take place during implementation of the conservation measures. Overall, implementing the proposed conservation components would be expected to provide beneficial effects on aquatic habitat and fish abundance thereby improving fishing opportunities.

CEQA Conclusion: CM2–CM21 in the long-term would be expected to improve fishing opportunities by enhancing fish habitat in the Yolo Bypass; restoring tidal habitat, seasonally inundated floodplains, channel margins, and riparian habitat; controlling aquatic vegetation and predators; controlling illegal harvest of covered species; and expanding boat launch facilities. During the implementation stage, these measures could result in impacts on fishing opportunities by temporarily or permanently limiting access to fishing sites and disturbing fish habitat. CM2 would increase the floodplain footprint in the Yolo Bypass Wildlife Area, which would result in decreased onshore fishing opportunities. These impacts would be considered less than significant because the BDCP would include environmental commitments 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, AMMs, and CMs*). CM4, CM13, and CM15 target predator fish species and although these CMs would result in highly localized reductions of predatory species, overall, these measures would not result in an appreciable decrease in Delta-wide abundances of predatory game fish (refer to Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.16). Construction of facilities could have short-term impacts on the noise or visual setting and could indirectly affect recreational fishing. The potential impact on covered and non-covered sport fish species from construction activities would be considered less than significant because the BDCP

would include environmental commitments to prevent water quality effects include environmental training; implementation of stormwater pollution prevention plans, erosion and sediment control plans, hazardous materials management plans, and spill prevention, containment, and countermeasure plans; disposal of spoils, and dredged material; and a barge operations plan (Appendix 3B). In addition, mitigation measures and environmental commitments identified to reduce the effects of constructing CM1 would also be used to minimize effects of construction on recreation (i.e., visual conditions, noise, transportation/access) associated with implementation of the other conservation components. Because construction of the conservation measure component facilities would be less intense and of shorter duration than construction of CM1 conveyance facilities, the mitigation measures and environmental commitments would reduce the construction-related impacts on recreational fishing associated with the other conservation measures to a less-than-significant level. Further, the individual facilities or conservation elements will undergo additional environmental review and permitting which will include identification of site-specific measures to further protect resources.

Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan and consultation with CDFW to expand recreational opportunities (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; also see additional discussion under Impact REC-2 and Impact REC-3, above). In addition, a number of mitigation measures will address construction-related impacts on recreational fishing by reducing the degree of aesthetic and visual degradation at construction sites (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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c address traffic and transportation safety and access conditions that could affect public use of recreation areas (see additional discussion under Impact REC-2 and Impact REC-3, above, and Chapter 19, *Transportation*, Section 19.3.3.16). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.16). Finally, should construction of conservation measure facilities require pile-driving, mitigation measures to protect fish and aquatic species would be implemented to reduce these impacts (see additional discussion under Impact REC-4, above and Chapter 11, *Fish and Aquatic Resources*, Section 11.3.4.16).

In the long term, the impact on fishing opportunities would be considered beneficial because the conservation measures are intended to enhance aquatic habitat and fish abundance.

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.

Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and Sensitive Receptors

Please refer to Mitigation Measure AES-1b in Chapter 17, *Aesthetics and Visual Resources*, 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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

29 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
30 Alternative 1A, Impact AES-4.

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.

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: Monitor Underwater Noise, and if Necessary, Use an**
20 **Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related**
21 **Underwater Noise**

22 Please refer to Mitigation Measure AQUA-1b in Chapter 11, *Fish and Aquatic Resources*,
23 Alternative 1A, Impact AQUA-1.

24 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
25 **as a Result of Implementing CM2–CM21**

26 **NEPA Effects:** Effects on boating-related recreation activities stemming from implementation of the
27 conservation components under Alternative 9 would be similar to those described for Alternative
28 1A; however, locations or target acreages may vary for proposed conservation activities.
29 Implementing the conservation measures could result in an adverse effect on recreation by reducing
30 the extent of navigable waterways available to boaters. Once implemented, the conservation
31 measures could provide beneficial effects to recreation by expanding the extent of navigable
32 waterways available to boaters, improving and expanding boat launch facilities, and removing
33 nonnative vegetation that restricts or obstructs navigation. Because these measures would not be
34 anticipated to result in a substantial long-term disruption of boating activities, this would not be an
35 adverse effect.

Under CM18, construction of a genetic refuge and research facility at the former Army Reserve base near the Delta Marina Yacht Harbor could result in construction-related effects on boaters at this site. The BDCP proponents would implement environmental commitments to include a noise abatement plan (Appendix 3B, *Environmental Commitments, AMMs, and CMs*; 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, AES-4c, and AES-4d; 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 19.3.3.16). 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 23.3.3.16).

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 base 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, AMMs, and CMs*; 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, AES-4c, and AES-4d; also see additional discussion under Impact REC-2 and Impact REC-3, above). Mitigation Measures TRANS-1a, TRANS-1b, and TRANS-1c 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 19.3.3.16). Mitigation Measures NOI-1a and NOI-1b address construction-related noise concerns (see additional discussion under Impact REC-2 and Impact REC-3, above and Chapter 23, *Noise*, Section 23.3.3.16). 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 a less-than-significant level. No additional mitigation would be required.

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 AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

6 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
7 Alternative 1A, Impact AES-4.

8 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
9 **Plan**

10 Please refer to Mitigation Measure TRANS-1a in Chapter 19, *Transportation*, Alternative 1A,
11 Impact TRANS-1.

12 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
13 **Congested Roadway Segments**

14 Please refer to Mitigation Measure TRANS-1b in Chapter 19, *Transportation*, Alternative 1A,
15 Impact TRANS-1.

16 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
17 **Agreements to Enhance Capacity of Congested Roadway Segments**

18 Please refer to Mitigation Measure TRANS-1c in Chapter 19, *Transportation*, Alternative 1A,
19 Impact TRANS-1.

20 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
21 **Construction**

22 Please refer to Mitigation Measure NOI-1a in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

23 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
24 **Tracking Program**

25 Please refer to Mitigation Measure NOI-1b in Chapter 23, *Noise*, Alternative 1A, Impact NOI-1.

26 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
27 **Result of Implementing CM2–CM21**

28 **NEPA Effects:** Implementing the conservation components under Alternative 9 would have similar
29 effects on upland recreation activities as those described for Alternative 1A; however, locations or
30 target acreages may vary for proposed conservation activities. Implementing the conservation
31 measures could result in an adverse effect on recreation opportunities by reducing the extent of
32 upland recreation sites suitable for hiking, nature photography, or other similar activities. However,
33 environmental commitments would reduce these effects, and implementation of the conservation
34 measures also could provide a benefit to recreation from improved quality of upland recreation
35 opportunities. CM17–CM21 involve enforcement, management, or other individual, localized project
36 components that would not affect upland recreation opportunities. CM17 is an enforcement funding
37 mechanism and would not result in a physical change to upland areas; construction under CM18,

1 CM19, or CM21 would not affect existing upland recreation areas; and CM20 is an enforcement
 2 action primarily located at boat launches and would not affect upland recreation areas and related
 3 opportunities. These measures are not discussed further in this analysis.

4 **CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
 5 conservation measures would temporarily limit opportunities for upland recreational activities
 6 where they occur in or near existing recreational areas. Noise, odors, and visual effects of
 7 construction activities would also temporarily compromise the quality of upland recreation in and
 8 around these areas. Additionally, it is possible that current areas of upland recreation would be
 9 converted to wetland or other landforms poorly suited to hiking, nature photography, or other
 10 activities. These impacts on upland recreational opportunities would be considered less than
 11 significant because the BDCP would include environmental commitments that would require BDCP
 12 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities, as
 13 described in Recommendation DP R14 of the Delta Plan (Appendix 3B, *Environmental Commitments,*
 14 *AMMs, and CMs*). Near-term implementation would also restore or enhance new potential sites for
 15 upland recreation and the measure would improve the quality of existing recreational opportunities
 16 adjacent to areas modified by the conservation measures. These measures would not be anticipated
 17 to result in a substantial long-term disruption of upland recreational activities; thus, this impact is
 18 considered less than significant.

19 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other
 20 Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations
 21 Addressing Recreation Resources**

22 **NEPA Effects:** Constructing the proposed water conveyance facilities (CM1) and implementing CM2–
 23 CM21 under Alternative 9 could result in the potential for incompatibilities with plans and policies
 24 related to protecting recreation resources of the Delta. A number of plans and policies that coincide
 25 with the study area provide guidance for recreation resource issues as overviewed in Section 15.2,
 26 *Regulatory Setting*. This overview of plan and policy compatibility evaluates whether Alternative 9 is
 27 compatible or incompatible with such enactments, rather than whether impacts are adverse or not
 28 adverse or significant or less than significant. If the incompatibility relates to an applicable plan,
 29 policy, or regulation adopted to avoid or mitigate recreation effects, then an incompatibility might
 30 be indicative of a related significant or adverse effect under CEQA and NEPA, respectively. Such
 31 physical effects of Alternative 9 on recreation resources is addressed in Impacts REC-1 through REC-
 32 11, and in other chapters such as Chapter 23, *Noise*, Section 23.3.3.16, and Chapter 17, *Aesthetics and*
 33 *Visual Resources*, Section 17.3.3.16. The following is a summary of compatibility evaluations related
 34 to recreation resources for plans and policies relevant to the BDCP.

35 The *New Melones Lake Area Final Resource Management Plan, Management Guide for the Shasta and*
36 Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area, General Management Plan
37 for the Whiskeytown Unit of the Whiskeytown-Shasta-Trinity National Recreation Area, Folsom Lake
38 State Recreation Area General Plan, Lake Oroville State Recreation Area Resource Management Plan
39 and General Development Plan, and San Luis Reservoir State Recreation Area General Development
40 Plan all have policies or goals to protect the recreation resources and promote a range of
 41 opportunities to visitors to these areas. Construction and operation of the proposed water
 42 conveyance facilities and other conservation measures would not affect recreation opportunities in
 43 these areas and would be compatible with these plans.

1 The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992 (Delta Protection Act), *Delta*
2 *Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta,*
3 *Delta Plan*, and *Brannan Island and Franks Tract State Recreation Areas General Plan* are all focused
4 on the protection of resources, including recreation resources, within the Delta. These plans have
5 policies, objectives, or goals intended to protect and enhance existing recreation and encourage
6 development of new local and regional opportunities. Constructing the proposed conveyance
7 facilities would result in long term disruption to existing established recreation areas in the study
8 area and change the nature of the recreation setting. The proposed water conveyance elements
9 could be considered incompatible with measures to protect existing recreation opportunities in the
10 study area.

11 The Delta Protection Act, the Delta Protection Commission's Great California Delta Trail System, and
12 the *Great California Delta Trail Blueprint Report for Contra Costa and Solano Counties* all promote
13 development of a regional trail system providing a continuous regional recreational corridor to
14 provide bikeways and hiking trails. The BDCP proponents would work with these regional and local
15 efforts to design proposed restoration areas to be compatible with and complement the goals of
16 creating a regional trail network and where feasible to adapt restoration proposals to incorporate
17 recreational amenities and opportunities in these areas.

18 Regional plans and those geared toward the management of specific areas, including the *Stone Lakes*
19 *National Wildlife Refuge CCP, Cosumnes River Preserve Management Plan, Brannan Island and Franks*
20 *Tract State Recreation Areas General Plan, Yolo Bypass Wildlife Area Land Management Plan, the Yolo*
21 *County General Plan, Lower Sherman Island Wildlife Area Land Management Plan, San Francisco Bay*
22 *Plan, Suisun Marsh Protection Plan, and Solano County General Plan Suisun Marsh Policy Addendum*
23 are primarily designed to preserve and enhance the natural resource and recreation qualities of
24 these areas. Implementing the BDCP alternatives may create disruptions related to facility and
25 restoration improvements. Proposed restoration areas in the Yolo Bypass, on Sherman Island, and in
26 Suisun Marsh would be designed to be compatible with and complement the current management
27 direction for these areas and would be required to adapt restoration proposals to meet current
28 policy established for managing these areas.

29 The BDCP would be constructed and operate in compliance with regulations related to boat
30 navigation jurisdiction, rules, and regulations enforced by local, state (including the California
31 Department of Parks and Recreation's Division of Boating and Waterways), and federal (including
32 the U.S. Coast Guard) boating law enforcement. The alternative would be compatible with California
33 State Land Commission regulations related to recreational piers or marinas.

34 EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks
35 (East Bay Regional Park District 2012b). Recreation at these parks would not be affected by this
36 alternative.

37 Alternative 9 would result in the construction of permanent and temporary features associated with
38 the proposed water conveyance facility across land governed by the general plans of Sacramento,
39 San Joaquin, Contra Costa, and Alameda Counties. The county general plans all have policies related
40 to the protection of recreation resources and encourage the development of new water-based and
41 land-based recreation opportunities. Sacramento and San Joaquin Counties recognize the Delta as an
42 area of international importance and as a major recreational resource of these counties.
43 Construction activities that disrupt and degrade recreation opportunities in the study area would be
44 incompatible with policies designed to protect recreation resources, including those intended to

1 protect open space and natural areas and those that discourage development of public facilities and
 2 infrastructure unless it is related to agriculture, natural resources and open space, and has
 3 recreational value. Alternative 9 would not be incompatible with Yolo County and Solano County
 4 policies because conveyance facilities would not be located in these areas.

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 polices.

9 **Impact REC-13: Permanent Alteration of Recreational Boat Navigation as a Result of
 10 Operating the Water Conveyance Facilities**

11 **NEPA Effects:** With operation of Alternative 9, boat passage and navigation would be affected to
 12 varying degrees at each of the 14 waterway locations where an operable gate is planned. Table 15-
 13 lists the affected waterways associated with each type of conveyance facility. Boat passage would
 14 be unavailable at three waterway locations where a fish screen or an operable gate without a boat
 15 passage facility would be constructed and no boat passage would be provided. Boats would be able
 16 to pass the Threemile Slough operable gate when it is open; passage here would be restricted for
 17 several hours twice per day. Boat passage would be unimpeded at the two locations where siphons
 18 are planned to cross beneath the waterway.

19 **Table 15-17. Waterways Affected by Construction and Maintenance of Alternative 9 Conveyance
 20 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)

1 Boat navigation could be enhanced by dredging on the two waterways where dredging and
2 realignment of Old River are planned.

3 ***Operable Gates with Boat Passage Facilities***

4 At the 10 waterway locations where an operable gate with a boat passage facility is planned, boaters
5 would no longer have unimpeded passage through the waterway but would instead be required to
6 stop at the gate and wait to be directed through the boat passage facility. Wait times could be
7 greater than 30 minutes at locations where boat traffic volume is high particularly during peak-use.
8 For example, summer weekend and holiday boat traffic at the Old River gate site was in the range of
9 250–400 boats per day and at the Snodgrass Slough and Railroad Cut gate sites was in the range of
10 150–300 boats per day. Summer weekend afternoon boat traffic at these sites was as high as 50–80
11 boats per hour. If estimated increases in boat traffic between 2010 and 2020 occur and continue
12 beyond 2020 into the early long-term period, wait times at planned boat passage facilities could be
13 longer than 30 minutes. (Plater and Wade 2002)

14 The rate at which boats could be passed through the passage facility would depend in part on the
15 capacity of the passage facility chamber and other design factors. The skill of boat drivers at
16 negotiating the passage facilities and the diversity of boat types and sizes using the facilities would
17 also be factors in determining traffic flow and thus length of delays. Some of the high-traffic sites
18 also host a wide variety of boat types, with numerous large boats. Wait times would be expected to
19 be short at locations where boat traffic volume is low. At gate locations where boaters would be
20 delayed longer than 30 minutes, there would be an adverse effect on boating recreation.

21 A new connection for boaters would be created with the construction of a channel and boat passage
22 facility between the navigable portion of Meadow Slough and the Sacramento River. When the Delta
23 Cross Channel gate is closed, the expectation would be that most of the traffic that now uses the
24 Delta Cross Channel would be transferred to this location. This new connection may become the
25 preferred route between the Sacramento River and Meadow Slough, Snodgrass Slough, and the
26 Mokelumne River when the Delta Cross Channel is closed.

27 ***Operable Gates without Boat Passage Facilities***

28 At Threemile Slough, an operable gate would be installed without a boat passage facility but where
29 boats would be able to pass the gate when it was open. The gate would operate tidally which means
30 that the gate would be closed on the incoming or outgoing tides, depending on the operational
31 objective (fish migration control or salinity control) taking precedence at the time. In either mode of
32 operation, the gate would be closed for several hours twice per day, prohibiting boat passage.

33 No other practical route exists between this reach of the Sacramento River and the San Joaquin
34 River. If Threemile Slough were closed to boat passage, boaters wanting to travel between the
35 Sacramento River and the San Joaquin River would be required to make a detour of 20 miles to the
36 west around Sherman Island.

37 Many of the boats using Threemile Slough are launched from the Brannan Island State Recreation
38 Area boat launch, 1 mile east of the planned gate site. In addition, Outrigger Marina, on the opposite
39 bank of Threemile Slough from the State Recreation Area, draws a portion of its restaurant and fuel
40 dock patrons from the Sacramento River, and the Sacramento River is a destination for many of the
41 boats berthed at the marina. When the gate is closed, boaters would be unable to travel to or from
42 these locations and the Sacramento River.

1 Threemile Slough on the Sacramento River side of the gate does not provide space sufficient for a
2 large number of boats to wait for the gate to open, and the Sacramento River in this area has strong
3 winds and currents, making it an unsuitable place for most boats to moor. For these reasons, this
4 change in boat navigation would have an adverse effect on boating recreation.

5 ***Operable Gates without Boat Passage Facility and No Boat Passage***

6 The fish screen and modified gate without boat passage at the Delta Cross Channel would eliminate
7 boat access between the Delta Cross Channel and the Sacramento River because modifications
8 would lack provisions for boat passage. In combination with the closure of the gate at the new
9 connecting channel between the Sacramento River and Meadow Slough, 0.75 mile upstream, this
10 gate would eliminate the ability for most boaters to travel between this reach of the Sacramento
11 River and Snodgrass Slough, Meadow Slough, or the Mokelumne River.

12 The fish screen would occupy a portion of the Sacramento River channel along the east bank of the
13 river, restricting the width of the channel available for boat passage and potentially increasing
14 congestion in this area. For these reasons, this change in boat navigation would have an adverse
15 effect on boating recreation.

16 Because the Delta Cross Channel would no longer provide boat passage with implementation of this
17 alternative, the new Meadow Slough channel would become the preferred route between the
18 Sacramento River and Meadow Slough, Snodgrass Slough, and the Mokelumne River. The
19 expectation would be that most of the traffic that now uses the Delta Cross Channel would be
20 transferred to the new Meadow Slough channel.

21 ***San Joaquin River at Old River***

22 The operable gate planned for the San Joaquin River north of the head of Old River would prevent
23 boaters who launch at downstream locations on the San Joaquin River from traveling on the San
24 Joaquin River beyond Old River or into Old River because no boat passage would be provided. Dos
25 Reis Park launch ramp is 2.5 miles downstream, and the Haven Acres Resort boat ramp and guest
26 dock are 4 miles downstream. The nearest marinas and boat ramps in the Stockton area are more
27 than 13 miles downstream.

28 The gate would prevent boaters navigating from upstream areas of the San Joaquin River or from
29 Old River from moving downstream beyond the gate. The Mossdale Crossing Park boat ramp and the
30 Mossdale Marina guest dock are located about 2.5 miles upstream on the San Joaquin River.

31 Boat traffic volume at this location appears to average about 100 boats per day during weekends
32 and holidays based on surveys conducted by DWR in the 1990s (California Department of Water
33 Resources and Bureau of Reclamation 2005). However, given the relatively few ramps, marinas, or
34 other boating facilities or uses in the vicinity and the availability of many unimpeded miles of the
35 San Joaquin River and Old River available to boaters on either side of this gate, this change in boat
36 navigation would not have an adverse effect on boating recreation.

37 ***Middle River Upstream of Victoria Canal***

38 The operable gate planned for Middle River just upstream of Victoria Canal would primarily prevent
39 boaters navigating from downstream on Middle River and waterways connecting Middle and Old
40 Rivers from traveling farther upstream because no boat passage would be provided. The only
41 boating facility in the vicinity is the Union Point Resort, about 0.5 mile downstream, which has a

1 restaurant and bar with guest dock but no boat berthing. Boat traffic volume at this location is light,
2 with fewer than 20 boats per day observed during surveys conducted by DWR in the 1990s
3 (California Department of Water Resources and Bureau of Reclamation 2005).

4 A few miles upstream of the gate site, the waterway becomes increasingly narrow and shallow,
5 which limits use to small fishing boats and nonmotorized boats (e.g., canoes and kayaks). Boaters
6 may access this reach of Middle River from upstream by launching at a county park ramp on the San
7 Joaquin River. In addition, since 1987, DWR has installed a temporary rock barrier at this location
8 from May through September of each year. No boat passage is provided at the rock barrier.
9 Therefore, boat passage is blocked each year throughout the primary summer boating season, as
10 well as during part of the spring and fall seasons. Because of the low level of boating activity on this
11 reach of Middle River, the availability of public launch sites upstream, and the seasonal nature of the
12 effect, placement of the operable gate planned for Middle River just upstream of Victoria Canal effect
13 on recreation would be minor.

14 ***Dredging and Channel Reconfiguration***

15 Dredging is planned for Middle River between Empire Cut and Victoria Canal, a distance of about 7
16 miles. Studies to date of Railroad Cut at Middle River and on Victoria Canal/North Canal
17 (immediately south of the dredging area, and the probable source or destination for much of the
18 Middle River boat traffic in this area) indicate that weekend and holiday boat traffic volume on this
19 reach of Middle River is high. Although the dredging is not intended to widen the channel, the
20 deepening of the channel would eliminate shallow areas and reduce areas where aquatic vegetation
21 could become established. This would have a beneficial effect on boat navigation.

22 Dredging is also planned for the length of Victoria Canal/North Canal, terminating at the operable
23 gate at the west end of the canals. The dredging would eliminate the narrow, vegetated berm that
24 separates the two canals for much of their lengths. Boaters may consider the berm separating the
25 two canals to be desirable because it provides a separation for the boat traffic on the two canals and
26 facilitates the normal traffic pattern whereby eastbound traffic uses North Canal and westbound
27 traffic uses Victoria Canal. The berm also serves to reduce boat wakes from traffic on the adjacent
28 canal, which improves waterskiing conditions. However, the widening and deepening of the
29 waterway could have a beneficial effect on boat navigation by creating a less restrictive channel and
30 discouraging aquatic vegetation growth. Overall, loss of the central berm from the dredging would
31 have an adverse effect on boating recreation.

32 Reconfiguration of the Old River channel at the mouth of the Delta-Mendota Canal inlet is planned to
33 close off the inlet from Old River (the inlet would receive water from Clifton Court Forebay via a new
34 canal). The inlet would be blocked by fill between the Tracy Fish Facility and Fabian Tract and
35 between Fabian Tract and the tract south of Clifton Court Forebay. A new Old River channel would
36 be cut across the tip of Fabian Tract. This new channel would allow boaters to continue to pass
37 between the Rivers End Marina & Storage and numerous cabins and docks near the marina and Old
38 River to the north of Fabian Tract. Two small islands with cabins and boat docks located in the area
39 to be filled would be eliminated by the channel reconfiguration, and a wider channel between the
40 Rivers End Marina & Storage inlet and Old River would be created. The effect on boat recreation
41 would be beneficial.

1 ***Changes in Flow Velocity during Gate Operations***

2 Effects from the operation of operable gates would result in a substantial change and reduction of
 3 use of established recreational activities. At the 10 waterway locations where an operable gate with
 4 a boat passage facility is planned, boaters would no longer have unimpeded passage through the
 5 waterway. At locations where an operable barrier is proposed without boat passage, boaters would
 6 lose access to waterways typically traveled. Mitigation Measures REC-14a and REC-14b would be
 7 available to reduce these effects.

8 As discussed under Impact REC-3, BDCP proponents would contribute funds for the construction of
 9 new recreation opportunities as well as for the protection of existing recreation opportunities as
 10 outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in
 11 funding the expansion of state recreation areas in the Delta as described in Recommendation DP
 12 R13 of the Delta Plan. For the reopening of Brannan Island State Recreation Area, completion of
 13 Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough,
 14 Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or
 15 concurrent with, commencement of construction of the BDCP. This commitment serves to
 16 compensate for the loss of recreational opportunities within the project area by providing a
 17 recreational opportunity downstream/upstream in the same area for the same regional recreational
 18 users.

19 BDCP would also contribute funds to further the DBW's aquatic weed control programs in the Delta.
 20 Enhanced ability to control these invasive vegetation would lead to increased recreation
 21 opportunities which would compensate for the loss of recreational opportunities within the project
 22 area by providing a recreational opportunity downstream/upstream in the same area for the same
 23 regional recreational users. The funds will be transferred prior to, or concurrent with,
 24 commencement of construction of the BDCP. This commitment is described in Appendix 3B,
 25 *Environmental Commitments, AMMs, and CMs*.

26 Because of the permanent loss of boat passage and navigation and the delays associated with
 27 operable gates, these effects are considered adverse.

28 ***CEQA Conclusion:*** Impacts from the operation of operable gates would result in a substantial change
 29 and reduction of use of established recreational areas and activities. At the 10 waterway locations
 30 where an operable gate with a boat passage facility is planned, boaters would no longer have
 31 unimpeded passage through the waterway. At locations where an operable barrier is proposed
 32 without boat passage, boaters would lose access to waterways typically traveled. These effects
 33 would be reduced with the implementation of Mitigation Measure REC-13a and Mitigation Measure
 34 REC-13b as well as other commitments made by the BDCP proponents, but not to a less-than-
 35 significant level. Therefore, these effects would be considered significant and unavoidable.

36 **Mitigation Measure REC-13a: Minimize Congestion at Passage Facilities**

37 To reduce the impacts on boater's recreation experiences and to facilitate boat passage at the
 38 gate locations, the following will be implemented at the time of gate construction.

- 39 • Boat passage facilities will be designed to accommodate the average peak number of boaters
 40 and the range of boat types that use the affected waterway and minimize wait times.
- 41 • To provide for a safe and convenient place to wait for the gate to open, floating docks, each
 42 200 feet long and 12 feet wide, will be provided along the shoreline on each side of the boat

1 passage facility to provide boaters a location to wait and use the facility. Mooring bits will be
 2 provided on the docks. Boaters may also choose to wait in the channel on either side of the
 3 gate.

4 **Mitigation Measure REC-13b: Implement Boater Information and Education Program on**
 5 **Operation of Barriers and Boat Passage Facilities**

6 Before and during project operation, a boater information program will be implemented to
 7 provide information and details on the locations and operation of barriers throughout the study
 8 area. The program will include education on the three types of barriers (with boat locks, without
 9 boat locks, and the Threemile Slough barrier which would be passable when it is not operating).
 10 Boaters will be informed of typical timing of gate operations (as in the case of Threemile Slough
 11 operable barrier), potential alternative navigation routes during closures, and on procedures for
 12 waiting and using the boat passage facilities. This program will use a variety of printed media
 13 (e.g., posters, brochures) to provide the necessary information, and the media will be displayed
 14 and distributed at publicly accessible boat access facilities, including public and commercial boat
 15 ramps and marinas in the study area. The information will also be provided for dissemination on
 16 the websites of public recreation and boater safety organizations and agencies (e.g., DPR, CDBW,
 17 CDFW, U.S. Coast Guard, marine patrol agencies). Additional means of dissemination, such as
 18 distribution of materials or presentations at public meetings and events hosted or participated
 19 in by these organizations and agencies, will be used when the opportunity arises.

20 **Impact REC-14: Substantial Reduction in Other Recreation Opportunities as a Result of the**
 21 **Operation of the Water Conveyance Facilities**

22 **NEPA Effects:** Permanent speed zone restrictions in the vicinity of operable gate and boat passage
 23 facilities would include speed limits that could adversely affect high-speed recreation opportunities,
 24 such as waterskiing, wakeboarding, and tubing, to the point they would be effectively eliminated.
 25 Table 15-18 presents the waterways where recreation would be affected. Railroad Cut, Woodward
 26 Cut, and Victoria Canal are popular wakeboarding and waterskiing destinations.

27 **Table 15-18. Waterways where Recreation would be Affected by Operation and Maintenance of**
 28 **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

Source: California Department of Parks and Recreation's Division of Boating and Waterways 2003.

At Brannan Island State Recreation Area, the gate on Threemile Slough and associated structures and access roadway would require construction on State Recreation Area lands located along the Threemile Slough waterway. The location of the operable gate at Threemile Slough is in a primarily undeveloped portion of the State Recreation Area where recreational use is low. In addition, only a small percentage of the approximately 1-mile-long State Recreation Area shoreline on Threemile Slough would be affected. The portion of shoreline affected is the most distant from developed campsites, where most informal use in the undeveloped area is likely to originate.

Other than levee improvements, there would be no permanent changes to the lands on the Sherman Island side of the planned gate structure. No recreational activity is known to occur in that area. Road access via East Sherman Island Levee Road to Outrigger Marina would be restored via the existing levee road following completion of levee work. For these reasons, the potential effect of Alternative 9 on recreation opportunities at Brannan Island State Recreation Area or the Sherman Island side of Threemile Slough would be minimal.

A new connection for boaters would be created with the construction of a channel and boat passage facility between the navigable portion of the Meadow Slough and the Sacramento River. This connection would provide for new boating opportunities within Delta Meadows; however, the introduction of a potential increase in motor boating activities within Delta Meadows may degrade the recreation opportunities and experience for mooring.

Operation of the operable gates would result in permanent changes to recreation opportunities including recreational boating activities such as waterskiing and wakeboarding. Mitigation Measures REC-13a and REC-13b would be available to reduce these effects.

As discussed under Impact REC-3, BDCP proponents would contribute funds for the construction of new recreation opportunities as well as for the protection of existing recreation opportunities as outlined in Recommendation DP R11 of the Delta Plan. BDCP proponents would also assist in funding the expansion of state recreation areas in the Delta as described in Recommendation DP R13 of the Delta Plan. For the reopening of Brannan Island State Recreation Area, completion of Delta Meadows-Locke Boarding House and potential addition of new State parks at Barker Slough, Elkhorn Basin, the Wright-Elmwood Tract, and south Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment serves to compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. These commitments are further described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

BDCP would also contribute funds to further the DBW's aquatic weed control programs in the Delta. Enhanced ability to control these invasive vegetation would lead to increased recreation opportunities which would compensate for the loss of recreational opportunities within the project area by providing a recreational opportunity downstream/upstream in the same area for the same regional recreational users. The funds will be transferred prior to, or concurrent with, commencement of construction of the BDCP. This commitment is described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

Due to the permanent speed zone restrictions in the vicinity of operable gate, and speed limits at boat passage facilities that could adversely affect high-speed recreation opportunities, such as waterskiing, wakeboarding, and tubing, at a number of existing recreational areas, these would be considered adverse effects.

1 **CEQA Conclusion:** Operation of the operable gates would result in permanent changes to recreation
2 opportunities including recreational boating activities such as waterskiing and wakeboarding. These
3 effects are significant. Mitigation Measures REC-13a and REC-13b as well as other commitments
4 made by the BDCP proponents would reduce these effects, but not to a less-than-significant level.
5 Therefore, these effects are considered significant and unavoidable.

6 **15.3.4 Effects and Mitigation Approaches—Alternatives 4A, 7 2D, and 5A**

8 **15.3.4.1 No Action Alternative Early Long-Term**

9 The effects of the No Action Alternative (ELT) considered for the purposes of Alternatives 4A, 2D,
10 and 5A would be expected to be similar to the effects described for the No Action Alternative (LLT)
11 in Section 15.3.3.1. Recreation opportunities occurring under the No Action Alternative (ELT) would
12 continue largely as described for Existing Conditions and would include continued implementation
13 of SWP and CVP operations, maintenance, enforcement, and protection programs by federal, state,
14 and local agencies and non-profit groups, as well as projects that are permitted or assumed to be
15 constructed by in the early long-term period. This includes restoration actions occurring within the
16 Yolo Bypass being driven by the 2008 and 2009 USFWS and NMFS Biological Opinions and the
17 restoration of 8,000 acres of intertidal habitat in the Delta and Suisun Marsh.

18 Land and water-based recreation opportunities and activities occurring within the Delta and at
19 upstream reservoirs under the No Action Alternative (ELT) would be similar to those described
20 under the No Action Alternative during the late long-term timeframe. Because the No Action
21 Alternative (ELT) implementation period would be shorter, the magnitude of land-disturbing
22 activities occurring within the Delta that could disrupt access to land-based recreation sites and
23 disrupt access to Delta channels used for recreation would be expected to be less than the No Action
24 Alternative (LLT). Similarly, changes in water-based recreation opportunities associated with
25 changes in upstream reservoir storage, streamflow, and the abundance of sport fish would also be
26 similar to the No Action Alternative (LLT), but the magnitude of these changes would also be less
27 because of the shorter time period of the No Action Alternative (ELT).

28 Similar to the No Action Alternative (LLT), CALSIM II output was used to help evaluate the potential
29 changes in north-of-Delta and south-of-Delta reservoirs where recreation opportunities could be
30 affected by the alternatives, including the No Action Alternative (ELT). As shown in Tables 15-19
31 and 15-20, the No Action Alternative (ELT) conditions would have more years in which reservoir
32 levels fall below the recreation threshold relative to the existing condition with the exception of New
33 Melones Reservoir. Under the No Action Alternative (ELT) conditions, the reservoirs would fall
34 below the thresholds from 5 to 11 additional years than under Existing Conditions whereas New
35 Melones Reservoir would be above the threshold for one additional year. The changes in the SWP
36 and CVP reservoir elevations are attributable to change in demand and other external factors such
37 as climate change. It is not possible to specifically define the exact extent of the changes attributable
38 to future no action operations using these model simulation results. Thus, the precise contributions
39 of sea level rise and climate change to the total differences between Existing Conditions and No
40 Action Alternative (ELT) cannot be isolated in this comparison.

1 **Table 15-19. Summary of SWP and CVP Reservoir Recreation Opportunities (years below end-of-**
 2 **September recreation threshold) for Existing Conditions and No Action Alternative (ELT)**

Scenario	Recreation Threshold ^a					
	Trinity Lake <2,270 ft Elevation		Shasta Lake <967 ft Elevation		Lake Oroville <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 Conditions (CEQA)	21		17		17	
No Action (ELT)	32	11	22	5	26	9

^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 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., Existing Conditions). 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 **Table 15-20. Summary of SWP and CVP Reservoir Recreation Opportunities (years below end-of-**
 5 **September recreation threshold) for Existing Conditions and the No Action Alternative (ELT)**

Scenario	Recreation Threshold ^a					
	Folsom Lake <405 ft Elevation		New Melones Lake <900 ft Elevation		San Luis Reservoir <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 Conditions (CEQA)	22		9		3	
No Action (ELT)	33	11	8	-1	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 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., Existing Conditions). 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.

6

7 As described for the No Action Alternative (LLT) in Chapter 3, *Description of Alternatives*, many of
 8 the ongoing programs under No Action Alternative (ELT) would also include development of future
 9 projects that would require additional project-level environmental review. Future federal actions
 10 would be required to comply with NEPA, the federal Endangered Species Act (ESA), and other
 11 federal laws and regulations. Future state and local actions would be required to comply with CEQA,
 12 the California Endangered Species Act (CESA), and other state and local laws and regulations.
 13 Compliance and permit requirements would be implemented on a case-by-case basis.

1 The potential for catastrophic seismic events and potential effects on recreation opportunities in the
 2 Delta under the No Action Alternative (ELT) would be the same as described under the No Action
 3 Alternative (LLT). The change in water quality resulting from a seismic event in which Delta levees
 4 fail could result in permanent displacement of existing, well-established public use or private
 5 commercial recreation facilities as well as result in long-term reduction of recreation opportunities,
 6 recreational navigation opportunities and recreational fishing opportunities. To reclaim land or
 7 rebuild levees after a catastrophic event due to climate change or a seismic event would potentially
 8 also result in adverse impacts to recreational resources.

9 ***CEQA Conclusion:*** Overall, the ongoing projects, programs, and plans under the No Action
 10 Alternative (ELT) would result in the potential for temporary and permanent effects that are not
 11 expected to substantially change recreation opportunities or experiences in the Delta region.
 12 Adverse effects on recreation would occur as a result of short-term disruptions that would result in
 13 less-than-significant impacts. Beneficial impacts on recreation could occur as programs are
 14 implemented. Overall, the impact of the No Action Alternative (ELT) on recreation resource is
 15 considered less than significant.

16 **15.3.4.2 Alternative 4A—Dual Conveyance with Modified 17 Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational 18 Scenario H)**

19 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private 20 Commercial Recreation Facility Available for Public Access as a Result of the Location of 21 Proposed Water Conveyance Facilities**

22 ***NEPA Effects:*** The extent of the permanent displacement of public use or private commercial
 23 recreation areas located within the Delta occurring under Alternative 4A would be the same as
 24 described for Alternative 4, as described in Section 15.3.3.9. The recreation areas that could be
 25 adversely affected are the Cosumnes River Preserve and Clifton Court Forebay. Recreation could be
 26 disrupted at the Cosumnes River Preserve by placing an RTM area to the north of the preserve,
 27 constructing an east-west permanent transmission line adjacent to the northern boundary of the
 28 preserve, and locating permanent tunnel shafts on the preserve. Modifications made to Clifton Court
 29 Forebay would disrupt recreation activities occurring on and near the forebay's south embankment.
 30 Other potential impacts along the alignment of the water conveyance facility include disruption of
 31 use of portions of Staten Island and use of DWR ponds currently used for water ski instruction and
 32 hound racing. As described in detail under Alternative 4, construction of the water conveyance
 33 facilities under Alternative 4A would not result in an adverse effect on public use or private
 34 commercial recreation facilities because none of these facilities would be permanently displaced.

35 ***CEQA Conclusion:*** The extent of permanent displacement of public use or private commercial
 36 recreation areas under Alternative 4A would be the same as discussed for Alternative 4 because the
 37 type and alignment of the water conveyance facilities are identical for the two alternatives. This
 38 includes placing permanent facilities on or disrupting access to the Cosumnes River Preserve,
 39 including public access to portions of Staten Island. Similarly, recreation use of the Clifton Court
 40 Forebay embankments would be disrupted during construction. Specifically, public access to the
 41 forebay's south embankment, which supports fishing and hunting, would be disrupted during
 42 construction. Alternative 4A would not result in the permanent displacement of well-established

1 public use or private commercial recreation facilities available for public access. This impact on
2 these facilities would be less than significant and no mitigation for permanent loss is required.

3 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
4 **as a Result of Constructing the Proposed Water Conveyance Facilities**

5 **NEPA Effects:** The extent of the long-term reduction of recreation experiences within the Delta as a
6 result of construction the water conveyance facilities under Alternative 4A would be the same as
7 described for Alternative 4. Two recreation sites, Clifton Court Forebay and Cosumnes River
8 Preserve, are within the construction footprint and six recreation sites or areas (Stone Lakes NWR,
9 Clarksburg Boat Launch, Wimpy's Marina, Delta Meadows, Bullfrog Landing Marina, and Lazy M
10 Marina) are within the 1,200- to 1,400-foot indirect impact area. Potential indirect effects on
11 recreation include loss of access, construction noise, and changes in the visual character of the area
12 surrounding the recreation sites.

13 As discussed in detail under Alternative 4, impacts on recreation occurring within the Stone Lakes
14 NWR would be attributable to noise and changes in visual character as a result of temporary work
15 areas, RTM storage, geotechnical exploration, construction of Intakes 2 and 3, and construction of
16 the temporary transmission lines. Recreation activities that could be adversely affected include
17 wildlife viewing and environmental education.

18 The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the
19 site of Intake 3. Although access to the boat launch would be maintained during the construction
20 period, noise generated during construction and geotechnical testing could adversely affect use of
21 the public access areas near the boat launch for fishing or other activities.

22 As discussed under Alternative 4, impacts on recreation opportunities occurring within the
23 Cosumnes River Preserve would include disruption of wildlife viewing and docent-guided tours.
24 Although no recreation opportunities would be permanently displaced, recreation opportunities
25 occurring within portions of the preserve could be adversely affected during construction as result
26 of the introduction of noise, light, and temporary facilities such as access roads, safe haven work
27 sites, and tunnel shaft with temporary work areas.

28 Wimpy's Marina is a private boating facility located on the south fork of the Mokelumne River
29 southeast of Walnut Grove. Geotechnical exploration would occur along the tunnel corridor for
30 approximately 2.5 years and would introduce noise that would adversely affect recreation occurring
31 at the marina.

32 As discussed in detail under Alternative 4, recreation at Delta Meadows could be affected by
33 geotechnical testing and construction and operation of the intermediate forebay and spillway. These
34 activities would generate noise and introduce visual disturbances to the recreation site.

35 Recreation at the Bullfrog Landing Marina on Middle River could be affected by noise and visual
36 disturbance as a result of constructing the water conveyance across Bacon Island. This would
37 include impacts from constructing a temporary access road on the island as well as a temporary safe
38 haven work area. Anglers on the river between the marina and the construction area would also
39 experience noise and visual disturbances during construction.

1 On-water recreation opportunities not associated with formal recreation sites could be affected by
2 the introduction of noise and light during the construction period. The quality of recreation
3 opportunities in the vicinity of construction sites may be adversely affected by noise and changes in
4 visual character.

5 As discussed in detail under Alternative 4, recreation opportunities, including fishing and hunting,
6 could be adversely affected by expanding Clifton Court Forebay. Access to the forebay would be
7 maintained. The opportunities for visitors who use the southern part of the forebay would be
8 affected the most because of its proximity to the proposed construction areas. While the forebay is
9 expanded and the new embankment is built, recreational visitors would lose access to the existing
10 bank recreational activities. Construction would also cause noise and visual disturbances which
11 would deter fish and wildlife and result in reduced opportunities for fishing or hunting, as well
12 as adversely affect the ambient recreation setting and recreation experience

13 Construction of Alternative 4A intakes and water conveyance facilities would result in disruption to
14 recreational opportunities. Indirect effects on recreation experiences may occur as a result of
15 impaired access, construction noise, or negative visual effects. Overall, construction and
16 geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual
17 construction sites near recreation sites or areas and in-river construction would be primarily
18 limited to June 1 through October 31 each year, which would result in a long-term reduction of
19 recreational opportunities or experiences. Mitigation measures (REC-2, BIO-75, AES-1a, AES-1b,
20 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-4a, AES-4b, AES-4c, AES-4d, TRANS-1a, TRANS-1b,
21 TRANS-1c, NOI-1a, and NOI-1b) are available to address adverse effects on recreation resulting from
22 introduction of noise and light and the loss of access. However, due to the length of time that
23 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
24 related to temporary disruption of existing recreational activities at facilities within the impact area
25 would be adverse.

26 **CEQA Conclusion:** Construction of the Alternative 4A intakes and related water conveyance facilities
27 would result in permanent and long-term (i.e., lasting over 2 years) impacts on well-established
28 recreational opportunities and experiences in the study area because of access, noise, and visual
29 setting disruptions that could result in loss of public use. These impacts would occur year-round.
30 The mitigation measures described below, in combination with environmental commitments, would
31 reduce some construction-related impacts by compensating for effects on wildlife habitat and
32 species; minimizing the extent of changes to the visual setting, including nighttime light sources;
33 manage construction-related traffic; and implementing noise reduction and complaint tracking
34 measures. However, the level of impact would not be reduced to a less-than-significant level because
35 it is not certain the mitigation would reduce the level of these impacts to less than significant in all
36 the instances occurring within the entire study area. Therefore, these impacts are considered
37 significant and unavoidable.

38 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

39 Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

40 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid** 41 **Disturbance of Nesting Birds**

42 Please see Mitigation Measure BIO-75 under Impact BIO-75 in the discussion of Alternative 4 in
43 Chapter 12, *Terrestrial Biological Resources*.

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 see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in
5 Chapter 17, *Aesthetics and Visual Resources* of the Draft EIR/EIS.

6 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
7 **Sensitive Receptors**

8 Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in
9 Chapter 17, *Aesthetics and Visual Resources*.

10 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
11 **Material Area Management Plan**

12 Please see to Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in
13 Chapter 17, *Aesthetics and Visual Resources*.

14 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

15 Please see to Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in
16 Chapter 17, *Aesthetics and Visual Resources*.

17 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
18 **Extent Feasible**

19 Please see Mitigation Measure AES-1e under Impact AES-1 in the discussion of Alternative 4 in
20 Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-1f under Impact AES-1 in the discussion of Alternative 4 in
24 Chapter 17, *Aesthetics and Visual Resources*.

25 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
26 **Landscaping Plan**

27 Please see Mitigation Measure AES-1g under Impact AES-1 in the discussion of Alternative 4 in
28 Chapter 17, *Aesthetics and Visual Resources*.

29 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.5 Mile of**
30 **Residents**

31 Please see Mitigation Measure AES-4a under Impact AES-4 in the discussion of Alternative 4 in
32 Chapter 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
2 **Construction**

3 Please see Mitigation Measure AES-4b under Impact AES-4 in the discussion of Alternative 4 in
4 Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-4c under Impact AES-4 in the discussion of Alternative 4 in
8 Chapter 17, *Aesthetics and Visual Resources*.

9 **Mitigation Measure AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

10 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
11 Alternative 1A, Impact AES-4.

12 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
13 **Plan**

14 Please see Mitigation Measure TRANS-1a under TRANS-1 in the discussion of Alternative 4 in
15 Chapter 19, *Transportation*.

16 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
17 **Congested Roadway Segments**

18 Please see Mitigation Measure TRANS-1b under Impact TRANS-1 in the discussion of Alternative
19 4 in Chapter 19, *Transportation*.

20 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
21 **Agreements to Enhance Capacity of Congested Roadway Segments**

22 Please see Mitigation Measure TRANS-1c under Impact TRANS-1 in the discussion of Alternative
23 4 in Chapter 19, *Transportation*.

24 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
25 **Construction**

26 Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in
27 Chapter 23, *Noise*.

28 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
29 **Tracking Program**

30 Please see Mitigation Measure NOI-1b under Impact NOI-1 in the discussion of Alternative 4 in
31 Chapter 23, *Noise*.

32 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
33 **Result of Constructing the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** The extent of the long-term reduction in recreational navigation opportunities as a
35 result of constructing the proposed water conveyance facilities under Alternative 4A would be

1 identical to Alternative 4. Construction activities associated with constructing the three intakes on
2 the Sacramento River, siphons near Clifton Court Forebay, Head of Old River barrier and operating
3 barges and constructing temporary barge unloading facilities at Snodgrass Slough, Potato Slough,
4 San Joaquin River, Middle River, Connection Slough, Old River, and the West Canal would disrupt
5 boat passage and navigation at and near these sites. Although implementing Mitigation Measure
6 TRANS-1a and helping to fund measures to reduce aquatic weeds would reduce impacts on
7 recreational navigation, these effects would remain adverse because of the long duration of
8 construction which would continually reduce recreation opportunities and distract from
9 experiences occurring near construction activity.

10 **CEQA Conclusion:** Impacts on recreational navigation during construction of the water conveyance
11 facilities under Alternative 4A would be identical to those described under Alternative 4. Impeding
12 boat passage and navigation and resulting impacts on recreation would occur during construction of
13 the intakes, temporary barge unloading facilities, and siphons. Although Mitigation Measure TRANS-
14 1a would reduce impacts on navigation associated with barge unloading facilities and participating
15 in the aquatic weed reduction program would help address impacts on navigation, the impact of
16 constructing the water conveyance facilities would be considered significant and unavoidable.

17 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management
18 Plan**

19 Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative
20 4 in Chapter 19, *Transportation*.

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:** The extent of changes in sport fishing opportunities occurring within the study area
24 under Alternative 4A would be the same as Alternative 4. Constructing water intakes, siphons, and
25 operable barrier and placement and use of barge unloading facilities during tunnel/pipeline
26 construction would result in temporary water quality effects (e.g., turbidity, accidental spills,
27 disturbance of contaminated sediments); elevated underwater noise (associated with pile driving
28 and other construction activities); fish exposure to stranding and direct physical injury; and
29 temporary exclusion or degradation of spawning and rearing habitats. Expanding Clifton Court
30 Forebay would restrict access to bank fishing sites during the construction period. Although fish
31 populations likely would not be affected to the degree that the abundance of sport fish would be
32 substantially reduced, construction conditions would introduce noise and visual disturbances that
33 would affect the recreation experience for anglers.

34 Due to the large size of the Plan Area and the 13-year duration that construction is expected to last
35 for Alternative 4A, this impact would be significant. However, mitigation measures are available to
36 reduce impacts by enhancing and ensuring access to nearby fishing sites and to address noise and
37 visual disturbances. Mitigation Measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d,
38 AES-1e, AES-1f, and AES-1g would help reduce or avoid impacts on recreational fishing near
39 construction sites. With implementation of these mitigation measures, this impact would not be
40 adverse.

41 **CEQA Conclusion:** The impact on recreational fishing opportunities as a result of constructing the
42 water conveyance facilities under Alternative 4A would be the same as Alternative 4. The combined
43 impact on recreational fishing opportunities would be considered significant. Implementing

mitigation measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d, AES-1e, AES-1f, and AES-1g would reduce the impact on recreational fishing to a less-than-significant level by providing alternate fishing sites, reducing noise generated during construction activities, and limiting changes in the visual character of recreational fishing sites.

Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites

Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during Construction

Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in Chapter 23, *Noise*.

Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response Tracking Program

Please see Mitigation Measure NOI-1b under Alternative 1A in the discussion of Alternative 4 in Chapter 23, *Noise*.

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 see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in Chapter 17, *Aesthetics and Visual Resources*.

Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and Sensitive Receptors

Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in Chapter 17, *Aesthetics and Visual Resources*.

Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel Material Area Management Plan

Please see Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in Chapter 17, *Aesthetics and Visual Resources*.

Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned

Please see Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in Chapter 17, *Aesthetics and Visual Resources*.

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Please see Mitigation Measure AES-1e under Impact AES-1 in the discussion of Alternative 4 in Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-1f under AES-1 in the discussion of Alternative 4 in Chapter
4 17, *Aesthetics and Visual Resources*.

5 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
6 **Landscaping Plan**

7 Please see Mitigation Measure AES-1g under AES-1 in the discussion of Alternative 4 in Chapter
8 17, *Aesthetics and Visual Resources*.

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:** The effects of operating the water conveyance facilities on recreational fishing
12 opportunities under Alternative 4A would be the same as described under Alternative 4, because the
13 same conveyance facilities would be built under Alternative 4A as under Alternative 4 and the
14 operational scenarios analyzed under Alternative 4 include the operational scenario for Alternative
15 4A. Operation of Alternative 4A may result in changes in entrainment, spawning, rearing, and
16 migration. However, effects on fish species that are popular for recreational fishing are not of a
17 nature/level that will adversely affect recreational fishing. While there are some significant impacts
18 on specific non-listed species, as discussed in Chapter 11, *Fish and Aquatic Resources*, they are
19 typically limited to specific rivers and not the population of that species as a whole. The effect is not
20 adverse because it would not result in a substantial long-term reduction in recreational fishing
21 opportunities.

22 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
23 operation of Alternative 4A would be considered less than significant because any impacts on fish
24 and, as a result, impacts on recreational fishing, are anticipated to be isolated to certain areas and
25 would not affect the abundance of popular sport fish.

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:** The methodology for assessing effects on recreation at major upstream storage
30 reservoirs for Alternative 4A is the same as applied to Alternative 4 with the exception that
31 Alternative 4A includes only Operational Scenario H3+ (slightly different than H3).

32 Modeling for Alternative 4A was conducted for Operational Scenario H3+, a point that generally falls
33 between Scenario H3 and H4 operations, as the initial conveyance facilities operational scenario. As
34 specified in Chapter 3, *Description of Alternatives*, Section 3.6.4 the Delta outflow criteria under
35 Scenario H for Alternative 4A would be determined by the Endangered Species Act and California
36 Endangered Species Act Section 2081 permits, and operations to obtain such outflow would likely
37 be between Scenarios H3 and H4. Modeling results for Scenarios H3 and H4 using the 2010 CALSIM
38 II model are shown in Appendix 5E, *Supplemental Modeling Requested by the State Water Resources*
39 *Control Board Related to Increased Delta Outflows*, Attachment 1. In addition, following the initial
40 operations, the adaptive management and monitoring program could be used to make long-term

1 changes in initial operations criteria to address uncertainties about spring outflow for longfin smelt
2 and fall outflow for delta smelt, among other species.

3 Future conveyance facilities operational changes may also be made as a result of adaptive
4 management to respond to advances in science and understanding of how operations affect species.
5 Conveyance facilities would be operated under an adaptive management range represented by
6 Boundary 1 and Boundary 2 (see Section 5E.2 of Appendix 5E for additional information on
7 Boundary 1 and Boundary 2). Impacts as a result of operations within this range would be
8 consistent with the impacts discussed for the alternatives considered in this EIR/EIS. As shown in
9 Appendix 5F, water supply modeling results for H3+ are within the range of results for Scenarios H3
10 and H4, and is consistent with the impacts discussed in the Recirculated Draft Environmental Impact
11 Report/Supplemental Draft Environmental Impact Statement. The following analysis of Alternative
12 4A impacts reflects modeling results of Operational Scenario H3+. The results of this assessment are
13 shown in Tables 15-21 and 15-22.

14 **Existing Conditions (CEQA Baseline) Compared to Alternative 4A ELT (2025)**

15 Under Alternative 4A (Operational Scenario H3+) recreation thresholds would be exceeded more
16 frequently at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs relative to Existing
17 Conditions. These changes represent a greater than 10% increase in the frequency the recreation
18 thresholds are exceeded at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs, compared to
19 Existing Conditions. However, as discussed in Section 15.3.1, *Methods for Analysis*, these changes in
20 SWP/CVP reservoir elevations are primarily attributable to change in demand and other external
21 factors such as sea level rise and climate change. It is not possible to specifically define the exact
22 extent of the changes due to implementation of the action alternative using these model simulation
23 results. Thus, the precise contributions of the external factors to the total differences between
24 Existing Conditions and Alternative 4A cannot be isolated in this comparison. Please refer to the
25 comparison of the No Action Alternative (ELT) to Alternative 4A for a discussion of the potential
26 effects on end-of-September reservoir and lake elevations attributable to operation of Alternative
27 4A.

28 **Existing Conditions (CEQA Baseline) Compared to Alternative 4A LLT (2060)**

29 Under Alternative 4A recreation thresholds would be exceeded more frequently at Trinity, Shasta,
30 Oroville, Folsom, New Melones, and San Luis Reservoirs relative to Existing Conditions. These
31 changes represent a greater than 10% increase in the frequency the recreation thresholds are
32 exceeded at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs. However, as discussed in
33 Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are primarily
34 attributable to change in demand and other external factors such as sea level rise and climate
35 change. It is not possible to specifically define the exact extent of the changes due to implementation
36 of the action alternative using these model simulation results. Thus, the precise contributions of the
37 external factors to the total differences between Existing Conditions and Alternative 4A cannot be
38 isolated in this comparison.

39 **No Action Alternative (ELT) Compared to Alternative 4A**

40 The comparison of Alternative 4A conditions to the No Action Alternative (ELT) condition most
41 closely represents changes in reservoir elevations that may occur as a result of operation of
42 Alternative 4A because external factors such as change in demand and sea level rise and climate

change were the same (see Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As shown in Tables 15-21 and 15-22, Alternative 4A would result in small changes in the frequency with which the end-of-September reservoir levels at Trinity, Shasta, Oroville, Folsom, New Melones, and San Luis Reservoirs would fall below levels identified as important water-dependent recreation thresholds. The CALSIM II modeling results indicate that reservoir levels under Alternative 4A operations would either not change or would fall below the individual reservoir recreation thresholds less frequently than under No Action Alternative (ELT) conditions at Trinity, Shasta, Oroville, and New Melones Reservoirs. Operation of Alternative 4A would not adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these conditions may represent improved recreation conditions under operation of Alternative 4A because there would be slightly 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 (ELT) conditions.

The modeling result for Folsom Reservoir indicates there could be 3 additional years (out of 82) under Alternative 4A during which the reservoir level would fall below the reservoir's boating threshold at the end of September. The incremental change would not exceed the 10% increase in the frequency threshold that would indicate an adverse impact on recreation occurring at the reservoir.

The modeling results for San Luis Reservoir indicate there could be 23 additional years (out of 82) under Alternative 4A, during which the reservoir level would fall below the reservoir boating threshold at the end of September relative to the No Action Alternative (ELT) condition. This is a greater than 10% change and would be considered a substantial reduction in recreational boating opportunities at San Luis Reservoir. Shoreline fishing would still be possible, and other recreation activities at the reservoir—picnicking, biking, and hiking—would be available. The reduction in surface elevations at San Luis Reservoir would result in an adverse impact on recreation occurring at the reservoir by restricting access by boaters. Mitigation Measure REC-6 would be available to address this effect.

CEQA Conclusion: This impact on water-dependent and water-enhanced recreation opportunities at north- and south-of-Delta reservoirs would be less than significant because, with the exception of San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to Alternative 4A operations would either slightly decrease (Folsom Reservoir) or would fall below the individual reservoir thresholds less frequently than under No Action Alternative (ELT). These changes in reservoir and lake elevations would result in a less-than-significant impact on recreation opportunities and experiences at Trinity, Shasta, Oroville, Folsom, and New Melones Reservoirs. At Trinity, Shasta, Oroville, and Folsom Reservoirs, because there would be fewer years in which the reservoir or lake levels fall below the recreation threshold relative to No Action Alternative (ELT) conditions, these effects would be considered beneficial to recreation opportunities and experiences. At Trinity, Shasta, Oroville, Folsom, New Melones, and San Luis Reservoirs, there would be more years in which the reservoir or lake levels fall below the recreation threshold at Late Long Term relative to Existing Conditions. However, as discussed in Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are primarily attributable to change in demand and other external factors such as sea level rise and climate change. 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. Operation of Alternative 4A would not substantially affect water-dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir, the reduction in reservoir access by boaters would be significant because it is a greater than 10% change and could

1 result in a significant impact on recreation. Mitigation Measure REC-6 would reduce this impact to a
 2 less-than-significant level.

3 **Mitigation Measure REC-6: Provide an Alternative Boat Launch to Ensure Access to San
 4 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 **Table 15-21. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-
 10 of September Elevations below Recreation Thresholds) for Alternative 4A**

Scenario	Recreation Threshold ^a									
	Trinity Lake <2,270 ft Elevation			Shasta Lake <967 ft Elevation			Lake Oroville <700 ft Elevation			
	Years ^b	Change Relative to Existing Condition	Change Relative to No Action ELT	Years ^b	Change Relative to Existing Condition	Change Relative to No Action ELT	Years ^b	Change Relative to Existing Condition	Change Relative to No Action ELT	
Existing Condition (CEQA)	21			17			17			
No Action Alternative (ELT)	32	11		22	5		26	9		
Alternative 4A (ELT)										
Operational Scenario H3+	29	8	-3	22	5	0	21	4	-5	
Alternative 4A (LLT)										
Operational Scenario H3+	41	20	-2	28	11	-1	29	12	-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 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 Alternative ELT). A positive change would indicate more years with reduced recreation opportunities.

1 **Table 15-22. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-**
 2 **of September Elevations below Recreation Thresholds) for Alternative 4A**

Scenario	Recreation Threshold ^a							
	Folsom Lake <405 ft Elevation			New Melones Lake <900 ft Elevation			San Luis Reservoir <360 ft Elevation	
	Change Relative to Existing Condition	Change Relative to No Action ELT (NEPA)	Years ^b (CEQA) ^c	Change Relative to Existing Condition	Change Relative to No Action ELT (NEPA)	Years ^b (CEQA) ^c	Change Relative to Existing Condition	Change Relative to No Action ELT (NEPA)
Existing Condition	22			9			3	
No Action (ELT)	33	11		8	-1		9	6
Alternative 4A (ELT)								
Operational Scenario H3+	36	14	3	8	-1	0	32	29
Alternative 4A (LLT)								
Operational Scenario H3+	44	22	-6	13	4	0	37	34
								28

^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 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 ELT). 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.

Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a Result of Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The effects of maintaining the water conveyance facilities on water-based recreation under Alternative 4A would be the same as described under Alternative 4. These potential effects would occur as a result of regular maintenance activities of the intakes. The effect on boating is not considered adverse because the boat passage around the intakes would be maintained and disruption of boat access in the immediate vicinity of the intakes would be short-term.

CEQA Conclusion: Effects on recreation resulting from the maintenance of intake facilities would be short-term and intermittent and would not result in significant impacts on boat passage, navigation, or water-based recreation within the vicinity of the intakes.

Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a Result of Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The effects of maintaining the water conveyance facilities on land-based recreation under Alternative 4A would be the same as described under Alternative 4. Maintenance activities

would be short-term and intermittent, occur within the immediate vicinity of water conveyance facilities, and are not expected to generate noise that would distract from adjacent recreation opportunities. Therefore, there would be no effects on recreation opportunities as a result of maintenance of the proposed water conveyance facilities.

CEQA Conclusion: Maintenance of conveyance facilities would be short-term and intermittent and would not result in any changes to land-based recreational opportunities. Therefore, there would be no impact and no mitigation would be required.

Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of Implementing Environmental Commitments 3, 4, 6-12, 15, and 16

NEPA Effects: Implementing conservation and stressor reduction components as part of Alternative 4A would result in effects on fishing opportunities similar to those described for Alternative 4. The magnitude of the effects occurring under Alternative 4A would be much less than under Alternative 4 because the total acreage that would be affected by the conservation and stressor reduction actions (Environmental Commitments 3, 4, 6-12, 15, and 16) occurring in the Plan Area would be much less than the conservation measures proposed under Alternative 4. Construction, operation, and maintenance of the conservation and stressor reduction components could have affects that would be similar in nature to those discussed above for construction, operation, and maintenance of proposed water conveyance facilities. Although similar in nature, the potential intensity of any effects would likely be substantially lower because the nature of the activities associated with implementing the conservation and stressor reduction components would be much less when compared to Alternative 4. In addition, the conservation and stressor reduction components would be expected to result in long-term benefits to aquatic species.

During the implementation stage, construction activity associated with the conservation and stressor reduction components could result in adverse effects on recreation by temporarily or permanently limiting access to fishing sites and disturbing fish habitat. The impact on fishing opportunities as the conservation and stressor reduction components are constructed would not be considered adverse because the actions would be small and localized. In the long term, the impact on fishing opportunities would be considered beneficial because the conservation and stressor reduction measures could benefit aquatic habitat and fish abundance. Therefore, overall, there would not be an adverse impact to fishing opportunities in the long-term.

CEQA Conclusion: Conservation and stressor reduction components would be expected to improve fishing opportunities within the Plan Area. The adverse and beneficial impacts would be similar to those described under Alternative 4, however the extent of those impacts would be much less because the restoration actions occurring under Alternative 4A would include much less acreage and a smaller geographic scope than the conservation measures described under Alternative 4. The impact on fishing opportunities as the conservation and stressor reduction components are constructed would be considered less than significant because the actions would be small and localized. In the long term, the impact on fishing opportunities would be considered beneficial because the conservation and stressor reduction measures could benefit aquatic habitat and fish abundance.

1 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
 2 **as a Result of Implementing Environmental Commitments 3, 4, 6–12, 15, and 16**

3 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
 4 4A would result in effects on boating-related recreation similar to the effects discussed under
 5 Alternative 4 for implementing conservation measures. However, the extent of the effects on boating
 6 under Alternative 4A would be much less because the total acreage that would be affected by the
 7 conservation and stressor reduction actions occurring in the Plan Area would be much less when
 8 compared to Alternative 4. Restoration of channel margin enhancement, riparian natural
 9 community, and nontidal marsh could provide increased boating opportunities within the study
 10 area.

11 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
 12 some of the conservation and stressor reduction components may limit some opportunities for
 13 boating and boating-related recreation by reducing the extent of navigable water available to
 14 boaters. Under Environmental Commitment 6, where construction and completion of new benches
 15 would extend into existing waterways, navigable areas would be slightly reduced, which would
 16 permanently affect boating-related recreation. Under Environmental Commitment 16, depending on
 17 the design, the construction and operation of these barriers could constrict boat passage or
 18 necessitate lower speed limits, diminishing the boating experience around the barriers. Temporary
 19 effects would stem from construction, which may limit boat access, speeds, or create excess noise,
 20 odors, or unattractive visual scenes during periods of implementation. However, overall the
 21 conservation and stressor reduction components would also lead to an enhanced boating experience
 22 by expanding the extent of waterways available to boaters. Overall, these measures would not be
 23 anticipated to result in a long-term reduction in boating-related recreation activities; therefore, this
 24 impact is considered less than significant.

25 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
 26 **Result of Implementing Environmental Commitments 3, 4, 6–12, 15, and 16**

27 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
 28 4A would result in effects on upland recreational opportunities similar to Alternative 4. However,
 29 the extent of these effects occurring under Alternative 4A would be much less than under
 30 Alternative 4 because the total acreage that would be affected by the conservation and stressor
 31 reduction actions occurring in the Plan Area would be much less. The actions could benefit the same
 32 types of recreation opportunities (e.g., hunting, hiking, walking, wildlife viewing, botanical viewing,
 33 nature photography, picnicking, and sightseeing) as described for Alternative 4, however the
 34 recreational benefits accruing from these actions would be much less because of the smaller acreage
 35 that would be restored. Conversely, the conservation and stressor reduction actions could adversely
 36 affect established recreation activities that would no longer be possible or compatible with
 37 restoration. These potential adverse effects would be similar to those described under
 38 Alternative 4, however the effects are expected to be much less because of the smaller total acreage
 39 that would be restored.

40 Implementing the conservation and stressor reduction components could result in an adverse effect
 41 on recreation opportunities by reducing the extent of upland recreation sites and activities available
 42 for hiking, nature photography, or other similar activity. However, implementation of the measures
 43 would also restore or enhance new potential sites for upland recreation thereby potentially

1 improving the quality of recreational opportunities. Therefore, overall, there would not be an
2 adverse impact.

3 **CEQA Conclusion:** Similar to Alternative 4, site preparation and earthwork activities occurring
4 under Alternative 4A required to implement the conservation and stressor reduction components
5 could temporarily limit or disrupt opportunities for upland recreation. Site preparation and
6 earthwork associated with restoration could result in temporary closure of recreational areas and
7 excess noise, and limit access to existing upland recreational areas. These impacts on upland
8 recreational opportunities would be considered less than significant because—similar to Alternative
9 4—environmental commitments incorporated into the project would require the project
10 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities as
11 an element of the conservation and stressor reduction components. These components would not be
12 anticipated to result in a substantial long-term disruption of upland recreational activities; thus, this
13 impact is considered less than significant.

14 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other
15 Environmental Commitments with Federal, State, or Local Plans, Policies, or Regulations
16 Addressing Recreation Resources**

17 **NEPA Effects:** Similar to Alternative 4A, constructing the water conveyance facilities and
18 implementing the conservation and stressor reduction components under Alternative 4A could
19 result in incompatibilities with plans and policies that address recreation. A number of plans and
20 policies that coincide with the study area provide guidance for recreation resource issues are
21 overviewed Section 15.2, *Regulatory Setting*. This overview of plan and policy compatibility
22 evaluates whether Alternative 4A is compatible or incompatible with such enactments, rather than
23 whether impacts are adverse or not adverse or significant or less than significant. If the
24 incompatibility relates to an applicable plan, policy, or regulation adopted to avoid or mitigate
25 recreation effects, then an incompatibility might be indicative of a related significant or adverse
26 effect under CEQA and NEPA, respectively. Such physical effects of Alternative 4A on recreation
27 resources are addressed in Impacts REC-1 through REC-11, and in other chapters, such as Chapter
28 23, *Noise*, and Chapter 17, *Aesthetics and Visual Resources*. A summary of the compatibility
29 evaluations related to recreation resources for plans and policies is contained in the analysis of
30 Alternative 4 and is applicable to Alternative 4A. Generally the evaluation found that implementing
31 Alternative 4A would not be compatible with some provisions of The Johnston-Baker-Andal-
32 Boatwright Delta Protection Act of 1992 and some policies of the Sacramento, San Joaquin, Contra
33 Costa, and Alameda Counties general plans that address recreation.

34 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
35 physical consequence to the environment. The physical effects are discussed in Alternative 4A,
36 impacts REC-1 through REC-11, and no additional CEQA conclusion is required related to the
37 compatibility of the alternative with relevant plans and polices.

1 **15.3.4.3 Alternative 2D—Dual Conveyance with Modified**
 2 **Pipeline/Tunnel and Intakes 1, 2, 3, 4, and 5 (15,000 cfs;**
 3 **Operational Scenario B)**

4 For the purposes of assessment of effects on recreation, Alternative 2D is the same as Alternative 4A,
 5 with the following exceptions.

- 6 • Under Alternative 2D, a total of five intake facilities would be constructed and operated. Intake
 7 locations are 1 through 5.
- 8 • The operations scenario for Alternative 2D differs from Alternative 4A (scenario B).

9 Tables 15-15 under Alternative 4 lists the recreation sites and areas that may be affected by
 10 Alternative 2D. Specific effects on recreation areas or sites are discussed below.

11 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private**
 12 **Commercial Recreation Facility Available for Public Access as a Result of the Location of**
 13 **Proposed Water Conveyance Facilities**

14 **NEPA Effects:** Alternative 2D would include the same physical/structural components as Alternative
 15 4, except that it would include two additional intakes compared to Alternative 4. The extent of the
 16 permanent displacement of public use or private commercial recreation areas located within the
 17 Delta occurring under Alternative 2D as a result of the location of the intakes would be the same as
 18 described for Alternative 4. The proposed location of the Alternative 2D five intake facilities,
 19 tunnels, and associated water conveyance facilities would not lie within the designated boundaries
 20 of an existing public use recreation site. The post-construction location of the water conveyance
 21 facilities would not result in long-term disruption or reduction of any well-established recreation
 22 activity or site, including parks, marinas, or other designated areas. Therefore, there would be no
 23 adverse effects. The extent of the permanent displacement of public use or private commercial
 24 recreation areas under Alternative 2D as a result of the conveyance facilities located along the rest
 25 of the alignment past the intakes, would be the same as described for Alternative 4, as described in
 26 Section 15.3.3.9.

27 **CEQA Conclusion:** The extent of permanent displacement of public use or private commercial
 28 recreation areas as a result of the location of the intakes under Alternative 2D would be the same as
 29 discussed for Alternative 4 because the location of proposed intakes are similar for the two
 30 alternatives. The alternative would not locate alternative facilities that would result in the
 31 permanent displacement of any well-established public use or private commercial recreation facility
 32 available for public access. The extent of permanent displacement of public use or private
 33 commercial recreation areas as a result of the location of the rest of the alignment past the intakes
 34 under Alternative 2D would be the same as discussed for Alternative 4 because the location of
 35 proposed alignments are similar for the two alternatives. Therefore, impacts are considered less
 36 than significant. No mitigation is required.

37 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences**
 38 **as a Result of Constructing the Proposed Water Conveyance Facilities**

39 **NEPA Effects:** The extent of the long-term reduction of recreation experiences within the Delta as a
 40 result of construction the water conveyance facilities under Alternative 2D would be the same as
 41 described for Alternative 4. Although Alternative 2D includes two more intakes than Alternative 4,

1 both alternatives would affect the same recreational facilities. Clarksburg Boat Launch and Stone
2 Lakes NWR would be affected by long-term noise and visual disturbances from the construction of
3 the intakes, as described under Alternative 4. Two recreation sites, Clifton Court Forebay and
4 Cosumnes River Preserve, are within the potential construction footprint and six recreation sites or
5 areas (Stone Lakes NWR, Clarksburg Boat Launch, Wimpy's Marina, Delta Meadows, Bullfrog
6 Landing Marina, and Lazy M Marina) are within the 1,200- to 1,400-foot indirect impact area, as
7 described in Alternative 4. Potential indirect effects on recreation include loss of access,
8 construction noise, and changes in the visual character of the area surrounding the recreation sites.

9 Stone Lakes NWR would be affected by noise and visual disturbances as a result of construction of
10 and associated work areas related to Intakes 1 through 4. These impacts would be the same as those
11 described for Intakes 2 and 3 under Alternative 4.

12 As discussed in detail under Alternative 4, impacts on recreation occurring within the Stone Lakes
13 NWR would be attributable to noise and changes in visual character as a result of temporary work
14 areas, RTM storage, geotechnical exploration, construction of Intakes 2 and 3, and construction of
15 the temporary transmission lines. Recreation activities that could be adversely affected include
16 wildlife and environmental education.

17 The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the
18 site of Intake 3. Although access to the boat launch would be maintained during the construction
19 period, noise generated during construction and geotechnical testing could adversely affect use of
20 the public access areas near the boat launch for fishing or other activities.

21 As discussed under Alternative 4, impacts on recreation opportunities occurring within the
22 Cosumnes River Preserve would include disruption of wildlife viewing and docent-guided tours.
23 Although no recreation opportunities would be permanently displaced, recreation opportunities
24 occurring within portions of the preserve could be adversely affected during construction as result
25 of the introduction of noise, light, and temporary facilities such as access roads, safe haven work
26 sites, and tunnel shaft with temporary work areas.

27 Wimpy's Marina is a private boating facility located on the south fork of the Mokelumne River
28 southeast of Walnut Grove. Geotechnical exploration would occur along the tunnel corridor for
29 approximately 2.5 years and would introduce noise that would adversely affect recreation occurring
30 at the marina.

31 As discussed in detail under Alternative 4, recreation occurring at Delta Meadows could be affected
32 by geotechnical testing and construction and operation of the intermediate forebay and spillway.
33 These features would generate noise and introduce visual disturbances to the recreation site.

34 Recreation occurring at the Bullfrog Landing Marina on Middle River could be affected by noise and
35 visual disturbance as a result of constructing the water conveyance across Bacon Island. This would
36 include impacts from constructing a temporary access road on the island as well as a temporary safe
37 haven work area. Anglers on the river between the marina and the construction area would also
38 experience noise and visual disturbances during construction.

39 On-water recreation opportunities not associated with formal recreation sites could be affected by
40 the introduction of noise and light during the construction period. The quality of recreation
41 opportunities in the vicinity of construction sites may be adversely affected by noise and changes in
42 visual character.

1 As discussed in detail under Alternative 4, recreation opportunities, including fishing and hunting,
2 could be adversely affected by expanding Clifton Court Forebay. Recreation would be adversely
3 affected because access to the forebay would not be allowed during construction.

4 Construction of Alternative 2D intakes and water conveyance facilities would result in disruption to
5 recreational opportunities. Indirect effects on recreation experiences may occur as a result of
6 impaired access, construction noise, or negative visual effects. Overall, construction and
7 geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual
8 construction sites near recreation sites or areas and in-river construction would be primarily
9 limited to June 1 through October 31 each year, which would result in a long-term reduction of
10 recreational opportunities or experiences. Mitigation measures (REC-2, BIO-75, AES-1a, AES-1b,
11 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-2D, AES-4b, AES-4c, AES-4d, TRANS-1a, TRANS-1b,
12 TRANS-1c, NOI-1a, and NOI-1b) are available to address adverse effects on recreation resulting from
13 introduction of noise and light and the loss of access. However, due to the length of time that
14 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
15 related to temporary disruption of existing recreational activities at facilities within the impact area
16 would be adverse.

17 **CEQA Conclusion:** Construction of the Alternative 2D intakes and related water conveyance facilities
18 would result in permanent and long-term (i.e., lasting over 2 years) impacts on well-established
19 recreational opportunities and experiences in the study area because of access, noise, and visual
20 setting disruptions that could result in loss of public use. These impacts would occur year-round.
21 The mitigation measures described below, in combination with environmental commitments, would
22 reduce some construction-related impacts by compensating for effects on wildlife habitat and
23 species; minimizing the extent of changes to the visual setting, including nighttime light sources;
24 manage construction-related traffic; and implementing noise reduction and complaint tracking
25 measures. However, the level of impact would not be reduced to a less-than-significant level because
26 it is not certain the mitigation would reduce the level of these impacts to less than significant in all
27 the instances occurring within the entire study area. Therefore, these impacts are considered
28 significant and unavoidable.

29 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

30 Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

31 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid 32 Disturbance of Nesting Birds**

33 Please see Mitigation Measure BIO-75 under Impact BIO-75 in the discussion of Alternative 4 in
34 Chapter 12, *Terrestrial Biological Resources*.

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 see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in
39 Chapter 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
2 **Sensitive Receptors**

3 Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in
4 Chapter 17, *Aesthetics and Visual Resources*.

5 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
6 **Material Area Management Plan**

7 Please see to Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in
8 Chapter 17, *Aesthetics and Visual Resources*.

9 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

10 Please see to Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in
11 Chapter 17, *Aesthetics and Visual Resources*.

12 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
13 **Extent Feasible**

14 Please see Mitigation Measure AES-1e under Impact AES-1 in the discussion of Alternative 4 in
15 Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-1f under Impact AES-1 in the discussion of Alternative 4 in
19 Chapter 17, *Aesthetics and Visual Resources*.

20 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
21 **Landscaping Plan**

22 Please see Mitigation Measure AES-1g under Impact AES-1 in the discussion of Alternative 4 in
23 Chapter 17, *Aesthetics and Visual Resources*.

24 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
25 **Residents**

26 Please see Mitigation Measure AES-2D under Impact AES-4 in the discussion of Alternative 4 in
27 Chapter 17, *Aesthetics and Visual Resources*.

28 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
29 **Construction**

30 Please see Mitigation Measure AES-4b under Impact AES-4 in the discussion of Alternative 4 in
31 Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-4c under Impact AES-4 in the discussion of Alternative 4 in
35 Chapter 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

2 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
3 Alternative 1A, Impact AES-4.

4 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management
5 Plan**

6 Please see Mitigation Measure TRANS-1a under TRANS-1 in the discussion of Alternative 4 in
7 Chapter 19, *Transportation*.

8 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on
9 Congested Roadway Segments**

10 Please see Mitigation Measure TRANS-1b under Impact TRANS-1 in the discussion of Alternative
11 4 in Chapter 19, *Transportation*.

12 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation
13 Agreements to Enhance Capacity of Congested Roadway Segments**

14 Please see Mitigation Measure TRANS-1c under Impact TRANS-1 in the discussion of Alternative
15 4 in Chapter 19, *Transportation*.

16 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during
17 Construction**

18 Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in
19 Chapter 23, *Noise*.

20 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response
21 Tracking Program**

22 Please see Mitigation Measure NOI-1b under Impact NOI-1 in the discussion of Alternative 4 in
23 Chapter 23, *Noise*.

24 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a
25 Result of Constructing the Proposed Water Conveyance Facilities**

26 **NEPA Effects:** The extent of the long-term reduction in recreational navigation opportunities as a
27 result of constructing the proposed water conveyance facilities under Alternative 2D would be
28 similar to Alternative 4. Construction activities associated with constructing five intakes on the
29 Sacramento River, siphons near Clifton Court Forebay, Head of Old River barrier and operating
30 barges and constructing temporary barge unloading facilities at Snodgrass Slough, Potato Slough,
31 San Joaquin River, Middle River, Connection Slough, Old River, and the West Canal would disrupt
32 boat passage and navigation at and near these sites. Although implementing Mitigation Measure
33 TRANS-1a and helping to fund measures to reduce aquatic weeds would reduce impacts on
34 recreational navigation, these effects would remain adverse because of the long duration of
35 construction which would continually reduce recreation opportunities and distract from
36 experiences occurring near construction activity.

1 **CEQA Conclusion:** Impacts on recreational navigation during construction of the water conveyance
2 facilities under Alternative 2D would be similar to those described under Alternative 4. Impeding
3 boat passage and navigation and resulting impacts on recreation would occur during construction of
4 the intakes, temporary barge unloading facilities, and siphons. Although Mitigation Measure TRANS-
5 1a would reduce impacts on navigation associated with barge unloading facilities and participating
6 in the aquatic weed reduction program would help address impacts on navigation, the impact of
7 constructing the water conveyance facilities would be considered significant and unavoidable.

8 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
9 **Plan**

10 Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative
11 4 in Chapter 19, *Transportation*.

12 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
13 **Result of Constructing the Proposed Water Conveyance Facilities**

14 **NEPA Effects:** The extent of changes in sport fishing opportunities occurring within the study area
15 under Alternative 2D would be similar to Alternative 4. Constructing water intakes, siphons, and
16 operable barrier and placement and use of barge unloading facilities during tunnel/pipeline
17 construction would result in temporary water quality effects (e.g., turbidity, accidental spills,
18 disturbance of contaminated sediments); elevated underwater noise (associated with pile driving
19 and other construction activities); fish exposure to stranding and direct physical injury; and
20 temporary exclusion or degradation of spawning and rearing habitats. Expanding Clifton Court
21 Forebay would restrict access to bank fishing sites during the construction period. Although fish
22 populations likely would not be affected to the degree that the abundance of sport fish would be
23 substantially reduced, construction conditions would introduce noise and visual disturbances that
24 would affect the recreation experience for anglers.

25 Due to the magnitude of the Plan Area and the 12-year duration construction for this alternative,
26 this impact would be significant. However, mitigation measures are available to reduce impacts by
27 enhancing and ensuring access to nearby fishing sites and to address noise and visual disturbances.
28 Mitigation Measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d, AES-1e, AES-1f, and
29 AES-1g would help reduce or avoid impacts on recreational fishing occurring at construction sites.
30 With implementation of these mitigation measures, this impact would not be adverse.

31 **CEQA Conclusion:** The impact on recreational fishing opportunities as a result of constructing the
32 water conveyance facilities under Alternative 2D would be similar to Alternative 4. The combined
33 impact on recreational fishing opportunities would be considered significant. Implementing
34 mitigation measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d, AES-1e, AES-1f, and
35 AES-1g would reduce the impact on recreational fishing to a less-than-significant level by providing
36 alternate fishing sites, reducing noise generated during construction activities, and limiting changes
37 in the visual character of recreational fishing sites.

38 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

39 Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

1 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
2 **Construction**

3 Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in
4 Chapter 23, *Noise*.

5 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
6 **Tracking Program**

7 Please see Mitigation Measure NOI-1b under, Alternative 1A in the discussion of Alternative 4 in
8 Chapter 23, *Noise*.

9 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**
10 **Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New**
11 **Transmission Lines and Underground Transmission Lines Where Feasible**

12 Please see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in
13 Chapter 17, *Aesthetics and Visual Resources*.

14 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**
15 **Sensitive Receptors**

16 Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in
17 Chapter 17, *Aesthetics and Visual Resources*.

18 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
19 **Material Area Management Plan**

20 Please see Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in
21 Chapter 17, *Aesthetics and Visual Resources*.

22 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

23 Please see Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in
24 Chapter 17, *Aesthetics and Visual Resources*.

25 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
26 **Extent Feasible**

27 Please see Mitigation Measure AES-1e under AES-1 in the discussion of Alternative 4 in Chapter
28 17, *Aesthetics and Visual Resources*.

29 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**
30 **Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities**

31 Please see Mitigation Measure AES-1f under AES-1 in the discussion of Alternative 4 in Chapter
32 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
2 **Landscaping Plan**

3 Please see Mitigation Measure AES-1g under AES-1 in the discussion of Alternative 4 in Chapter
4 17, *Aesthetics and Visual Resources*.

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:** The effects of operating the water conveyance facilities on recreational fishing
8 opportunities under Alternative 2D would be similar to Alternative 4. Operation of Alternative 2D
9 may result in changes in entrainment, spawning, rearing, and migration. However, effects on fish
10 species that are popular for recreational fishing are not of a nature/level that will adversely affect
11 recreational fishing. While there are some significant impacts on specific non-listed species, as
12 discussed in Chapter 11, *Fish and Aquatic Resources*, they are typically limited to specific rivers and
13 not the population of that species as a whole. The effect is not adverse because it would not result in
14 a substantial long-term reduction in recreational fishing opportunities.

15 **CEQA Conclusion:** The potential impact on covered and non-covered sport fish species from
16 operation of Alternative 2D would be considered less than significant because any impacts on fish
17 and, as a result, impacts on recreational fishing, are anticipated to be isolated to certain areas and
18 would not affect the abundance of popular sport fish.

19 **Impact REC-6: Cause a Change in Reservoir or Lake Elevations Resulting in Substantial**
20 **Reductions in Water-Based Recreation Opportunities and Experiences at North- and South-**
21 **of-Delta Reservoirs**

22 **NEPA Effects:** The methodology for assessing effects on recreation at major upstream storage
23 reservoirs for Alternative 2D is the same as applied to Alternative 2A. However, Alternative 2A only
24 analyzes Operational Scenario B Late Long Term compared to No Action Alternative Late Long Term
25 (2060). Alternative 2D analyzes Operational Scenario B Early Long Term compared to No Action
26 Alternative Early Long Term (2025). The results of this assessment are shown in Tables 15-23 and
27 15-24.

28 **Existing Conditions (CEQA Baseline) Compared to Alternative 2D ELT (2025)**

29 Under Alternative 2D Operational Scenario B recreation thresholds would be exceeded more
30 frequently at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs relative to Existing
31 Conditions. These changes represent a greater than 10% increase in the frequency the recreation
32 thresholds are exceeded under Operational Scenario B Early Long Term at Trinity, Shasta, Oroville,
33 Folsom, and San Luis Reservoirs compared to Existing Conditions. However, as discussed in Section
34 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are primarily
35 attributable to change in demand and other external factors such as sea level rise and climate
36 change. It is not possible to specifically define the exact extent of the changes due to implementation
37 of the action alternative using these model simulation results. Thus, the precise contributions of the
38 external factors to the total differences between Existing Conditions and Alternative 2D Operational
39 Scenario B Early Long Term cannot be isolated in this comparison. Please refer to the comparison of
40 the No Action Alternative (ELT) to Alternative 2D for a discussion of the potential effects on end-of-
41 September reservoir and lake elevations attributable to operation of Alternative 2D.

1 **Existing Conditions (CEQA Baseline) Compared to Alternative 2D LLT (2060)**

2 Existing Conditions compared to Alternative 2D LLT (2060) results are the same as described under
3 Alternative 2A.

4 **No Action Alternative (ELT) Compared to Alternative 2D**

5 The comparison of Alternative 2D to the No Action Alternative (ELT) condition most closely
6 represents changes in reservoir elevations that may occur as a result of operation of Alternative 2D
7 because both conditions external factors such as change in demand and sea level rise and climate
8 change (see Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*). As
9 shown in Tables 15-23 and 15-24, Alternative 2D Operational Scenario B Early Long Term would
10 result in changes in the frequency with which the end-of-September reservoir levels at Trinity,
11 Shasta, Oroville, Folsom, and San Luis Reservoirs would fall below levels identified as important
12 water-dependent recreation thresholds. The CALSIM II modeling results indicate that reservoir
13 levels under Alternative 2D ELT operations would either not change or would fall below the
14 individual reservoir recreation thresholds less frequently than under No Action Alternative (ELT)
15 conditions at Trinity, Shasta, and Oroville Reservoirs. Operation of Alternative 2D would not
16 adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these
17 conditions represent improved recreation conditions for ELT results under operation of Alternative
18 2D because there would be slightly 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 (ELT) conditions.

21 The ELT modeling result for Folsom Reservoir indicates there could be 4 additional years under
22 Alternative 2D, during which the reservoir level would fall below the reservoir's boating threshold
23 at the end of September. The change would not exceed the 10% increase in the frequency threshold
24 that would indicate an adverse impact on recreation occurring at the reservoir.

25 The ELT modeling result for New Melones Reservoir indicates there could be 1 additional year
26 under Alternative 2D, during which the reservoir level would fall below the reservoir's boating
27 threshold at the end of September. The change would not exceed the 10% increase in the frequency
28 threshold that would indicate an adverse impact on recreation occurring at the reservoir.

29 The ELT modeling results for San Luis Reservoir indicate there could be 26 additional years under
30 Alternative 2D, during which the reservoir level would fall below the reservoir boating threshold at
31 the end of September relative to the No Action Alternative (ELT) condition. This is a greater than
32 10% change and would be considered a substantial reduction in recreational boating opportunities
33 at San Luis Reservoir. Shoreline fishing would still be possible, and other recreation activities at the
34 reservoir—picnicking, biking, hiking, and fishing—would be available. The reduction in surface
35 elevations at San Luis Reservoir under Operational Scenarios H3 and H4 would result in an adverse
36 impact on recreation occurring at the reservoir by restricting access by boaters. Mitigation Measure
37 REC-6 would be available to address this effect.

38 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
39 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
40 San Luis Reservoir, the CALSIM II modeling results indicate that reservoir levels attributable to
41 Alternative 2D operations would either slightly decrease (Folsom and New Melones Reservoirs) or
42 would fall below the individual reservoir thresholds less frequently than under No Action
43 Alternative (ELT). These changes in reservoir and lake elevations would result in a less-than-

1 significant impact on recreation opportunities and experiences at Trinity, Shasta, Oroville, Folsom,
 2 and New Melones Reservoirs. At Trinity and Oroville Reservoirs, because there would be fewer
 3 years in which the reservoir or lake levels fall below the recreation threshold relative to No Action
 4 Alternative (ELT) conditions, these effects would be considered beneficial to recreation
 5 opportunities and experiences. Operation of Alternative 2D would not substantially affect water-
 6 dependent or water-enhanced recreation at these reservoirs. At San Luis Reservoir at ELT, the
 7 reduction in reservoir access by boaters would be significant because it is a greater than 10%
 8 change and could result in a significant impact on recreation. Mitigation Measure REC-6 would
 9 reduce this impact to a less-than-significant level.

10 **Mitigation Measure REC-6: Provide a Temporary Alternative Boat Launch to Ensure
 11 Access to San Luis Reservoir**

12 Consistent with applicable recreation management plans, DWR and Reclamation will work with
 13 DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative
 14 boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes
 15 unavailable.

16 **Table 15-23. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-
 17 of September Elevations below Recreation Thresholds) for Alternative 2D**

Scenario	Years ^b	Recreation Threshold ^a					
		Trinity Lake <2,270 ft Elevation		Shasta Lake <967 ft Elevation		Lake Oroville <700 ft Elevation	
		Change Relative to Existing Condition (CEQA) ^c	No Action Alternative (ELT) (CEQA/ NEPA)	Change Relative to Existing Condition (CEQA) ^c	No Action Alternative (ELT) (CEQA/ NEPA)	Change Relative to Existing Condition (CEQA) ^c	No Action Alternative (ELT) (CEQA/ NEPA)
Existing Condition (CEQA)	21			17		17	
No Action Alternative (ELT)	32	11		22	5	26	9
Alternative 2D (ELT)							
Operational Scenario B	31	10	-1	22	5	0	20
Alternative 2D (LLT)							
Operational Scenario B	43	22		29	12	29	12

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 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 Alternative ELT). A positive change would indicate more years with reduced recreation opportunities.

1 **Table 15-24. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-**
 2 **of September Elevations below Recreation Thresholds) for Alternative 2D**

Scenario	Recreation Threshold ^a											
	Folsom Lake <405 ft Elevation				New Melones Lake <900 ft Elevation				San Luis Reservoir <360 ft Elevation			
	Change Relative to Existing Condition	Change Relative to No Action Alternative ELT (CEQA/ NEPA)	Change Relative to Existing Condition	Change Relative to No Action Alternative ELT (CEQA/ NEPA)	Change Relative to Existing Condition	Change Relative to Action Alternative ELT (CEQA/ NEPA)	Years ^b	(CEQA) ^c	Years ^b	(CEQA) ^c	Years ^b	(CEQA) ^c
Existing Condition (CEQA)	22				9				3			
No Action (ELT)	33	11			8	-1			9	6		
Alternative 2D (ELT)												
Operational Scenario B	37	15	4		9	0	1		35	32	26	
Alternative 2D (LLT)												
Operational Scenario B	44	22			12	3			34	31		

^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 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 ELT). 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 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
 5 **Result of Maintenance of the Proposed Water Conveyance Facilities**

6 **NEPA Effects:** The effects of maintaining the water conveyance facilities on water-based recreation
 7 under Alternative 2D would be the same as described under Alternative 4. These potential effects
 8 would occur as a result of regular maintenance activities of the intakes. The effect on boating is not
 9 considered adverse because the boat passage around the intakes would be maintained and
 10 disruption of boat access in the immediate vicinity of the intakes would be short-term.

11 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 12 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
 13 or water-based recreation within the vicinity of the intakes.

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:** The effects of maintaining the water conveyance facilities on land-based recreation
4 under Alternative 2D would be the same as described under Alternative 4. Maintenance activities
5 would be short-term and intermittent, occur within the immediate vicinity of water conveyance
6 facility, and are not expected to generate noise that would distract from adjacent recreation
7 opportunities. Therefore, there would be no 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 land-based recreational opportunities. Therefore, there would be
11 no impact and no mitigation would be required.

12 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of
13 Implementing Environmental Commitments 3, 4, 6–12, 15, and 16**

14 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
15 2D would result in effects on fishing opportunities similar to those described for Alternative 4. The
16 magnitude of the effects occurring under Alternative 2D would be much less than under Alternative
17 4 because the total acreage that would be affected by the conservation and stressor reduction
18 actions (Environmental Commitments 3, 4, 6–12, 15, and 16) occurring in the Plan Area would be
19 much less than the conservation measures proposed under Alternative 4. Construction, operation,
20 and maintenance of the conservation and stressor reduction components could have affects that
21 would be similar in nature to those discussed above for construction, 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 and stressor reduction components would be much less when
25 compared to Alternative 4. In addition, the conservation and stressor reduction components would
26 be expected to result in long-term benefits to aquatic species.

27 During the implementation stage, construction activity associated with the conservation and
28 stressor reduction components could result in adverse effects on recreation by temporarily or
29 permanently limiting access to fishing sites and disturbing fish habitat. The impact on fishing
30 opportunities as the conservation and stressor reduction components are constructed would not be
31 considered adverse because the actions would be small and localized. In the long term, the impact
32 on fishing opportunities would be considered beneficial because the conservation and stressor
33 reduction measures could benefit aquatic habitat and fish abundance.

34 **CEQA Conclusion:** Conservation and stressor reduction components would be expected to improve
35 fishing opportunities within the Plan Area. The adverse and beneficial impacts would be similar to
36 those described under Alternative 4, however the extent of those impacts would be much less
37 because the restoration actions occurring under Alternative 2D would include much less acreage
38 and a smaller geographic scope than the conservation measures described under Alternative 4. The
39 impact on fishing opportunities as the conservation and stressor reduction components are
40 constructed would be considered less than significant because the actions would be small and
41 localized. In the long term, the impact on fishing opportunities would be considered beneficial
42 because the conservation and stressor reduction measures could benefit aquatic habitat and fish
43 abundance.

1 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
2 **as a Result of Implementing Environmental Commitments 3, 4, 6–12, 15, and 16**

3 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
4 2D would result in effects on boating-related recreation similar to the effects discussed under
5 Alternative 4 for implementing conservation measures. However, the extent of the effects on boating
6 under Alternative 2D would be much less because the total acreage that would be affected by the
7 conservation and stressor reduction actions occurring in the Plan Area would be much less when
8 compared to Alternative 4. Restoration of channel margin enhancement, riparian natural
9 community, and nontidal marsh could provide increased boating opportunities within the study
10 area.

11 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
12 some of the conservation and stressor reduction components may limit some opportunities for
13 boating and boating-related recreation by reducing the extent of navigable water available to
14 boaters. However, overall the conservation and stressor reduction components would also lead to
15 an enhanced boating experience by expanding the extent of waterways available to boaters. Overall,
16 these measures would not be anticipated to result in a long-term reduction in boating-related
17 recreation activities; therefore, this impact is considered less than significant.

18 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
19 **Result of Implementing Environmental Commitments 3, 4, 6–12, 15, and 16**

20 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
21 2D would result in effects on upland recreational opportunities similar to Alternative 4. However,
22 the extent of these effects occurring under Alternative 2D would be much less than under
23 Alternative 4 because the total acreage that would be affected by the conservation and stressor
24 reduction actions occurring in the Plan Area would be much less. The actions could benefit the same
25 types of recreation opportunities (e.g., hunting, hiking, walking, wildlife viewing, botanical viewing,
26 nature photography, picnicking, and sightseeing) as described for Alternative 4, however the
27 recreational benefits accruing from these actions would be much less because of the smaller acreage
28 that would be restored. Conversely, the conservation and stressor reduction actions could adversely
29 affect established recreation activities that would no longer be possible or compatible with
30 restoration. These potential adverse effects would be similar to those described under
31 Alternative 4, however the effects are expected to be much less because of the smaller total acreage
32 that would be restored.

33 Implementing the conservation and stressor reduction components could result in an adverse effect
34 on recreation opportunities by reducing the extent of upland recreation sites and activities available
35 to hiking, nature photography, or other similar activity. However, implementation of the measures
36 would also restore or enhance new potential sites for upland recreation thereby potentially
37 improving the quality of recreational opportunities.

38 **CEQA Conclusion:** Similar to Alternative 4, site preparation and earthwork activities occurring
39 under Alternative 2D required to implement the conservation and stressor reduction components
40 could temporarily limit or disrupt opportunities for upland recreational. These impacts on upland
41 recreational opportunities would be considered less than significant because—similar to Alternative
42 4—environmental commitments incorporated into the project would require the project
43 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities as
44 an element of the conservation and stressor reduction components. These components would not be

1 anticipated to result in a substantial long-term disruption of upland recreational activities; thus, this
 2 impact is considered less than significant.

3 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other
 4 Environmental Commitments with Federal, State, or Local Plans, Policies, or Regulations
 5 Addressing Recreation Resources**

6 **NEPA Effects:** Similar to Alternative 4, constructing the water conveyance facilities and
 7 implementing the conservation and stressor reduction components under Alternative 2D could
 8 result in incompatibilities with plans and policies that address recreation. A number of plans and
 9 policies that coincide with the study area provide guidance for recreation resource issues are
 10 overviewed in Section 15.2, *Regulatory Setting*. This overview of plan and policy compatibility
 11 evaluates whether Alternative 2D is compatible or incompatible with such enactments, rather than
 12 whether impacts are adverse or not adverse or significant or less than significant. If the
 13 incompatibility relates to an applicable plan, policy, or regulation adopted to avoid or mitigate
 14 recreation effects, then an incompatibility might be indicative of a related significant or adverse
 15 effect under CEQA and NEPA, respectively. Such physical effects of Alternative 2D on recreation
 16 resources are addressed in Impacts REC-1 through REC-11, and in other chapters, such as Chapter
 17 23, *Noise*, and Chapter 17, *Aesthetics and Visual Resources*. A summary of the compatibility
 18 evaluations related to recreation resources for plans and policies is contained in the analysis of
 19 Alternative 4 and is applicable to Alternative 2D. Generally the evaluation found that implementing
 20 Alternative 2D would not be compatible with some provisions of The Johnston-Baker-Andal-
 21 Boatwright Delta Protection Act of 1992 and some policies of the Sacramento, San Joaquin, Contra
 22 Costa, and Alameda Counties general plans that address recreation.

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 Alternative 2D,
 25 impacts REC-1 through REC-11, and no additional CEQA conclusion is required related to the
 26 compatibility of the alternative with relevant plans and polices.

27 **15.3.4.4 Alternative 5A—Dual Conveyance with Modified
 28 Pipeline/Tunnel and Intake 2 (3,000 cfs; Operational Scenario C)**

29 For the purposes of assessment of effects on recreation, Alternative 5D is the same as Alternative 4A,
 30 with the following exceptions.

- 31 • Only one intake facility would be constructed under Alternative 5D (Intake 2).
- 32 • Alternative 5 has a different operations scenario (Operational Scenario C).

33 Tables 15-15 under Alternative 4 lists the recreation sites and areas that may be affected by
 34 Alternative 5A. Specific effects on recreation areas or sites are discussed below.

35 **Impact REC-1: Permanent Displacement of Existing Well-Established Public Use or Private
 36 Commercial Recreation Facility Available for Public Access as a Result of the Location of
 37 Proposed Water Conveyance Facilities**

38 **NEPA Effects:** The extent of the permanent displacement of public use or private commercial
 39 recreation areas located within the Delta occurring under Alternative 5A would be the same as
 40 described for Alternative 4, as described in Section 15.3.3.9. However, impacts would be of slightly
 41 less magnitude because Alternative 5A would only include construction of Intake 2, rather than

1 Intakes 2, 3, and 5 as under Alternative 4. The recreation areas that could be adversely affected are
2 the Cosumnes River Preserve and Clifton Court Forebay. Recreation could be disrupted at the
3 Cosumnes River Preserve by placing an RTM area to the north of the preserve, constructing an east-
4 west permanent transmission line adjacent to the northern boundary of the preserve, and locating
5 permanent tunnel shafts on the preserve. Modifications made to Clifton Court Forebay would
6 disrupt recreation activities occurring on and near the forebay's south embankment. Other potential
7 impacts along the alignment of the water conveyance facility include disruption of use of portions of
8 Staten Island and use of DWR ponds currently used for water ski instruction and hound racing. As
9 described in detail under Alternative 4, construction of the water conveyance facilities under
10 Alternative 5A would not result in an adverse effect on public use or private commercial recreation
11 facilities because none of these facilities would be permanently displaced.

12 **CEQA Conclusion:** The extent of permanent displacement of public use or private commercial
13 recreation areas under Alternative 5A would be the same as discussed for Alternative 4 because the
14 type and alignment of the water conveyance facilities are similar for the two alternatives. However,
15 impacts would be of slightly less magnitude because Alternative 5A would only include construction
16 of Intake 2, rather than Intakes 2, 3, and 5 as under Alternative 4. This includes placing permanent
17 facilities on or disrupting access to the Cosumnes River Preserve, including public access to portions
18 of Staten Island. Similarly, recreation use of the Clifton Court Forebay embankments would be
19 disrupted during construction. Specifically, public access to the forebay's south embankment, which
20 supports fishing and hunting, would be disrupted during construction. Alternative 5A would not
21 result in the permanent displacement of well-established public use or private commercial
22 recreation facilities available for public access. The impact on these facilities would be less than
23 significant and no mitigation is required.

24 **Impact REC-2: Result in Long-Term Reduction of Recreation Opportunities and Experiences 25 as a Result of Constructing the Proposed Water Conveyance Facilities**

26 **NEPA Effects:** The extent of the long-term reduction of recreation experiences within the Delta as a
27 result of construction the water conveyance facilities under Alternative 5A would be the same as
28 described for Alternative 4. While Alternative 5A would only include construction of Intake 2, rather
29 than Intakes 2, 3, and 5 as under Alternative 4, the same recreation sites would be affected. Two
30 recreation sites, Clifton Court Forebay and Cosumnes River Preserve, are within the construction
31 footprint and six recreation sites or areas (Stone Lakes NWR, Clarksburg Boat Launch, Wimpy's
32 Marina, Delta Meadows, Bullfrog Landing Marina, and Lazy M Marina) are within the 1,200– to
33 1,400-foot indirect impact area. Potential indirect effects on recreation include loss of access,
34 construction noise, and changes in the visual character of the area surrounding the recreation sites.

35 As discussed in detail under Alternative 4, impacts on recreation occurring within the Stone Lakes
36 NWR would be attributable to noise and changes in visual character as a result of temporary work
37 areas, RTM storage, geotechnical exploration, construction of Intake 2, and construction of the
38 temporary transmission lines. Recreation activities that could be adversely affected include wildlife
39 and environmental education.

40 As discussed under Alternative 4, impacts on recreation opportunities occurring within the
41 Cosumnes River Preserve would include disruption of wildlife viewing and docent-guided tours.
42 Although no recreation opportunities would be permanently displaced, recreation opportunities
43 occurring within portions of the preserve could be adversely affected during construction as result

1 of the introduction of noise, light, and temporary facilities such as access roads, safe haven work
2 sites, and tunnel shaft with temporary work areas.

3 Wimpy's Marina is a private boating facility located on the south fork of the Mokelumne River
4 southeast of Walnut Grove. Geotechnical exploration would occur along the tunnel corridor for
5 approximately 2.5 years and would introduce noise that would adversely affect recreation occurring
6 at the marina.

7 As discussed in detail under Alternative 4, recreation occurring at Delta Meadows could be affected
8 by geotechnical testing and construction and operation of the intermediate forebay and spillway.
9 These features would generate noise and introduce visual disturbances to the recreation site.

10 Recreation occurring at the Bullfrog Landing Marina on Middle River could be affected by noise and
11 visual disturbance as a result of constructing the water conveyance across Bacon Island. This would
12 include impacts from constructing a temporary access road on the island as well as a temporary safe
13 haven work area. Anglers on the river between the marina and the construction area would also
14 experience noise and visual disturbances during construction.

15 On-water recreation opportunities not associated with formal recreation sites could be affected by
16 the introduction of noise and light during the construction period. The quality of recreation
17 opportunities in the vicinity of construction sites may be adversely affected by noise and changes in
18 visual character.

19 As discussed in detail under Alternative 4, recreation opportunities, including fishing and hunting,
20 could be adversely affected by expanding Clifton Court Forebay. Recreation would be adversely
21 affected because access to the forebay would not be allowed during construction.

22 Construction of Alternative 5A intakes and water conveyance facilities would result in disruption to
23 recreational opportunities. Indirect effects on recreation experiences may occur as a result of
24 impaired access, construction noise, or negative visual effects. Overall, construction and
25 geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual
26 construction sites near recreation sites or areas and in-river construction would be primarily
27 limited to June 1 through October 31 each year, which would result in a long-term reduction of
28 recreational opportunities or experiences. Mitigation measures (REC-2, BIO-75, AES-1a, AES-1b,
29 AES-1c, AES-1d, AES-1e, AES-1f, AES-1g, AES-5A, AES-4b, AES-4c, AES-4d, TRANS-1a, TRANS-1b,
30 TRANS-1c, NOI-1a, and NOI-1b) are available to address adverse effects on recreation resulting from
31 introduction of noise and light and the loss of access. However, due to the length of time that
32 construction would occur and the dispersed effects across the Delta, the direct and indirect effects
33 related to temporary disruption of existing recreational activities at facilities within the impact area
34 would be adverse.

35 **CEQA Conclusion:** Construction of the Alternative 5A intakes and related water conveyance facilities
36 would result in permanent and long-term (i.e., lasting over 2 years) impacts on well-established
37 recreational opportunities and experiences in the study area because of access, noise, and visual
38 setting disruptions that could result in loss of public use. These impacts would occur year-round.
39 The mitigation measures described below, in combination with environmental commitments, would
40 reduce some construction-related impacts by compensating for effects on wildlife habitat and
41 species; minimizing the extent of changes to the visual setting, including nighttime light sources;
42 manage construction-related traffic; and implementing noise reduction and complaint tracking
43 measures. However, the level of impact would not be reduced to a less-than-significant level because

1 it is not certain the mitigation would reduce the level of these impacts to less than significant in all
2 the instances occurring within the entire study area. Therefore, these impacts are considered
3 significant and unavoidable.

4 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

5 Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

6 **Mitigation Measure BIO-75: Conduct Preconstruction Nesting Bird Surveys and Avoid**

7 Disturbance of Nesting Birds

8 Please see Mitigation Measure BIO-75 under Impact BIO-75 in the discussion of Alternative 4 in
9 Chapter 12, *Terrestrial Biological Resources*.

10 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to**

11 Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New

12 Transmission Lines and Underground Transmission Lines Where Feasible

13 Please see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in
14 Chapter 17, *Aesthetics and Visual Resources*.

15 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and**

16 Sensitive Receptors

17 Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in
18 Chapter 17, *Aesthetics and Visual Resources*.

19 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**

20 Material Area Management Plan

21 Please see to Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in
22 Chapter 17, *Aesthetics and Visual Resources*.

23 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

24 Please see to Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in
25 Chapter 17, *Aesthetics and Visual Resources*.

26 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**

27 Extent Feasible

28 Please see Mitigation Measure AES-1e under Impact AES-1 in the discussion of Alternative 4 in
29 Chapter 17, *Aesthetics and Visual Resources*.

30 **Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from**

31 Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities

32 Please see Mitigation Measure AES-1f under Impact AES-1 in the discussion of Alternative 4 in
33 Chapter 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
2 **Landscaping Plan**

3 Please see Mitigation Measure AES-1g under Impact AES-1 in the discussion of Alternative 4 in
4 Chapter 17, *Aesthetics and Visual Resources*.

5 **Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of**
6 **Residents**

7 Please see Mitigation Measure AES-5A under Impact AES-4 in the discussion of Alternative 4 in
8 Chapter 17, *Aesthetics and Visual Resources*.

9 **Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for**
10 **Construction**

11 Please see Mitigation Measure AES-4b under Impact AES-4 in the discussion of Alternative 4 in
12 Chapter 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-4c under Impact AES-4 in the discussion of Alternative 4 in
16 Chapter 17, *Aesthetics and Visual Resources*.

17 **Mitigation Measure AES-4d: Avoid the Use of Blue Rich White Light LED Lighting**

18 Please refer to Mitigation Measure AES-4d in Chapter 17, *Aesthetics and Visual Resources*,
19 Alternative 1A, Impact AES-4.

20 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
21 **Plan**

22 Please see Mitigation Measure TRANS-1a under TRANS-1 in the discussion of Alternative 4 in
23 Chapter 19, *Transportation*.

24 **Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on**
25 **Congested Roadway Segments**

26 Please see Mitigation Measure TRANS-1b under Impact TRANS-1 in the discussion of Alternative
27 4 in Chapter 19, *Transportation*.

28 **Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation**
29 **Agreements to Enhance Capacity of Congested Roadway Segments**

30 Please see Mitigation Measure TRANS-1c under Impact TRANS-1 in the discussion of Alternative
31 4 in Chapter 19, *Transportation*.

32 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during**
33 **Construction**

34 Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in
35 Chapter 23, *Noise*.

1 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response**
2 **Tracking Program**

3 Please see Mitigation Measure NOI-1b under Impact NOI-1 in the discussion of Alternative 4 in
4 Chapter 23, *Noise*.

5 **Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a**
6 **Result of Constructing the Proposed Water Conveyance Facilities**

7 **NEPA Effects:** The extent of the long-term reduction in recreational navigation opportunities as a
8 result of constructing the proposed water conveyance facilities under Alternative 5A would be
9 similar to Alternative 4. However, impacts would be of slightly less magnitude because Alternative
10 5A would only include construction of Intake 2, rather than Intakes 2, 3, and 5 as under Alternative
11 4. Construction activities associated with constructing Intake 1 on the Sacramento River, siphons
12 near Clifton Court Forebay, Head of Old River barrier and operating barges and constructing
13 temporary barge unloading facilities at Snodgrass Slough, Potato Slough, San Joaquin River, Middle
14 River, Connection Slough, Old River, and the West Canal would disrupt boat passage and navigation
15 at and near these sites. Although implementing Mitigation Measure TRANS-1a and helping to fund
16 measures to reduce aquatic weeds would reduce impacts on recreational navigation, these effects
17 would remain adverse because of the long duration of construction which would continually reduce
18 recreation opportunities and distract from experiences occurring near construction activity.

19 **CEQA Conclusion:** Impacts on recreational navigation during construction of the water conveyance
20 facilities under Alternative 5A would be similar to those described under Alternative 4. However,
21 impacts would be of slightly less magnitude because Alternative 5A would only include construction
22 of Intake 2, rather than Intakes 2, 3, and 5 as under Alternative 4. Impeding boat passage and
23 navigation and resulting impacts on recreation would occur during construction of the intakes,
24 temporary barge unloading facilities, and siphons. Although Mitigation Measure TRANS-1a would
25 reduce impacts on navigation associated with barge unloading facilities and participating in the
26 aquatic weed reduction program would help address impacts on navigation, the impact of
27 constructing the water conveyance facilities would be considered significant and unavoidable.

28 **Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management**
29 **Plan**

30 Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative
31 4 in Chapter 19, *Transportation*.

32 **Impact REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a**
33 **Result of Constructing the Proposed Water Conveyance Facilities**

34 **NEPA Effects:** The extent of changes in sport fishing opportunities occurring within the study area
35 under Alternative 5A would be the same as Alternative 4. However, impacts would be of slightly less
36 magnitude because Alternative 5A would only include construction of Intake 2, rather than Intakes
37 2, 3, and 5 as under Alternative 4. Constructing one water intake, siphons, and operable barrier and
38 placement and use of barge unloading facilities during tunnel/pipeline construction would result in
39 temporary water quality effects (e.g., turbidity, accidental spills, disturbance of contaminated
40 sediments); elevated underwater noise (associated with pile driving and other construction
41 activities); fish exposure to stranding and direct physical injury; and temporary exclusion or
42 degradation of spawning and rearing habitats. Expanding Clifton Court Forebay would restrict

1 access to bank fishing sites during the construction period. Although fish populations likely would
2 not be affected to the degree that the abundance of sport fish would be substantially reduced,
3 construction conditions would introduce noise and visual disturbances that would affect the
4 recreation experience for anglers.

5 Due to the magnitude of the Plan Area and the 12-year duration of construction for this alternative,
6 this impact would be significant. However, mitigation measures are available to reduce impacts by
7 enhancing and ensuring access to nearby fishing sites and to address noise and visual disturbances.
8 Mitigation Measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d, AES-1e, AES-1f, and
9 AES-1g would help reduce or avoid impacts on recreational fishing occurring at construction sites.
10 With implementation of these mitigation measures, this impact would not be adverse.

11 **CEQA Conclusion:** The impact on recreational fishing opportunities as a result of constructing the
12 water conveyance facilities under Alternative 5A would be the same as Alternative 4. However,
13 impacts would be of slightly less magnitude because Alternative 5A would only include construction
14 of Intake 2, rather than Intakes 2, 3, and 5 as under Alternative 4. The combined impact on
15 recreational fishing opportunities would be considered significant. Implementing mitigation
16 measures REC-2, NOI-1a, NOI-1b, AES-1a, AES-1b AES-1c AES-1d, AES-1e, AES-1f, and AES-1g would
17 help reduce the impact on recreational fishing to a less-than-significant level by providing alternate
18 fishing sites, reducing noise generated during construction activities, and limiting changes in the
19 visual character of recreational fishing sites.

20 **Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites**

21 Please see Mitigation Measure REC-2 under Impact REC-2 in the discussion of Alternative 4.

22 **Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during 23 Construction**

24 Please see Mitigation Measure NOI-1a under Impact NOI-1 in the discussion of Alternative 4 in
25 Chapter 23, *Noise*.

26 **Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response 27 Tracking Program**

28 Please see Mitigation Measure NOI-1b under Alternative 1A in the discussion of Alternative 4 in
29 Chapter 23, *Noise*.

30 **Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to 31 Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New 32 Transmission Lines and Underground Transmission Lines Where Feasible**

33 Please see Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 4 in
34 Chapter 17, *Aesthetics and Visual Resources*.

35 **Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and 36 Sensitive Receptors**

37 Please see Mitigation Measure AES-1b under Impact AES-1 in the discussion of Alternative 4 in
38 Chapter 17, *Aesthetics and Visual Resources*.

1 **Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel**
2 **Material Area Management Plan**

3 Please see Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 4 in
4 Chapter 17, *Aesthetics and Visual Resources*.

5 **Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned**

6 Please see Mitigation Measure AES-1d under Impact AES-1 in the discussion of Alternative 4 in
7 Chapter 17, *Aesthetics and Visual Resources*.

8 **Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the**
9 **Extent Feasible**

10 Please see Mitigation Measure AES-1e under AES-1 in the discussion of Alternative 4 in Chapter
11 17, *Aesthetics and Visual Resources*.

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 see Mitigation Measure AES-1f under AES-1 in the discussion of Alternative 4 in Chapter
15 17, *Aesthetics and Visual Resources*.

16 **Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project**
17 **Landscaping Plan**

18 Please see Mitigation Measure AES-1g under AES-1 in the discussion of Alternative 4 in Chapter
19 17, *Aesthetics and Visual Resources*.

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:** The effects of operating the water conveyance facilities on recreational fishing
23 opportunities under Alternative 5A would be the same as described under Alternative 4, because the
24 same type of conveyance facilities would be built under Alternative 5A as under Alternative 4.
25 However, impacts would be of slightly less magnitude because Alternative 5A would only include
26 construction of Intake 2, rather than Intakes 2, 3, and 5 as under Alternative 4. Operation of
27 Alternative 5A may result in changes in entrainment, spawning, rearing, and migration. However,
28 effects on fish species that are popular for recreational fishing are not of a nature/level that will
29 adversely affect recreational fishing. While there are some significant impacts on specific non-listed
30 species, as discussed in Chapter 11, *Fish and Aquatic Resources*, they are typically limited to specific
31 rivers and not the population of that species as a whole. The effect is not adverse because it would
32 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 5A would be considered less than significant because any impacts on fish
35 and, as a result, impacts on recreational fishing, are anticipated to be isolated to certain areas and
36 would not affect the abundance of popular sport fish.

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:** The methodology for assessing effects on recreation at major upstream storage
5 reservoirs for Alternative 5A is the same as applied to Alternative 5 with the exception that
6 Alternative 5A is evaluated at ELT and compared to the No Action Alternative at ELT (2025),
7 whereas Alternative 5 was evaluated at LLT and compared to the No Action Alternative at LLT
8 (2060). The results of this assessment are shown in Tables 15-25 and 15-26.

9 **Existing Conditions (CEQA Baseline) Compared to Alternative 5A ELT (2025)**

10 Under Alternative 5A Operational Scenario B recreation thresholds would be exceeded more
11 frequently at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs relative to Existing
12 Conditions. These changes represent a greater than 10% increase in the frequency the recreation
13 thresholds are exceeded at Trinity, Shasta, Oroville, Folsom, and San Luis Reservoirs. However, as
14 discussed in Section 15.3.1, *Methods for Analysis*, these changes in SWP/CVP reservoir elevations are
15 primarily attributable to change in demand and other external factors such as sea level rise and
16 climate change. It is not possible to specifically define the exact extent of the changes due to
17 implementation of the action alternative using these model simulation results. Thus, the precise
18 contributions of the external factors to the total differences between Existing Conditions and
19 Alternative 5A ELT results cannot be isolated in this comparison. Please refer to the comparison of
20 the No Action Alternative (ELT) to Alternative 5A for a discussion of the potential effects on end-of-
21 September reservoir and lake elevations attributable to operation of Alternative 5A.

22 **Existing Conditions (CEQA Baseline) Compared to Alternative 5A LLT (2060)**

23 Existing Conditions compared to Alternative 5A LLT (2060) results are the same as described under
24 Alternative 5.

25 **No Action Alternative (ELT) Compared to Alternative 5A ELT (2025)**

26 The comparison of Alternative 5A ELT results to the No Action Alternative (ELT) condition most
27 closely represents changes in reservoir elevations that may occur as a result of operation of
28 Alternative 5A because both conditions show external factors such as change in demand and sea
29 level rise and climate change (see Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling
30 Technical Appendix*). As shown in Tables 15-25 and 15-26, Alternative 5A would result in ELT
31 changes in the frequency with which the end-of-September reservoir levels at Trinity, Shasta,
32 Oroville, Folsom, New Melones, and San Luis Reservoirs would fall below levels identified as
33 important water-dependent recreation thresholds. The CALSIM II modeling results indicate that
34 reservoir levels under Alternative 5A operations would either not change or would fall below the
35 individual reservoir recreation thresholds less frequently than under No Action Alternative (ELT)
36 conditions at Trinity, Shasta and Oroville Reservoirs. Operation of Alternative 5A would not
37 adversely affect water-dependent or water-enhanced recreation at these reservoirs. Overall, these
38 conditions represent improved recreation conditions under operation of Alternative 5A because
39 there would be slightly fewer years in which end-of-September reservoir levels would fall below the
40 recreation thresholds thus indicating better boating opportunities, when compared to No Action
41 Alternative (ELT) conditions.

1 The modeling result for Folsom Reservoir indicates there could be up to 4 additional years under
2 Alternative 5A, during which the reservoir level would fall below the reservoir's boating threshold
3 at the end of September. This is a greater than 10% change and would be considered a substantial
4 reduction in recreational boating opportunities at Folsom Reservoir. Shoreline fishing would still be
5 possible, and other recreation activities at the reservoir—picnicking, biking, hiking, and fishing—
6 would be available. The reduction in surface elevations at Folsom Reservoir would result in an
7 adverse impact on recreation occurring at the reservoir by restricting access by boaters. Mitigation
8 Measure REC-6 would be available to address this effect.

9 The modeling result for New Melones Reservoir indicates that there could be up to 1 additional year
10 under Alternative 5A, during which the reservoir level would fall below the reservoir's boating
11 threshold at the end of September. This is a greater than 10% change and would be considered a
12 substantial reduction in recreational boating opportunities at New Melones Reservoir. Shoreline
13 fishing would still be possible, and other recreation activities at the reservoir—picnicking, biking,
14 hiking, and fishing—would be available. The reduction in surface elevations at New Melones
15 Reservoir would result in an adverse impact on recreation occurring at the reservoir by restricting
16 access by boaters. Mitigation Measure REC-6 would be available to address this effect.

17 The modeling results for San Luis Reservoir indicate there could be up to 13 additional years under
18 Alternative 5A, during which the reservoir level would fall below the reservoir boating threshold at
19 the end of September relative to the No Action Alternative (ELT) condition. This is a greater than
20 10% change and would be considered a substantial reduction in recreational boating opportunities
21 at San Luis Reservoir. Shoreline fishing would still be possible, and other recreation activities at the
22 reservoir—picnicking, biking, hiking, and fishing—would be available. The reduction in surface
23 elevations at San Luis Reservoir would result in an adverse impact on recreation occurring at the
24 reservoir by restricting access by boaters. Mitigation Measure REC-6 would be available to address
25 this effect.

26 **CEQA Conclusion:** This impact on water-dependent and water-enhanced recreation opportunities at
27 north- and south-of-Delta reservoirs would be less than significant because, with the exception of
28 Folsom, New Melones, and San Luis Reservoirs, the CALSIM II modeling results indicate that
29 reservoir levels attributable to Alternative 5A operations would stay the same (Shasta Reservoir) or
30 would fall below the individual reservoir thresholds less frequently than under No Action
31 Alternative (ELT). These changes in reservoir and lake elevations would result in a less-than-
32 significant impact on recreation opportunities and experiences at Trinity, Shasta, and Oroville
33 Reservoirs. At Folsom, New Melones, and San Luis Reservoirs, the reduction in reservoir access by
34 boaters would be significant because they represent a greater than 10% change and could result in a
35 significant impact on recreation. Mitigation Measure REC-6 would reduce this impact to a less-than-
36 significant level

37 **Mitigation Measure REC-6: Provide a Temporary Alternative Boat Launch to Ensure
38 Access to San Luis Reservoir**

39 Consistent with applicable recreation management plans, DWR and Reclamation will work with
40 DPR to establish a boat ramp extension at or near the Basalt boat launch or other alternative
41 boat ramp site at San Luis Reservoir to maintain reservoir access in years when access becomes
42 unavailable.

1 **Table 15-25. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-**
 2 **of September Elevations below Recreation Thresholds) for Alternative 5A**

Scenario	Years ^b	Recreation Threshold ^a					
		Trinity Lake <2,270 ft elevation		Shasta Lake <967 ft elevation		Lake Oroville <700 ft elevation	
		Change relative to Existing Condition (CEQA/NEPA)	No Action Alternative (ELT)	Change relative to Existing Condition (CEQA/NEPA)	No Action Alternative (ELT)	Change relative to Existing Condition (CEQA/NEPA)	No Action Alternative (ELT)
Existing Condition (CEQA)	21			17		17	
No Action Alternative (ELT)	32	11		22	5	26	9
Alternative 5A (ELT)							
Operational Scenario B	29	8	-3	22	5	0	21
Operational Scenario B	43	22		29	12		26
Alternative 5A (LLT)							

^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 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 Alternative ELT). A positive change would indicate more years with reduced recreation opportunities.

1 **Table 15-26. Summary of Years with Reduced SWP and CVP Reservoir Recreation Opportunities (End-**
 2 **of September Elevations below Recreation Thresholds) for Alternative 5A**

Scenario	Recreation Threshold ^a									
	Folsom Lake <405 ft elevation			New Melones Lake <900 ft elevation			San Luis Reservoir <360 ft elevation			
	Years ^b	Change relative to Existing Condition	Change relative to No Action Alternative ELT (CEQA/ NEPA)	Years ^b	Change relative to Existing Condition	Change relative to No Action Alternative ELT (CEQA/ NEPA)	Years ^b	Change relative to Existing Condition	Change relative to No Action Alternative ELT (CEQA/ NEPA)	
Existing Condition (CEQA)	22			9			3			
No Action (ELT)	33	11		8	-1		9	6		
Alternative 5A (ELT)										
Operational Scenario B	37	15	4	9	0	1	22	19	13	
Alternative 5A (LLT)										
Operational Scenario B	44	22		12	3		31	27		

^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 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 ELT). 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 **Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a**
 5 **Result of Maintenance of the Proposed Water Conveyance Facilities**

6 **NEPA Effects:** The effects of maintaining the water conveyance facilities on water-based recreation
 7 under Alternative 5A would be the same as described under Alternative 4. However, impacts would
 8 be of slightly less magnitude because Alternative 5A would only include construction of Intake 2,
 9 rather than Intakes 2, 3, and 5 as under Alternative 4. These potential effects would occur as a result
 10 of regular maintenance activities of the intakes. The effect on boating is not considered adverse
 11 because the boat passage around the intakes would be maintained and disruption of boat access in
 12 the immediate vicinity of the intakes would be short-term.

13 **CEQA Conclusion:** Effects on recreation resulting from the maintenance of intake facilities would be
 14 short-term and intermittent and would not result in significant impacts on boat passage, navigation,
 15 or water-based recreation within the vicinity of the intakes.

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:** The effects of maintaining the water conveyance facilities on land-based recreation
4 under Alternative 5A would be the same as described under Alternative 4. However, impacts would
5 be of slightly less magnitude because Alternative 5A would only include construction of Intake 2,
6 rather than Intakes 2, 3, and 5 as under Alternative 4. Maintenance activities would be short-term
7 and intermittent, occur within the immediate vicinity of water conveyance facility, and are not
8 expected to generate noise that would distract from adjacent recreation opportunities. Therefore,
9 there would be no effects on recreation opportunities as a result of maintenance of the proposed
10 water conveyance facilities.

11 **CEQA Conclusion:** Maintenance of conveyance facilities would be short-term and intermittent and
12 would not result in any changes to land-based recreational opportunities. Therefore, there would be
13 no impact and no mitigation would be required.

14 **Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of**
15 **Implementing Environmental Commitments 3, 4, 6, 7-12, 15, and 16**

16 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
17 5A would result in effects on fishing opportunities similar to those described for Alternative 4. The
18 magnitude of the effects occurring under Alternative 5A would be much less than under Alternative
19 4 because the total acreage that would be affected by the conservation and stressor reduction
20 actions (Environmental Commitments 3, 4, 6, 7-12, 15, and 16) occurring in the Plan Area would be
21 much less than the conservation measures proposed under Alternative 4. Construction, operation,
22 and maintenance of the conservation and stressor reduction components could have affects that
23 would be similar in nature to those discussed above for construction, operation, and maintenance of
24 proposed water conveyance facilities. Although similar in nature, the potential intensity of any
25 effects would likely be substantially lower because the nature of the activities associated with
26 implementing the conservation and stressor reduction components would be much less when
27 compared to Alternative 4. In addition, the conservation and stressor reduction components would
28 be expected to result in long-term benefits to aquatic species.

29 During the implementation stage, construction activity associated with the conservation and
30 stressor reduction components could result in adverse effects on recreation by temporarily or
31 permanently limiting access to fishing sites and disturbing fish habitat. The impact on fishing
32 opportunities as the conservation and stressor reduction components are constructed would not be
33 considered adverse because the actions would be small and localized. In the long term, the impact
34 on fishing opportunities would be considered beneficial because the conservation and stressor
35 reduction measures could benefit aquatic habitat and fish abundance.

36 **CEQA Conclusion:** Conservation and stressor reduction components would be expected to improve
37 fishing opportunities within the Plan Area. The adverse and beneficial impacts would be similar to
38 those described under Alternative 4, however the extent of those impacts would be much less
39 because the restoration actions occurring under Alternative 5A would include much less acreage
40 and a smaller geographic scope than the conservation measures described under Alternative 4. The
41 impact on fishing opportunities as the conservation and stressor reduction components are
42 constructed would be considered less than significant because the actions would be small and
43 localized. In the long term, the impact on fishing opportunities would be considered beneficial

1 because the conservation and stressor reduction measures could benefit aquatic habitat and fish
2 abundance.

3 **Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities**
4 **as a Result of Implementing Environmental Commitments 3, 4, 6, 7-12, 15, and 16**

5 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
6 5A would result in effects on boating-related recreation similar to the effects discussed under
7 Alternative 4 for implementing conservation measures. However, the extent of the effects on boating
8 under Alternative 5A would be much less because the total acreage that would be affected by the
9 conservation and stressor reduction actions occurring in the Plan Area would be much less when
10 compared to Alternative 4. Restoration of channel margin enhancement, riparian natural
11 community, and nontidal marsh could provide increased boating opportunities within the study
12 area.

13 **CEQA Conclusion:** Channel modification and other activities associated with implementation of
14 some of the conservation and stressor reduction components may limit some opportunities for
15 boating and boating-related recreation by reducing the extent of navigable water available to
16 boaters. However, overall the conservation and stressor reduction components would also lead to
17 an enhanced boating experience by expanding the extent of waterways available to boaters. Overall,
18 these measures would not be anticipated to result in a long-term reduction in boating-related
19 recreation activities; therefore, this impact is considered less than significant.

20 **Impact REC-11: Result in Long-Term Reduction in Upland Recreational Opportunities as a**
21 **Result of Implementing Environmental Commitments 3, 4, 6, 7-12, 15, and 16**

22 **NEPA Effects:** Implementing conservation and stressor reduction components as part of Alternative
23 5A would result in effects on upland recreational opportunities similar to Alternative 4. However,
24 the extent of these effects occurring under Alternative 5A would be much less than under
25 Alternative 4 because the total acreage that would be affected by the conservation and stressor
26 reduction actions occurring in the Plan Area would be much less. The actions could benefit the same
27 types of recreation opportunities (e.g., hunting, hiking, walking, wildlife viewing, botanical viewing,
28 nature photography, picnicking, and sightseeing) as described for Alternative 4, however the
29 recreational benefits accruing from these actions would be much less because of the smaller acreage
30 that would be restored. Conversely, the conservation and stressor reduction actions could adversely
31 affected established recreation activities that would no longer be possible or compatible with
32 restoration. These potential adverse effects would be similar to those described under
33 Alternative 4, however the effects are expected to be much less because of the smaller total acreage
34 that would be restored.

35 Implementing the conservation and stressor reduction components could result in an adverse effect
36 on recreation opportunities by reducing the extent of upland recreation sites and activities available
37 to hiking, nature photography, or other similar activity. However, implementation of the measures
38 would also restore or enhance new potential sites for upland recreation thereby potentially
39 improving the quality of recreational opportunities.

40 **CEQA Conclusion:** Similar to Alternative 4, site preparation and earthwork activities occurring
41 under Alternative 5A required to implement the conservation and stressor reduction components
42 could temporarily limit or disrupt opportunities for upland recreational. These impacts on upland
43 recreational opportunities would be considered less than significant because—similar to Alternative

1 4—environmental commitments incorporated into the project would require the project
2 proponents to consult with CDFW to expand wildlife viewing, angling, and hunting opportunities as
3 an element of the conservation and stressor reduction components. These components would not be
4 anticipated to result in a substantial long-term disruption of upland recreational activities; thus, this
5 impact is considered less than significant.

6 **Impact REC-12: Compatibility of the Proposed Water Conveyance Facilities and Other**
7 **Environmental Commitments with Federal, State, or Local Plans, Policies, or Regulations**
8 **Addressing Recreation Resources**

9 **NEPA Effects:** Similar to Alternative 5A, constructing the water conveyance facilities and
10 implementing the conservation and stressor reduction components under Alternative 5A could
11 result in incompatibilities with plans and policies that address recreation. A number of plans and
12 policies that coincide with the study area provide guidance for recreation resource issues are
13 overviewed in Section 15.2, *Regulatory Setting*. This overview of plan and policy compatibility
14 evaluates whether Alternative 5A is compatible or incompatible with such enactments, rather than
15 whether impacts are adverse or not adverse or significant or less than significant. If the
16 incompatibility relates to an applicable plan, policy, or regulation adopted to avoid or mitigate
17 recreation effects, then an incompatibility might be indicative of a related significant or adverse
18 effect under CEQA and NEPA, respectively. Such physical effects of Alternative 5A on recreation
19 resources are addressed in Impacts REC-1 through REC-11, and in other chapters, such as Chapter
20 17, *Aesthetics and Visual Resources*, and Chapter 23, *Noise*. A summary of the compatibility
21 evaluations related to recreation resources for plans and policies is contained in the analysis of
22 Alternative 4 and is applicable to Alternative 5A. Generally the evaluation found that implementing
23 Alternative 5A would not be compatible with some provisions of The Johnston-Baker-Andal-
24 Boatwright Delta Protection Act of 1992 and some policies of the Sacramento, San Joaquin, Contra
25 Costa, and Alameda Counties general plans that address recreation.

26 **CEQA Conclusion:** The incompatibilities identified in the analysis indicate the potential for a
27 physical consequence to the environment. The physical effects are discussed in Alternative 5A,
28 impacts REC-1 through REC-11, and no additional CEQA conclusion is required related to the
29 compatibility of the alternative with relevant plans and polices.

30

15.3.5 Cumulative Analysis

31 This section analyzes the potential for the alternatives to contribute to cumulative impacts on
32 recreational facilities, opportunities, and resources in the Delta. This section first describes the
33 cumulative setting for recreation in the Delta to identify the effects of other foreseeable projects and
34 programs on recreational opportunities and resources. This section then describes the contribution
35 of the impact mechanisms associated with the alternatives to determine if they would make a
36 considerable contribution to the impacts on recreation in the Delta. Table 15-27 summarizes other
37 foreseeable projects and programs that may affect recreation resources to provide a context for the
38 evaluation of the cumulative effects on recreation opportunities. This list has been drawn from a
39 more substantial compilation of past, present, and reasonably foreseeable programs and projects
40 included in Appendix 3D, *Defining Existing Conditions, the No Action Alternative, No Project*
41 *Alternative, and Cumulative Impact Conditions*.

1 **Table 15-27. 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	Final EIS/EIR 2011.	The plan 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	Completed in 2012.	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.	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)
National Marine Fisheries Service and U.S. Fish and Wildlife Service	2008 and 2009 Biological Opinions	Ongoing.	The Biological Opinions establish certain reasonable and prudent alternatives requiring habitat restoration to be implemented.	Construction of habitat may temporarily disrupt recreational access to Delta waterways and fishing locations in the footprint of proposed habitat restoration areas.
Department of Water Resources and Suisun Marsh Preservation Agreement agencies	Miens Landing Restoration	Currently under study.	Restoration of duck clubs to tidal marsh.	Restoration could adversely affect waterfowl hunting opportunities and potentially benefit non-consumptive recreation.
Department of Water Resources	Cache Slough Area Restoration	Currently under study.	Restoration of lands within the Cache Slough Complex located in the Delta.	Conversion of lands from agriculture to wildlife habitat could benefit non-consumptive recreation. This project is examined as part of the BDCP alternatives and effects further described in the Draft BDCP.
Department of Water Resources	California Water Action Plan	Initiated in January 2014.	This plan lays out a roadmap for the next 5 years for actions that would fulfill 10 key themes. In addition, the plan describes certain specific actions and projects that call for improved water management throughout the state.	Potential for beneficial and adverse effects on recreation resources.
Delta Conservancy	California EcoRestore	Initiated in 2015.	This program will accelerate and implement a suite of Delta restoration actions for up to 30,000 acres of fish and wildlife habitat by 2020.	Potential for enhanced recreation experience related to improved fish and wild life habitat conditions.

15.3.5.1 Cumulative Effects of the No Action Alternative

The cumulative effect of ongoing projects, programs, and plans under the No Action Alternative is not anticipated to substantially change recreation opportunities or experiences in the Delta region. Effects on recreation would either be beneficial, or short-term disruptions that would be considered less than significant. Temporary adverse effects on water-dependent recreation include restrictions on boat passage and navigation and a decrease in recreational fishing as a result of loss of access to the water resources during construction and operation of in-water projects. Environmental conditions occurring within upstream rivers and reservoirs, the Delta, and ocean may adversely affect the abundance of sport-fish harvested within the Delta. Ongoing resources management plans may benefit water-dependent recreation by controlling nonnative aquatic vegetation, which would help maintain access to some Delta waterways that could otherwise be inaccessible because of the presence of dense aquatic vegetation. Ongoing restoration and environmental enhancement projects may benefit non-consumptive recreation within the Delta and enhance wildlife viewing, non-motorized boating, and other passive recreation opportunities by increasing wildlife habitat and public access. Land-based recreation activities are expected to increase in response to changes in local and regional demand and land management plans that may lead to the installation of additional recreational facilities. Projects and programs upstream of the Delta would have beneficial effects on recreation opportunities and experiences by increasing the abundance of sport fish. Conditions under the No Action Alternative would have more years in which reservoir levels fall below the recreation threshold relative to the existing condition due to sea level rise, climate change, and future no action conditions. The resulting inundation of many water-based facilities in the Delta would cause long-term adverse effects on recreation opportunities and experiences, but it is not possible to specifically define the exact extent of the changes due to future no action operations using model simulation results.

This survey of ongoing and foreseeable projects and programs in the Delta reveals that there is not an ongoing or cumulatively significant loss of recreational resources or opportunities in the Delta. While some projects such as levee repair projects or habitat restoration may temporarily impair or disrupt particular recreational facilities or locations, upon completion such projects do not result in a loss of recreational resources. Habitat restoration projects such as the creation of additional tidal marsh tend to have a net benefit on some recreational resources such as fishing opportunities because these projects increase the abundance of fish and areas that are useful for fishing. In addition, temporary effects simply displace recreational activities to alternative venues that are abundant in the Delta. The Delta Protection Commission performed an inventory of recreational facilities (1997), which describes 36 identified fishing access sites in the Delta and 106 marinas in the Delta.

Foreseeable land development in the region may result in some loss of recreational resources, however under typical general plan policies and state law, payment of in-lieu fees or dedication of land for parks and recreation is required for subdivisions for development (e.g., Cal. Government Code Section 66477).

The Delta and vicinity are within a highly active seismic area, with a generally high potential for future earthquake events along nearby and/or regional faults, and with the probability for such events increasing over time. Based on the location, extent and non-engineered nature of many existing levee structures in the Delta area, the potential for significant damage to, or failure of, these structures during a local seismic event is generally moderate to high. Levees constructed on liquefiable foundations are expected to experience large deformations (in excess of 10 feet) under a

1 moderate to large earthquake in the region. Earthquake damage could result in breaching/failure of
2 existing levees within the Delta area, with a substantial number of these structures exhibiting
3 moderate to high failure probabilities. The most immediate and significant effect to water quality
4 under such a scenario would be the influx of large volumes of seawater and/or brackish water into
5 the Delta, which would alter the “normal” balance of freshwater/seawater flows and result in
6 flooding of the associated islands. The corresponding shift in Delta water quality conditions would
7 be characterized by an increase in salinity levels, including specific associated constituents such as
8 bromide (which affects total dissolved solids concentrations and can contribute to the formation of
9 undesirable chemical byproducts in treated drinking water). (See Appendix 3E, *Potential Seismic and*
10 *Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion). This could result in
11 permanent displacement of existing, well-established public use or private commercial recreation
12 facilities as well as result in long-term reduction of recreation opportunities, recreational navigation
13 opportunities and recreational fishing opportunities. To reclaim land or rebuild levees after a
14 catastrophic event due to climate change or a seismic event would potentially also result in adverse
15 impacts to recreational resources. Although similar risks would occur under implementation of the
16 action alternatives, these risks may be reduced by project-related levee improvements along with
17 those projects identified for the purposes of flood protection in Table 15-27.

18 **15.3.5.2 Concurrent Project Effects**

19 Construction of the water conveyance facilities would have a wide range of significant adverse
20 impacts on recreation occurring within the Plan Area. These include disruption of recreation
21 activities occurring at formal public and private recreation sites, restricting boat access from some
22 Delta channels, and reducing sport-fishing opportunities occurring within the Delta. These impacts
23 were considered significant because of the importance of the recreation facility being affected or the
24 long duration of construction. These impacts could be reduced, but not to a less-than-significant
25 level by introducing a broad range of mitigation measures which address both the direct loss of
26 access (REC-2) or indirect changes in environmental conditions including changes in visual
27 character of the Delta (AES-1a through AES-1g and AES-4b AES-4c, and AES-4d), noise generated
28 during construction (NOI-1a and NOI-1b), and conflicts with construction traffic (TRANS-1a through
29 TRANS 1c). Other impacts on recreation were determined to not be significant.

30 Operation of the alternatives would also adversely impact recreation, including water-dependent
31 activities occurring at major CVP and SWP water storage reservoirs and potential disruption of
32 recreation within the Delta as a result of maintaining the water conveyance facilities. With the
33 exception of San Luis Reservoir, operation of the alternatives would not substantially reduce
34 recreation opportunities occurring at the major water storage reservoirs. The impact on boating at
35 San Luis Reservoir would be considered significant because the reservoir surface elevation would
36 fall below levels required to launch boats. This impact would be reduced to a less-than-significant
37 level by implementing Mitigation Measure REC-6.

38 Conservation Measures 2–4 and CM6–CM11, or the similar Environmental Commitments under
39 Alternatives 4A, 2D, and 5A, would also adversely impact recreation occurring within the Delta.
40 However, the Environmental Commitments for Alternatives 4A, 2D, and 5A include substantially less
41 acreage for restoration than would be restored under the BDCP alternatives with CM2–CM21;
42 therefore, the impacts related to restoration would be less under Alternatives 4A, 2D, and 5A than
43 under the BDCP alternatives. Conservation Measures and Environmental Commitments would both
44 result in a significant impact on fishing opportunities and boating occurring within the Delta, but
45 would be reduced to a less-than-significant level by implementing the mitigation measures

described above. The conservation measures are not expected to contribute to other impacts on recreation that would occur as a result of construction of the water conveyance facilities. These conservation measures would also not affect the operation of the alternatives and, consequently, would not affect recreation opportunities at major CVP and SWP water storage reservoirs.

The combined impact of constructing the water conveyance facility with implementing CM2–CM4 and CM6–CM11, or the similar Environmental Commitments under Alternatives 4A, 2D, and 5A, would increase the impacts on recreation resources and result in a significant impact on recreation within the Plan Area. These impacts include loss of boating and fishing opportunities. Concurrent recreation effects of conveyance facilities and Environmental Commitments under Alternatives 4A, 2D, and 5A would likely be much less than under BDCP alternatives because restoration actions under the non-HCP alternatives would be reduced compared with BDCP alternatives. However, the concurrent impacts would still be significant. For example, although Alternative 4 includes 65,000 acres of tidal wetland restoration, Alternative 4A includes 295 acres of tidal wetland restoration. While that is substantially less acreage, the 295 acres of restoration, when paired with the construction of the conveyance facilities, both in the Delta and Plan Area, would still result in a reduction of recreational navigation opportunities during construction of the conveyance facilities (Impact REC-3). When considered concurrently, impacts on water-based and navigational recreation would be significant. The long-term reduction of recreational opportunities and experiences (Impact REC-2) as a result of constructing the facilities and restoration would also be significant because construction would last more than 2 years. Because impacts on recreational fishing opportunities from construction of the water conveyance facilities (Impact REC-5) and from implementation of conservation measures/Environmental Commitments (Impact REC-9) would be less than significant, it is not anticipated that the combination of these activities would result in significant impacts. Similarly, because impacts on land-based and upland recreational opportunities from operation of the water conveyance facilities (Impact REC-8) and from implementation of conservation measures/Environmental Commitments (Impact REC-11) would be less than significant, it is not anticipated that the combination of these activities would result in significant impacts.

15.3.5.3 Cumulative Effects of the Action Alternatives

The following analysis reviews the contribution of the alternatives to this cumulative setting. This analysis first briefly reviews the contribution of impacts that are not adverse. While, in some instances, individual effects that are less than significant may cumulatively result in significant effects that are “cumulatively considerable” (see CEQA Guidelines Section 15065[a][3]), here, because there is not a cumulatively significant loss of recreational resources or opportunities in the Delta, these effects do not have the potential to result in a cumulatively considerable impact. Accordingly, the contribution of the following impacts are not carried forward for detailed analysis for their contribution to the cumulative setting.

- **Impact REC-5: Result in long-term reduction of recreational fishing opportunities as a result of the operation of the proposed water conveyance facility**
- **Impact REC-6: Cause a change in reservoir or lake elevations resulting in substantial reductions in water-based recreation opportunities and experiences at north- and south-of-Delta reservoirs**
- **Impact REC-7: Result in long-term reduction in water-based recreation opportunities as a result of maintenance of the proposed water conveyance facilities**

- 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 • **Impact REC-9: Result in long-term reduction in fishing opportunities as a result of**
4 **implementing CM2–CM21**
- 5 • **Impact REC-10: Result in long-term reduction in boating-related recreation opportunities**
6 **as a result of implementing CM2–CM21**
- 7 • **Impact REC-11: Result in long-term reduction in upland recreational opportunities as a**
8 **result of implementing CM2–CM21**

9 Impact REC-5 analyzes the potential for long-term reduction of recreational fishing opportunities as
10 a result of operating the proposed water conveyance facility. Entrainment, spawning, rearing and
11 migration may affect non-covered fish species that are popular for recreational fishing, but will
12 typically be limited to specific rivers and not affect the population of a species as a whole, so it
13 would not adversely affect recreational fishing.

14 Impact REC-6 analyzes the potential effects on water-based recreation at north and south-of-Delta
15 reservoirs based on the predicted future operational conditions implemented under the BDCP
16 modeled through CALSIM. Water-based recreation is primarily dependent on water levels in the
17 relevant reservoirs and accordingly is not subject to cumulative effects in same manner as other
18 resources. The impact analysis for REC-6 incorporates mitigation where necessary, and identifies no
19 adverse effects after mitigation.

20 Impact REC-7 describes the potential for intermittent maintenance of conveyance facilities to
21 disrupt water-based recreation. Because these activities are transitory in nature and would not
22 substantially affect adjacent recreational opportunities, they would not combine with the effects of
23 other projects to result in adverse cumulative effects on recreation.

24 Impact REC-8 analyzes the potential effect on land-based recreation associated with maintenance of
25 proposed conveyance facilities. These activities would occur in the conveyance right-of-way and
26 therefore would not disrupt adjacent or nearby recreational facilities. Because these effects would
27 not occur in recreational opportunity areas they would not have the potential to combine with the
28 effects of other projects to result in cumulative and adverse effects on recreation.

29 Impact REC-9 describes the potential changes to fishing opportunities that would result from the
30 conservation components. Because implementing the proposed conservation components would be
31 expected to provide beneficial effects on aquatic habitat and fish abundance this impact would result
32 in a beneficial effect and does not have the potential to contribute to cumulatively significant
33 impacts on fishing.

34 Impact REC-10 describes the effect that implementation of conservation measures would have on
35 recreational boating opportunities. During construction, implementation of conservation measures
36 may have localized adverse effects on recreational boating, but this effect would be transitory and is
37 not considered significant. During the long-term, conservation measures would lead to an enhanced
38 boating experience by expanding the extent of navigable waterways available to boaters, improving
39 and expanding boat launch facilities, and removing nonnative vegetation that restricts or obstructs
40 navigation. Because construction-related effects are temporary and because the overall effect is
41 beneficial, this impact does not have the potential to contribute to a cumulative effect on
42 recreational boating, given the diversity and abundance of alternative boating venues in the Delta.

Impact REC-11 describes the effect of conservation measures on upland recreation opportunities. While restoration activities may disrupt or displace some locations for upland recreation such as upland hiking, nature viewing, and photography, the conservation measures would also restore or enhance new potential sites for upland recreation and the measures would improve the quality of existing recreational opportunities adjacent to areas modified by the conservation measures. The combined effect on upland recreation is considered less than significant. Because the combined effect of the conservation measures would not diminish upland recreation opportunities, this impact would not contribute to cumulative effects on upland recreation.

Impact REC-16: Cumulative Displacement of Recreational Facilities

Alternative 9

NEPA Effects: Construction of Alternative 9 fish screens and intakes for CM1 would result in the direct permanent loss of well-established recreation facilities: Boathouse Marina, Walnut Grove public guest dock, and Boon Dox guest dock, as described in Impact REC-1. While this project-level effect is adverse, it would not contribute to a cumulatively considerable loss of recreational resources in the Delta. The 106 identified marinas in the Delta provide an abundance of alternative venues for boating and mooring (Delta Protection Commission 1997). Foreseeable projects and programs identified in Table 15-27 do not typically identify adverse effects on recreation that could combine with this impact to result in a cumulative and adverse effect. This impact would not contribute to a cumulative and adverse loss of recreational facilities.

CEQA Conclusion: Because the Delta has an abundance of alternative venues for boating and mooring, the loss of recreational facilities under Alternative 9 would not contribute to a cumulatively significant loss of recreational resources.

Impact REC-17: Temporary Disruption of Recreation Opportunities and Experiences as a Result of Construction Projects in the Delta

All Alternatives

NEPA Effects: Construction of water conveyance facilities would result in temporary and adverse disruptions of recreational opportunities and experiences under all alternatives, as described in Impact REC-2. Specific effects include construction noise that would diminish the quality of the recreational experience and long-term loss of access to some facilities. While some mitigation is available such as noise abatement, this mitigation would not avoid all effects in all instances. Accordingly, Impact REC-2 is considered adverse for these alternatives. While the project-level impact would be adverse, the temporary loss of recreational facilities and quality would simply displace recreation to alternate venues that are accessible or higher in quality. While other ongoing projects and programs may also temporarily displace or diminish recreational opportunities and experiences, the size of the Delta and the diversity of recreational venues identified in the inventory of recreational facilities indicates the combined effect would not be cumulative and adverse (see Delta Protection Commission 1997). In addition, habitat restoration occurring under all alternatives and cumulative projects would also benefit non-consumptive recreation opportunities within the Delta.

CEQA Conclusion: Because the Delta has a diversity of fishing and boating venues, the temporary loss of recreation facilities and recreational quality associated with the alternatives would not contribute to a cumulatively considerable effect. Temporary loss of access and diminished

1 recreational quality would be expected to displace recreation to abundant alternative venues in the
2 region. The cumulative recreation impact of the projects and alternatives is not considered
3 significant because of the diversity of recreation opportunities throughout the Delta, the temporary
4 nature of most cumulative impacts and the benefit that will result from cumulative projects
5 implemented under the California Water Action Plan (CWAP) and California EcoRestore program.
6 Therefore, the proposed project would not result in a cumulatively considerable contribution to a
7 cumulatively significant impact on recreational opportunities and resources.

8 Impact Rec-18: Temporary Alteration of Recreational Navigation

9 All Alternatives

10 **NEPA Effects:** Impact REC-3 identifies adverse effects on recreational navigation under all project
11 alternatives. Specific effects include navigational delays and disruption of some high-speed
12 recreation such as waterskiing and wakeboarding. While this effect would be temporary, it is
13 considered adverse because in the affected locations, the recreation activities would be entirely
14 displaced. Although the effects on boating occurring during construction are temporary, they would
15 be considered adverse because in the affected locations, the recreation activities would be entirely
16 displaced. Mitigation Measure TRANS-1a is available to address this adverse effect. The other
17 cumulative projects included in Table 15-27 are primarily land based and would not necessarily
18 contribute to a combined adverse effect on boating that would occur during construction of the
19 water conveyance facilities. While it is possible that other foreseeable projects may result in
20 localized disruption of recreational navigation, these effects would not combine to result in a
21 cumulative and adverse loss of recreational navigation opportunities. Because motorized boaters
22 are by nature mobile, and because the Delta offers alternative venues for high-speed boating, this
23 recreational activity could be pursued at other locations, which are anticipated to be available and
24 abundant. The California Delta Chambers and Visitors Bureau identifies numerous venues for
25 waterskiing and wakeboarding (2010b).

26 **CEQA Conclusion:** The projects shown in Table 15-27 in combination with each action alternative
27 would result in significant and unavoidable temporary effects on recreational navigation under all
28 alternatives. Because the Delta offers numerous alternate venues for wakeboarding and waterskiing,
29 and because other foreseeable projects and programs do not identify significant effects on water-
30 based recreation, this impact would not contribute to a cumulatively considerable effect on
31 recreational navigation. Mitigation Measure TRANS-1a would help reduce the impacts on boating
32 occurring during construction but not to a less-than-significant level.

33 Impact REC-19: Temporary Effects on Recreational Fishing

34 All Alternatives

35 **NEPA Effects:** Under all alternatives, effects on sport fish species would be less than significant, but
36 construction would result in a temporary but long-term disruption of some recreational fishing
37 locations, as described in Impact REC-4. The alternatives vary primarily according to the number of
38 intakes, and thus the range of fishing locations that would be affected. Although the potential impact
39 on covered and non-covered sport fish species from construction activities would not be adverse
40 because the action alternatives would include several environmental commitments to avoid and
41 minimize possible water quality and other temporary construction-related disturbances, the overall
42 experience for anglers would be degraded because of elevated noise and degraded visual conditions.

1 In some instances, construction would last up to 5 years, resulting in a temporary but adverse
2 disruption of recreational fishing for anglers and other recreational fishermen. Other foreseeable
3 projects and programs may result in some temporary effects on fishing quality at localized fishing
4 opportunities resulting from construction noise or loss of access. However, the Delta contains a wide
5 range of identified fishing venues. The Delta Protection Commission identified 36 fishing access
6 points in the Delta (Delta Protection Commission 1997). Additionally, informal access points also
7 likely occur throughout the Delta. This cumulative fishing access impact is considered not adverse
8 because of the amount and diversity of recreational fishing opportunities throughout the Delta, the
9 temporary nature of most cumulative impacts and the benefit that will result from cumulative
10 projects implemented under the CWAP and California EcoRestore program.

11 Mitigation Measures REC-2, AQUA-1a, AQUA-1b, NOI-1a, NOI-1b, and AES-1a through AES-g are
12 available to reduce the adverse effect on recreational fishing.

13 **CEQA Conclusion:** The BDCP would result in significant and unavoidable temporary effects on
14 fishing by disrupting access or degrading fishing quality through construction-generated noise
15 under all alternatives. Cumulative fishing access impacts are considered less than significant
16 because combined cumulative projects would mainly include temporary land-based construction
17 effects, fishing access in the Delta is plentiful and other cumulative projects such as those
18 implemented under the CWAP and California EcoRestore program could benefit fishing and other
19 recreational opportunities in the Delta.

20 **Impact REC-20: Permanent Alteration of Recreational Boat Navigation**

21 **Alternative 9**

22 **NEPA Effects:** Under Alternative 9 the construction of conveyance facilities would result in adverse
23 effects on recreational boat navigation as a result of the construction of operable gates, as described
24 in Impact REC-14. While construction of boat passage facilities and implementation of Mitigation
25 Measures REC-14a and REC-14b would reduce this effect, the effect would remain adverse. While
26 most foreseeable projects in the Delta would not result in permanent alteration or disruption of
27 navigation, some planned projects such as Franks Tract, may result in adverse effects on
28 recreational boating through construction of similar operable gates (California Department of Water
29 Resources 2009a:16). Collectively these effects would result in a cumulative and adverse alteration
30 of recreational boat navigation.

31 **CEQA Conclusion:** Alternative 9 would result in a significant and unavoidable impact associated
32 with alteration of recreational navigation where operable gates would be constructed. While some
33 boat passage facilities would be constructed, delays would nonetheless result. Because the
34 construction of other operable gates at Franks Tract has the potential to disrupt recreational boat
35 navigation a significant cumulative condition may result from the combined effects of these projects.
36 While construction of boat passage facilities and implementation of Mitigation Measures REC-14a
37 and REC-14b would reduce the contribution of the BDCP, Impact REC-14 would remain significant
38 and unavoidable, thus contributing to a cumulatively significant impact.

1 Impact REC-21: Changes to Other Recreation Opportunities

2 Alternative 9

3 **NEPA Effects:** Under Alternative 9 permanent speed zone restrictions in the vicinity of operable gate
 4 and boat passage facilities would limit high-speed recreation opportunities, such as waterskiing,
 5 wakeboarding, and tubing at three locations, as described in Impact REC-13. Table 15-18 identifies
 6 specific facilities that would be affected. Additional effects include the potential loss of one mooring
 7 facility and one location supporting pass-through traffic. While project-level effects would be
 8 reduced with Mitigation Measures REC-14a and REC-14b, the effect would remain adverse despite
 9 mitigation. However, because there are numerous alternative venues that support recreational high-
 10 speed boating, this loss is not expected to contribute to a cumulatively significant effect. In addition,
 11 most other foreseeable projects and programs identify impacts on recreation as less-than-
 12 significant. Because there are alternative venues for waterskiing and wakeboarding, and because
 13 other foreseeable projects would not result in a cumulative loss of these opportunities, this impact
 14 would not be adverse.

15 **CEQA Conclusion:** Alternative 9 would result in significant and unavoidable effects on high-speed
 16 recreational boating at three locations where speed-restrictions would be enforced, and would also
 17 result in the loss of one mooring facility and one portion of Threemile Slough to boat traffic. Because
 18 the number of facilities lost is small in relation to the number of recreational venues in the Delta,
 19 and because other foreseeable projects identified in Table 15-27 above do not typically identify
 20 significant effects on recreation, this contribution to the loss of venues for high-speed boating would
 21 not be a cumulatively considerable contribution to a cumulatively significant impact.

22 15.4 References Cited

23 15.4.1 Printed References

24 Alameda County. 2000. *East County Area Plan*. Oakland, CA. Adopted May 1994. Modified by passage
 25 of Measure D, effective December 22, 2000. December. Available:
 26 <<http://www.acgov.org/cda/planning/generalplans/>>. Accessed: January 12, 2012.

27 American River Parkway Foundation. 2009. *American River Parkway*. Map. Carmichael, CA.
 28 Available: <http://www.arparkway.org/pdf_files/ARPmap.pdf>. Accessed: January 30, 2012.

29 American Whitewater. 2012. *River List*. Available: <<http://www.americanwhitewater.org/content/River/search-limited/>>. Accessed: January 25, 2012.

31 Baxter et al. 2010. *Interagency Ecological Program 2010 Pelagic Organism Decline Work Plan and
 32 Synthesis of Results*. San Franscio, CA.

33 Bureau of Land Management. 2012. *River Recreation*. Redding Field Office, Redding, CA. Available:
 34 <<http://www.blm.gov/ca/st/en/fo/redding/recreationmain/reddingrecreationrivers.html>>.
 35 Accessed: January 25, 2012.

36 Bureau of Reclamation. 2009. *Delta-Mendota Canal/California Aqueduct Intertie. Final Environmental
 37 Impact Statement*. November. Sacramento, CA: Mid-Pacific Region.

- 1 ———. 2010. *New Melones Resource Management Plan/Environmental Impact Statement (RMP/EIS)*.
 2 Available: <http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2536>. Accessed:
 3 January 26, 2012.
- 4 ———. 2012. *Planning Your Visit*. Available: <http://www.usbr.gov/mp/ccao/newmelones/planning_visit.html#facility>. Accessed: January 26, 2012.
- 5 Bureau of Reclamation and California Department of Parks and Recreation. 2005. *San Luis Reservoir State Recreation Area Resource Management Plan/Preliminary General Plan Draft Environmental Impact Statement/Environmental Impact Report*. Public Review Draft. April. Fresno, CA, and Sacramento, CA.
- 6 Burgarino, P. 2009. Derby Reels Eager Sturgeon Anglers to Bay Point. *Oakland Tribune*. January 31.
- 7 California Delta Chambers and Visitor's Bureau. 2009a. *Welcome to the California Delta*. Available:
 8 <<http://www.californiadelta.org/index.htm>>. Accessed: January 19, 2012.
- 9 ———. 2009b. *Driving Tours*. Available: <<http://www.californiadelta.org/drivetours.htm>>. Accessed: February 20, 2009.
- 10 ———. 2010a. *Wineries*. Available: <<http://www.californiadelta.org/wineries.htm>>. Accessed:
 11 January 27, 2012.
- 12 ———. 2010b. *Watersports*. Available: <<http://www.californiadelta.org/waterski.htm>>, Accessed:
 13 May 27, 2012.
- 14 California Department of Parks and Recreation's Division of Boating and Waterways. 2002.
 15 *California Boating Facilities Needs Assessment*. Sacramento, CA. Available:
 16 <http://www.dbw.ca.gov/Reports/CBFNA.aspx>. Accessed: January 19, 2012.
- 17 ———. 2003. *Sacramento–San Joaquin Delta Boating Needs Assessment 2000–2020*. Sacramento, CA.
- 18 ———. 2003–2010. *Vessel Registration Reports*. Available:
 19 <<http://www.dbw.ca.gov/Reports/VesselReg.aspx>>. Accessed: March 15, 2012.
- 20 ———. 2007. *California Boating Safety Report*. Sacramento, CA. Available:
 21 <<http://www.dbw.ca.gov/Reports/BSRs/2007/Default.aspx>>. Accessed: January 19, 2012.
- 22 ———. 2009. *ABCs of the California Boating Law*. Sacramento, CA. Available:
 23 <<http://www.dbw.ca.gov/Pubs/Abc>>. Accessed: January 19, 2012.
- 24 California Department of Fish and Game. 2007a. *Lower Sherman Island Wildlife Area Land Management Plan*. Prepared by EDAW. Sacramento, CA. Available: <http://www.dfg.ca.gov/lands/mgmtplans/lсиwa/docs/LSIWA_FinalLMP.pdf>. Accessed: January 19, 2012.
- 25 ———. 2007b. *Peytonia Slough Ecological Reserve*. Available:
 26 <<http://www.dfg.ca.gov/lands/er/region3/peytonia.html>>. Accessed: January 25, 2012.
- 27 ———. 2008a. *Hill Slough Wildlife Area—Solano County*. Available:
 28 <<http://www.dfg.ca.gov/lands/wa/region3/hillslough.html>>. Accessed: January 25, 2012.
- 29 ———. 2008b. *Yolo Bypass Wildlife Area Land Management Plan*. Available:
 30 <<http://www.dfg.ca.gov/lands/mgmtplans/ybwa>>. Accessed: January 19, 2012.

- 1 ———. 2009a. *Delta Island Hunting Program*. Available:
2 <<http://www.dfg.ca.gov/delta/hunts/waterfowl/>>. Accessed: January 26, 2012.
- 3 ———. 2009b. *Rhode Island Wildlife Area*. Available:
4 <<http://www.dfg.ca.gov/lands/wa/region3/rhodeisland.html>>. Accessed: January 23, 2012.
- 5 ———. 2009c. *Lower Sherman Island Wildlife Area*.
6 <<http://www.dfg.ca.gov/lands/wa/region3/lowersherman.html>>. Accessed: January 23, 2012.
- 7 ———. 2009d. *White Slough Wildlife Area*. Available:
8 <<http://www.dfg.ca.gov/lands/wa/region3/whiteslough.html>>. Accessed: January 23, 2012.
- 9 ———. 2009e. *Woodbridge Ecological Reserve (AKA Isenberg Crane Reserve)—San Joaquin County*.
10 Available: <<http://www.dfg.ca.gov/lands/er/region3/woodbridge.html>>. Accessed: January 26,
11 2012.
- 12 ———. 2009f. *Wildlife Areas—Bay Delta Region*. Map. Available:
13 <<http://www.dfg.ca.gov/lands/wa/region3/index.html>>. Accessed: January 25, 2012.
- 14 ———. 2009g. *Calhoun Cut Ecological Reserve—Solano County*. Available:
15 <<http://www.dfg.ca.gov/lands/er/region3/calhoun.html>>. Accessed: January 26, 2012.
- 16 ———. 2009h. *Decker Island Wildlife Area*. Available:
17 <<http://www.dfg.ca.gov/lands/wa/region3/deckerisland.html>>. Accessed: January 26, 2012.
- 18 ———. 2010a. *Grizzly Wildlife Area Complex Hunting Opportunities*. Available:
19 <<http://www.dfg.ca.gov/lands/wa/region3/grizzlyisland/hunting.html>>. Accessed: January 25,
20 2012.
- 21 ———. 2010b. *Grizzly Wildlife Area General Information*. Available: <<http://www.dfg.ca.gov/lands/wa/region3/grizzlyisland/generalinfo.html>>. Accessed: January 25, 2012.
- 23 ———. 2010c. *Grizzly Wildlife Area's Self-Guided Tour*. Available: <<http://www.dfg.ca.gov/lands/wa/region3/grizzlyisland/wildlifetour.html>>. Accessed: January 25, 2012.
- 25 ———. 2010d. *Fishing at Grizzly Island*. Available: <<http://www.dfg.ca.gov/lands/wa/region3/grizzlyisland/fishing.html>>. Accessed: January 25, 2012.
- 27 ———. 2010e. *Grizzly Wildlife Area—Solano County*. Available: <<http://www.dfg.ca.gov/lands/wa/region3/grizzlyisland/index.html>>. Accessed: January 25, 2012.
- 29 ———. 2010f. *Miner Slough Wildlife Area—Solano County*. Available:
30 <<http://www.dfg.ca.gov/lands/wa/region3/minerslough.html>>. Accessed: January 26, 2012.
- 31 ———. 2010g. *Fremont Weir Wildlife Area—Sutter and Yolo Counties*. Available:
32 <<http://www.dfg.ca.gov/lands/wa/region2/fremontweir.html>>. Accessed: January 26, 2012.
- 33 ———. 2010h. *Sacramento Bypass Wildlife Area—Yolo County*. Available: <<http://www.dfg.ca.gov/lands/wa/region2/sacramentobypass.html>>. Accessed: January 26, 2012.
- 35 ———. 2010i. *West Hilmar Wildlife Area—Merced and Stanislaus Counties*. Available:
36 <<http://www.dfg.ca.gov/lands/wa/region4/westhilmar.html>>. Accessed: January 26, 2012.

- 1 ———. 2011a. *2011-2012 Freshwater Sport Fishing Regulations*. Available: <http://www.dfg.ca.gov/regulations/FreshFish-Mar2011/ccr-t14-ch2-art4-sec5_00.html>. Accessed: January 27, 2012.
- 3 ———. 2011b. *California Hunting Regulations: Waterfowl, Upland Game, Hunting and Other Public*
4 *Uses on State and Federal Areas*. Available: <<http://www.dfg.ca.gov/regulations/>>. Accessed:
5 January 19, 2012.
- 6 California Department of Fish and Game, U.S. Fish and Wildlife Service, and Bureau of Reclamation.
7 2011. *Suisun Marsh Habitat Management, Preservation, and Restoration Plan. Final*
8 *Environmental Impact Statement/Environmental Impact Report*. November. Sacramento, CA.
9 Available: <http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=781>. Accessed:
10 June 21, 2013.
- 11 California Department of Parks and Recreation. 1973. *Unit 151 Resource Management Plan and*
12 *General Development Plan Lake Oroville State Recreation Area*. August. Sacramento, CA.
13 Available: <http://www.parks.ca.gov/?page_id=24358>. Accessed: January 20, 2012.
- 14 ———. 1986. *Unit 333 San Luis Reservoir State Recreation Area General Development Plan*
15 *Amendment*. Available: <<http://www.parks.ca.gov/pages/21299/files/333.pdf>>. Accessed:
16 January 20, 2012.
- 17 ———. 1988a. *General Plan for Brannan Island and Franks Tract State Recreation Areas*. Available:
18 <<http://www.parks.ca.gov/pages/21299/files/314.pdf>>. Accessed: January 19, 2012.
- 19 ———. 1988b. *Unit 151 Lake Oroville State Recreation Area General Development Plan Amendment*
20 *Lime Saddle Area*. Preliminary. September. Sacramento, CA. Available:
21 <http://www.parks.ca.gov/?page_id=24358>. Accessed: January 20, 2012.
- 22 ———. 1996. *Unit 318 Folsom State Recreation Area General Plan Amendment*. January. Sacramento,
23 CA. Available: <http://www.parks.ca.gov/pages/21299/files/318_1.pdf>. Accessed: January 20,
24 2012.
- 25 ———. 1997. *The Delta: Sacramento-San Joaquin Delta Recreation Survey*. Prepared for the Delta
26 Protection Commission and the California Department of Parks and Recreation's Division of
27 Boating and Waterways. September. Available: <http://www.delta.ca.gov/recreation_survey.htm>. Accessed: January 20, 2012.
- 29 ———. 2002. *Millerton Lake State Recreation Area*. Brochure. Last revised: 2008. Available:
30 <<http://www.parks.ca.gov/pages/587/files/millerton.pdf>>. Accessed: January 26, 2012.
- 31 ———. 2008a. *About the Park* (Lake Oroville State Recreation Area). Available:
32 <http://www.parks.ca.gov/?page_id=948>. Accessed: January 26, 2012.
- 33 ———. 2008b. *State Parks. Central Valley Vision Draft Implementation Plan*. Available:
34 <http://parks.ca.gov/?page_id=23483>. Accessed: January 19, 2012.
- 35 ———. 2008c. *Recreation Assessment: Brannan Island State Recreation Area*. Sacramento, CA.
- 36 ———. 2010a. *Folsom Dam*. Available: <http://www.parks.ca.gov/?page_id=882>. Accessed:
37 January 27, 2012.
- 38 ———. 2010b. *Folsom Lake State Recreation Area*. <http://www.parks.ca.gov/?page_id=500>.
39 Accessed: January 27, 2012.

- 1 ———. 2010c. *Visiting the Park* (Folsom Lake SRA). Available:
2 <http://www.parks.ca.gov/?page_id=879>. Accessed: January 27, 2012.
- 3 ———. 2010d. *Folsom Lake State Recreation Area and Folsom Powerhouse SHP General Plan*.
4 Available: <http://www.parks.ca.gov/?page_id=22322>. Accessed: January 20, 2012.
- 5 ———. 2010e. *Caswell Memorial State Park*. Available: <http://www.parks.ca.gov/?page_id=557>.
6 Accessed: January 20, 2012.
- 7 ———. 2010f. *General Plans and Classification Actions in Progress*. Available:
8 <http://www.parks.ca.gov/?page_id=21312>. Accessed: March 15, 2012.
- 9 ———. 2011a. *Brannan Island State Recreation Area*. Available:
10 <http://www.parks.ca.gov/?page_id=487>. Accessed: January 27, 2012 and August 21, 2012.
- 11 ———. 2011b. *Brannan Island and Franks Tract*. Brochure. Available: <http://parks.ca.gov/pages/487/files/BrannanIsl_FranksTractFinalWebLayout2011.pdf>. Accessed: January 30, 2012.
- 13 ———. 2011c. *San Luis Reservoir State Recreation Area*. Available:
14 <http://www.parks.ca.gov/?page_id=558>. Accessed: January 26, 2012.
- 15 ———. 2011d. *Recreation Proposal for the Sacramento–San Joaquin Delta and Suisun Marsh*.
16 Available: <http://www.parks.ca.gov/?page_id=26677>. Accessed: January 20, 2012.
- 17 ———. 2012a. *Delta Meadows Park Property*. Available: <http://parks.ca.gov/?page_id=492>.
18 Accessed: January 27, 2012.
- 19 ———. 2012b. *Delta Meadows State Recreation Area. Delta Meadows Trail*. Available:
20 <http://parks.ca.gov/?page_id=25206>. Accessed: January 27, 2012 and August 21, 2012.
- 21 ———. 2012c. *Franks Tract State Recreation Area*. Available:
22 <http://www.parks.ca.gov/?page_id=490>. Accessed: January 26, 2012.
- 23 ———. 2012d. *About the Park* (Brannan Island SRA). Available:
24 <http://www.parks.ca.gov/?page_id=1318>. Accessed: March 15, 2012.
- 25 California Department of Transportation. 2008. *Eligible (E) and Officially Designated (OD) Routes*.
26 Last revised May 19, 2008. Available: <<http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm>>. Accessed February 5, 2009.
- 28 ———. 2011. *Officially Designated State Scenic Highways*. Last updated November 7, 2011.
29 Available: <<http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm>>. Accessed January 19,
30 2012.
- 31 California Department of Water Resources. 1980. *Sacramento–San Joaquin Delta Outdoor Recreation Survey*. March. Prepared by Edilberto Z. Cajicom, Ph.D. and Associates. California State University, Sacramento, Department of Recreation and Park Administration. Sacramento, CA.
- 34 ———. 2000. *Suisun Marsh Monitoring Program Reference Guide*. Version 2. June. Environmental Services Office.

- 1 ———. 2008. *Draft Environmental Impact Report Dutch Slough Tidal Marsh Restoration Project.*
 2 SCH# 2006042009. Prepared by Grassetti Environmental Consulting for the California
 3 Department of Water Resources and the California State Coastal Conservancy. November.
 4 Available: <http://www.water.ca.gov/floodsafe/fessro/environmental/dee/dutch_deir.cfm>. Accessed: June 20, 2013.
- 6 ———. 2009a. *The Suisun Marsh: Ongoing Activities in the Marsh.* Last revised: December 22, 2009.
 7 Available: <<http://www.water.ca.gov/suisun/activities.cfm>>. Accessed: January 25, 2012.
- 8 ———. 2009b. *Scoping Report: Franks Tract Project.* Available: <http://www.water.ca.gov/frankstract/docs/Franks_Tракt_Project_Scoping_Report_Main.pdf>. Accessed May 27, 2012.
- 10 ———. 2010. *California State Water Project Overview.* Available: <<http://www.water.ca.gov/swp/>>.
 11 Last Modified: August 11, 2010. Accessed: May 23, 2012.
- 12 ———. 2011. *The Suisun Marsh.* Last revised: December 27, 2011. Available:
 13 <<http://www.water.ca.gov/suisun/>>. Accessed: January 25, 2012.
- 14 ———. 2012. *Franks Tract Project.* Available: <<http://www.water.ca.gov/frankstract/>>. Accessed
 15 May 27, 2012.
- 16 ———. 2013. *Initial Study/Proposed Mitigated Negative Declaration Clifton Court Forebay Fishing
 17 Facility.* Prepared by AECOM. Sacramento, CA.
- 18 California Department of Water Resources and Bureau of Reclamation. 2005. *South Delta
 19 Improvements Program Environmental Impact Statement/Environmental Impact Report.* October.
 20 Sacramento, CA. Prepared by Jones & Stokes, Sacramento, CA.
- 21 California Fish and Game Commission. 2012. *Fish and Game Regulations.* Available:
 22 <<http://www.fgc.ca.gov/regulations/>>. Accessed: January 19, 2012.
- 23 California State Coastal Conservancy. 2007. *Big Break Regional Shoreline Interpretive Exhibits.* Staff
 24 Recommendation. December 13. Exhibits. Available: <http://www.scc.ca.gov/webmaster/ftp/pdf/sccbb/2007/0712/0712Board08_Big_Break_Regional_Shoreline.pdf>. Accessed:
 25 February 1, 2012.
- 27 California State Parks. 2011. *Recreation Proposal for the Sacramento–San Joaquin Delta and Suisun
 28 Marsh.* Planning Division.
- 29 California Watchable Wildlife. 2009. *Delta Meadows State Park Site # 274.* Available:
 30 <http://www.cawatchablewildlife.org/viewsite.php?site=274&display=q>. Accessed: April 22,
 31 2009.
- 32 City of Antioch. 2003. *City of Antioch General Plan.* Antioch, CA. November 24.
- 33 ———. 2011. *Parks Directory.* Available: <<http://www.ci.antioch.ca.us/citygov/publicworks/parks/default.htm>>. Accessed: January 20, 2012.
- 35 ———. 2012. *City Services: Antioch Municipal Marina.* Available:
 36 <<http://www.ci.antioch.ca.us/CitySvcs/Marina>>. Accessed: January 20, 2012.
- 37 City of Brentwood. 2011. *City of Brentwood General Plan 2001–2021.* Last revised June 2011.
 38 Brentwood, CA. Available: <http://www.brentwoodca.gov/pdf/new/comdev/general_plan.pdf>. Accessed: January 20, 2012.

- 1 City of Marysville. 2012a. *Welcome to Marysville*. Available: <<http://www.marysville.ca.us/>>. Accessed: February 3, 2012.
- 3 ———. 2012b. *Parks/Facilities*. Available: <http://www.marysville.ca.us/city_services.asp?did=37>. Accessed: February 3, 2012.
- 5 City of Mendota. 2010. *Community Profile*. Available: <<http://www.ci.mendota.ca.us/community-profile.htm>>. Accessed: February 6, 2012.
- 7 City of Oakley. 2002. *City of Oakley 2020 General Plan*. Oakley, CA. Adopted December 16, 2002. Amended January 26, 2010. Available: <<http://www.ci.oakley.ca.us/subpage.cfm?id=572363>>. Accessed: January 20, 2012.
- 10 City of Pittsburg. 2004. *Pittsburg 2020: A Vision for the 21st Century. City of Pittsburg General Plan*. Includes amendments through December 2004. Pittsburg, CA. Available: <<http://www.ci.pittsburg.ca.us/index.aspx?page=228>>. Accessed: January 20, 2012.
- 13 City of Rio Vista. 2002. *City of Rio Vista General Plan 2001*. Prepared by City of Rio Vista Community Development Department, Rio Vista, CA. Adopted July 18, 2002. City Council Resolution No. 02-62. Available: <<http://www.rio-vista-ca.com/general-plan>>. Accessed: January 20, 2012.
- 16 City of Sacramento. 2009. Pocket Community Plan. In *Sacramento 2030 General Plan*. Adopted March 3. Available: http://www.sacgp.org/documents/05_Part3.07_Pocket.pdf. Accessed: January 20, 2011.
- 19 ———. 2011. *Garcia Bend Park Amenity Guide*. Last revised: May 24, 2011. Available: <http://www.cityofsacramento.org/ParksandRecreation/parks/sites/gbend_map.htm>. Accessed: January 20, 2012.
- 22 ———. 2012. *General Plan Update*. Last revised: January 19, 2012. Available: <<http://www.sacgp.org>>. Accessed: January 20, 2012.
- 24 City of Stockton. 2008. *Parks and Recreation Parks and Facilities*. Available: <<http://www.stocktongov.com/files/LegalParks.pdf>>. Accessed: January 23, 2012.
- 26 ———. 2011a. *Boat Launch Ramps*. Last revised: September 22, 2011. Available: <<http://www.stocktongov.com/government/departments/communityServices/attBoat.html>>. Accessed: January 23, 2012.
- 29 ———. 2011b. *Sports Facilities. Bike and Jogging Paths*. Last revised: March 22, 2011. Available: <http://www.stocktongov.com/discover/sportFac.html>. Accessed: January 23, 2012.
- 31 ———. 2011c. *Weber Point Event Center*. Last revised: March 21, 2011. Available: <<http://www.stocktongov.com/government/departments/communityServices/rIWeber.html>>. Accessed: January 23, 2012.
- 34 City of West Sacramento. 2004. *City of West Sacramento General Plan*. West Sacramento, CA. Revised and adopted December 8.
- 36 ———. 2010. *Policy Issues. Attachment 1. Revised Draft Vision Statement*. April 1. Available: <<http://www.cityofwestsacramento.org/generalplan2030/pdf/PolicyIssues.pdf>>. Accessed: February 3, 2012.

- 1 Contra Costa County. 2005. *Contra Costa County General Plan 2005–2020*. Contra Costa County
2 Community Development Department, Martinez, CA. Available: <<http://www.co.contra->
3 [ca.us/depart/cd/current/advance/GeneralPlan.htm](http://depart/cd/current/advance/GeneralPlan.htm)>. Accessed: February 11, 12, and 13,
4 2009; January 24, 2012.

5 Cosumnes River Preserve. 2008. *Cosumnes River Preserve Management Plan*. Final. Available:
6 <http://www.cosumnes.org/about_crp/managementplan.htm>. Accessed: January 23, 2012.

7 ———. 2009a. *Project Description*. Available: <http://www.cosumnes.org/about_crp/project.htm>.
8 Accessed: January 23, 2012.

9 ———. 2009b. *Missions and Goals*. Available:
10 <http://www.cosumnes.org/about_crp/mission_goals.htm>. Accessed: January 23, 2012.

11 ———. 2009c. *Recreation Opportunities*. Available:
12 <<http://www.cosumnes.org/recreation/index.html>>. Accessed: January 23, 2012.

13 ———. 2009d. *Preserve Driving Tour*. Available:
14 <http://www.cosumnes.org/recreation/driving_tour.html>. Accessed: January 23, 2012.

15 ———. 2009e. *Walking & Hiking Trails*. Available: <
16 <http://www.cosumnes.org/recreation/hiking.html>>. Accessed: January 23, 2012.

17 ———. 2009f. *Hunting & Fishing*. Available:
18 <http://www.cosumnes.org/recreation/hunting_fishing.html>. Accessed: January 23, 2012.

19 ———. 2012a. *Trail Map*. Available: <<http://www.cosumnes.org/recreation/hiking.html>>;
20 <<http://www.cosumnes.org/recreation/2%20pg%20Trail%20Guide.pdf>>. Accessed August 15,
21 2012.

22 ———. 2012b. *Paddling Guide*. Available:
23 <<http://www.cosumnes.org/recreation/Paddling%20Guide.pdf>>. Accessed August 15, 2012.

24 County of Yolo. 2009. *Yolo County 2030 Countywide General Plan*. November 10. Woodland, CA.
25 Available: <<http://www.yolocounty.org/Index.aspx?page=1965>>. Accessed: January 17, 2012.

26 Delta Farmer's Market. 2011. *Delta Wine*. Available:
27 <<http://www.deltafarmersmarket.com/wine.html>>. Accessed: January 27, 2012.

28 Delta Protection Commission. 1995. *Land Use and Resource Management Plan for the Primary Zone of
29 the Delta*. Available: <<http://www.delta.ca.gov/Land%20Use%20and%20Resource%20>
30 Management%20Plan%20for%20the%20Prim.htm>. Accessed: January 23, 2012.

31 ———. 1997. *Inventory of Recreational Facilities*. Available:
32 <http://www.delta.ca.gov/recreation_inventory.htm>. Accessed: January 24, 2012.

33 ———. 2006. *Draft Aquatic Recreation Component of the Delta Recreation Strategy Plan*. Available:
34 <http://www.dangermond.com/dpc/DELTA_PLAN_FINAL6_DRAFT.pdf>. Accessed: January 24,
35 2012.

36 ———. 2007. *The Great California Delta Trail Fact Sheet*. Available:
37 <http://www.delta.ca.gov/res/docs/trail/fact_sheet.pdf>. Accessed: January 24, 2012.

- 1 ———. 2010. *Draft Land Use and Resource Management Plan for the Primary Zone of the Delta*.
 2 Adopted February 25. Available: <http://www.delta.ca.gov/plan_management.htm>. Accessed:
 3 March 15, 2012.
- 4 ———. 2012. *Economic Sustainability Plan for the Sacramento–San Joaquin Delta*. January. Prepared
 5 by Business Forecasting Center, Eberhardt School of Business, University of the Pacific; The
 6 Dangermond Group; Economic and Planning Systems, Inc.; Sapper West, Inc.; Garcia DeCredico
 7 Studio; Natural Resources Institute, University of the Pacific; and Peterson Brustad, Inc.
 8 Licensed Under the Creative Commons Deed. Attribution-Non-Commercial-NoDerivs 3.0 United
 9 States (CC BY-NC-ND 3.0). Available: <http://www.delta.ca.gov/res/docs/ESP/ESP_P2_FINAL.pdf>. Accessed June 19, 2013.
- 11 Delta Science Center. 2009. *About Us*. Available: <<http://deltasciencecenter.com/aboutus.aspx>>.
 12 Accessed: January 23, 2012.
- 13 Delta Stewardship Council. 2013. *Proposed Final Delta Plan*. May. Available:
 14 <<http://deltacouncil.ca.gov/delta-plan/>>. Accessed: June 19, 2013.
- 15 Delta Vision. 2007. *Delta Vision: Our Vision for the California Delta*. Prepared by the Governor's Delta
 16 Vision Blue Ribbon Task Force. Final. Available: <<http://www.deltavision.ca.gov/index.shtml>>.
 17 Accessed: January 26, 2012.
- 18 Ducks Unlimited. 2012. *Waterfowl Impacts of the Proposed Conservation Measure 2 for the Yolo
 19 Bypass—An Effects Analysis Tool*. July. Prepared for Bay Delta Conservation Plan—Yolo Bypass
 20 Fisheries Enhancement Planning Team. With support from Metropolitan Water District of
 21 Southern California and Westlands Irrigation District. Rancho Cordova, CA.
- 22 East Bay Regional Park District. 1996. *Master Plan 1997*. Oakland, CA. December 17. Available:
 23 <<http://www.ebparks.org/planning>>. Accessed: January 24, 2012.
- 24 ———. 2004. *Antioch/Oakley Regional Shoreline*. Available: <http://www.ebparks.org/files/EBRPD_files/brochure/AntiochOakley_text.pdf>. Accessed: January 24, 2012.
- 26 ———. 2007. *Existing and Potential Parklands and Trails*. Oakland, CA. November 6. Available:
 27 <<http://www.ebparks.org/files/2007MasterPlanMap.pdf>>. Accessed: January 24, 2012.
- 28 ———. 2008a. *Antioch/Oakley Regional Shoreline*. Available:
 29 <http://www.ebparks.org/parks/antioch_oakley>. Accessed: January 24, 2012.
- 30 ———. 2008c. *Marsh Creek Regional Trail Map*. Oakland, CA. Available: <http://www.ebparks.org/files/EBRPD_files/brochure/marsh_cr_tr.pdf>. Accessed: January 24, 2012.
- 32 ———. 2008b. *Browns Island*. Available: <http://www.ebparks.org/parks/browns_island>.
 33 Accessed: January 24, 2012.
- 34 ———. 2012a. *Big Break Regional Shoreline*. Available:
 35 <http://www.ebparks.org/parks/big_break>. Accessed: January 30, 2012.
- 36 ———. 2012b. *Master Plan*. Available: <<http://www.ebparks.org/planning/mp>>. Accessed:
 37 February 3, 2012.
- 38 Gamebirdhunts.com. 2009. *California Upland Hunts*. Available:
 39 <<http://www.gamebirdhunts.com/us-hunting/California.asp>>. Accessed: January 24, 2012.

- 1 Graefe, A., and J. Absher. 2005. *Boating Capacity at Shasta and Trinity Lakes*. Wildland Recreation
2 and Urban Cultures Update #49. USDA Forest Service, Pacific Southwest Research Station.
- 3 Grimaldo el al. 2009. *Factors Affecting Fish Entrainment into Massive Water Diversions in a Tidal
4 Freshwater Estuary: Can Fish Losses be Managed?* North American Journal of Fisheries Society.
- 5 Houser, S., and D. North. 2001. *Estimating the Recreational Value of the San Joaquin River Parkway*.
6 November. Fresno, CA.
- 7 Ironhouse Sanitary District. 2009. *Jersey Island Fishing/Hunting/Hiking Permit*. Available:
8 <<http://www.ironhousesanitarydistrict.com/mainframe.html>>. Accessed: January 24, 2012.
- 9 Locke Foundation. 2012. *Locke Foundation*. Available: <<http://lockeca.com/index.htm>>. Accessed:
10 January 20, 2012.
- 11 Lodi Sandhill Crane Association 2011. *Sandhill Crane Festival*. Available:
12 <<http://crane festival.com/>>. Accessed: January 31, 2012.
- 13 Mokelumne Coast to Crest Trail. 2012. *Delta and Central Valley*. Available:
14 <http://www.mc2ct.org/central_valley.htm>. Accessed: January 24, 2012.
- 15 National Park Service. 1999. *Whiskeytown-Shasta-Trinity National Recreation Area General
16 Management Plan and Environmental Impact Statement*. June. Pacific West Region. Available:
17 <<http://www.nps.gov/whis/parkmgmt/upload/GMPfinal.pdf>>. Accessed: January 26, 2012.
- 18 ——. 2009. Available: <<http://www.nature.nps.gov/stats/park.cfm>>. Accessed: January 26, 2012.
- 19 ——. 2011a. *Whiskeytown National Recreation Area*. Available:
20 <<http://www.nps.gov/whis/index.htm>>. Accessed: February 3, 2012.
- 21 ——. 2011b. *Whiskeytown Outdoor Activities*. Available:
22 <<http://www.nps.gov/whis/planyourvisit/outdooractivities.htm>>. Accessed: February 3, 2012.
- 23 Neville, B. 2008. *Oroville Wildlife Area. Easy Access for Sportsmen Traveling from San Francisco or the
24 Bay Area*. Western Outdoor News. September 30. Available: <<http://www.wonews.com/t-MapFeature-Orovillewildlifearea-NEVILLE-093008.aspx>>. Accessed: February 3, 2012.
- 26 Office of Planning and Research. 2003. *State of California General Plan Guidelines*. Governor's Office
27 of Planning and Research. Available:
28 <http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf>. Accessed: June 20, 2013.
- 29 Plater, J., and W. Wade. 2002. Estimating Potential Demand for Freshwater Recreation Activities in
30 the Sacramento-San Joaquin River Delta, 1997–2020. Appendix 6-1 in California Department of
31 Parks and Recreation's Division of Boating and Waterways. 2003. *Sacramento-San Joaquin Delta
32 Boating Needs Assessment 2000-2020*. Sacramento, CA.
- 33 Reyman Construction. 2011. *Locke Boarding House*. Available:
34 <<http://www.reymanbrothers.com/locke.html>>. Accessed: January 20, 2011.
- 35 River Journey. 2012. *Stanislaus River Trips*. Available: <<http://www.riverjourney.com/index.cfm>>.
36 Accessed: January 25, 2012.
- 37 Rush Ranch Educational Council. *Who is the Rush Ranch Educational Council?* Available:
38 <<http://www.rushranch.net/about-rrec.php>>. Accessed: January 25, 2012.

- 1 SacDelta.com. 1998. *Fishing*. Available: <www.sacdelta.com/fishing/index.html>. Accessed: January
2 24, 2012.
- 3 ———. 2012. *Events*. Last revised: January 23, 2012. Available:
4 <<http://www.sacdelta.com/events.html>>. Accessed: January 24, 2012.
- 5 Sacramento County. 2008. *American River Parkway Plan*. Available:
6 <<http://www.msa2.saccounty.net/parks/Pages/ParkwayPlan.aspx>>. Accessed: January 23,
7 2012.
- 8 ———. 2010. *2030 General Plan Update Adoption Hearing #13*. January 11. Available:
9 <<http://www.msa2.saccounty.net/planning/Pages/GeneralPlanUpdate.aspx>>. Accessed:
10 February 2, 2012.
- 11 ———. 2011. *Sacramento County General Plan of 2005–2030*. Amended and
12 Adopted November 9. Community Planning and Development Department, Sacramento, CA.
13 Available: <<http://www.msa2.saccounty.net/planning/Pages/GeneralPlan.aspx>>. Accessed:
14 January 24, 2012.
- 15 ———. 2013a. *Sacramento County General Plan Website*. Available:
16 <<http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/GeneralPlan.aspx>>.
17 Accessed: June 20, 2013.
- 18 ———. 2013b. *General Plan Delta Protection Element*. Available: <http://www.per.saccounty.net/PlansandProjectsIn-Progress/Documents/General%20Plan%202030/Draft_Delta_Prot_Element_as_to_DPC092712.pdf>. Accessed: August 13, 2013.
- 21 Sacramento County Regional Parks. 2008. *Features and Activities*. Available:
22 <<http://www.msa2.saccounty.net/parks/Documents/ParksGrid-FINAL.10.08.pdf>>. Accessed:
23 January 24, 2012.
- 24 ———. 2010a. *Sacramento River/Delta Hogback Island Access*. Available:
25 <<http://www.msa2.saccounty.net/parks/Pages/ParkDetails.aspx?pn=Sacramento%20River/DeIta&pnd=Hogback%20Island%20Access>>. Accessed: January 24, 2012.
- 27 ———. 2010b. *American River Parkway Facts*. Available:
28 <<http://www.msa2.saccounty.net/parks/Pages/FastFacts.aspx>>. Accessed: January 24, 2012.
- 29 ———. 2010c. *American River Parkway Jedediah Smith Memorial Trail Map*. Available:
30 <<http://www.msa2.saccounty.net/parks/Documents/ParkwayMap.pdf>>. Accessed: January 24,
31 2012.
- 32 ———. 2010d. *A-Z Regional Parks*. Available: <<http://www.msa2.saccounty.net/parks/Pages/ParksA-ZListing.aspx>>. Accessed: January 24, 2012.
- 34 ———. 2010e. *American River Parkway—Discovery Park*. Available:
35 <<http://www.msa2.saccounty.net/parks/Pages/ParkDetails.aspx?pn=American%20River%20Parkway&pnd=Discovery%20Park>>. Accessed: January 30, 2012.
- 37 Sacramento State Aquatic Center. 2012a. *Equipment Rental*. Available:
38 <<http://www.sacstateaquaticcenter.com/>>. Accessed: January 25, 2012.

- 1 ———. 2012b. *About*. Available: <http://www.sacstateaquaticcenter.com/index.php?option=com_content&view=article&id=216&Itemid=250>. Accessed: January 30, 2012.
- 3 SacramentoRiver.org. 2009a. *Cliffhouse Fishing Access*. Sacramento River Recreational and Public
4 Access Guide. Available: <http://www.sacramentoriver.org/access_site.php?access_site_id=176&q=Cliffhouse&q_type=access_sites&serial=N%3B>. Accessed: January 24, 2012.
- 6 ———. 2009b. *Georgiana Slough Fishing Access*. Sacramento River Recreational and Public Access
7 Guide. Available: <http://www.sacramentoriver.org/access_site.php?access_site_id=179&q=Georgiana%20Slough&q_type=access_sites&serial=N%3B>. Accessed: January 24, 2012.
- 9 ———. 2009c. *Sherman Island County Park*. Sacramento River Recreational and Public Access Guide.
10 Available: <http://www.sacramentoriver.org/access_site.php?access_site_id=172>. Accessed:
11 January 24, 2012.
- 12 ———. 2012. *Sacramento River Public Access Site Search*. Available:
13 <http://www.sacramentoriver.org/access_site.php?view=all>. Accessed: January 26, 2012.
- 14 San Francisco Bay Conservation and Development Commission. 1976. *Suisun Marsh Protection Plan*.
15 Available: <http://www.bcdc.ca.gov/laws_plans/laws/suisun_marsh.shtml>. Accessed:
16 February 3, 2012.
- 17 San Joaquin County. 1992. *Countywide General Plan 2010. Volume I*. Amended 2005, 2010.
18 Community Development Department, Stockton, CA. Available: <<http://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=generalplan&prt=yes>>. Accessed: February 11,
19 12, and 13, 2009; January 24, 2012.
- 21 ———. 2008a. *Dos Reis Regional Park*. Available: <<http://www.mgzoo.com/parks/dos-reis-park.htm>>. Accessed: January 23, 2012.
- 23 ———. 2008b. *Other Regional Parks*. Available: <<http://www.mgzoo.com/parks/other-regional-parks.htm>>. Accessed: January 23, 2012.
- 25 ———. 2008c. *Westgate Landing Regional Park*. Available:
26 <<http://www.mgzoo.com/parks/westgate-landing-park.htm>>. Accessed: January 24, 2012.
- 27 San Joaquin River Conservancy. 2000. *Recompiled San Joaquin Parkway River Master Plan*. July 20.
28 Available: <<http://www.sjrc.ca.gov/docs/Recompiled%20SJR%20Parkway%20Master%20Plan.pdf>>. Accessed: February 2, 2012.
- 30 ———. 2010. *San Joaquin River Parkway*. Available: <<http://www.sjrc.ca.gov>>. Accessed: February
31 2, 2012.
- 32 San Joaquin River Group. 1999. *Environmental Impact Report/Environmental Impact Statement for
the San Joaquin River Agreement (1999-2010)*. Chapter 3.8 Recreation. January. Available:
33 <http://www.sjrg.org/EIR/final_pdf/tx3_8.pdf>. Accessed: February 3, 2012.
- 35 San Joaquin River Parkway and Conservation Trust. 2012. *Creating and Protecting the San Joaquin
River Parkway for Everyone*. Available: <<http://www.riverparkway.org/index.php>>. Accessed:
36 February 2, 2012.
- 38 Solano County. 2003. *Solano County Park and Recreation Element. A Part of the Solano County General
Plan*. June 24. Fairfield, CA.

- 1 ———. 2008a. *Solano County General Plan*. December. Fairfield, CA. Available:
2 <http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp>. Accessed: February 11,
3 12, and 13, 2009; January 17, 2012.
- 4 ———. 2008b. *Appendix C: Suisun Marsh Policy Addendum*. Solano County General Plan. Available:
5 <<http://www.co.solano.ca.us/civicax/filebank/blobdload.aspx?blobid=6504>>. Accessed:
6 January 25, 2012.
- 7 ———. 2012. *Belden's Landing Water Facility*. Available: <<http://www.co.solano.ca.us/depts/rm/countypark/beldensldg.asp>>. Accessed: February 3, 2012.
- 9 Solano Land Trust. 2010a. *Rush Ranch Open Space*. Available:
10 <<http://www.solanolandtrust.org/RushRanch.aspx>>. Accessed: January 25, 2012.
- 11 ———. 2010b. *Rush Ranch Open Space Regular Activities*. Available:
12 <<http://www.rushranch.net/activities-and-events.php>>. Accessed: January 25, 2012.
- 13 Stanislaus County. 2010. *River and Fishing Accesses*. Available: <<http://www.stancounty.com/ER/Parks/pdf/RiverFishingAccesses.pdf>>. Accessed: February 3, 2012.
- 15 ———. n.d. *Community Parks*. Department of Parks and Recreation. Modesto, CA. Available:
16 <<http://www.stancounty.com/ER/Parks/pdf/community-parks-brochure.pdf>>. Accessed:
17 February 3, 2012.
- 18 Stanislaus County Department of Parks and Recreation. 2011. *Welcome*. Available:
19 <<http://www.stancounty.com/er/parks/>>. Accessed: February 3, 2012.
- 20 Sunshine Rafting Adventures. 2010. *Stanislaus River Float Trips*. Available:
21 <<http://raftadventure.com/stanislaus-river-trips.php>>. Accessed: January 25, 2012.
- 22 Sutter County. 1996. *Sutter County General Plan Policy Document*. November 25.
- 23 ———. 2010. *Sutter County General Plan*. Public Draft. September. Available:
24 <http://www.co.sutter.ca.us/pdf/cs/ps/gp/documents/Draft_General_Plan.pdf>. Accessed:
25 February 2, 2012.
- 26 ———. 2012. Boat Launching. Available: <<http://www.co.sutter.ca.us/doc/visiting/sportsrecreation/recreation/boatlaunching>>. Accessed: February 3, 2012.
- 28 The Ecological Angler. 2008. *The Lower Stanislaus River*. Available: <http://www.ecoangler.com/habitat/Lower_Stanislaus_River.html>. Accessed: January 31, 2012.
- 30 Trinity County. 2007. *About Our County*. Available: <<http://www.trinitycounty.org/About%20Our%20County/aboutcounty.htm>>. Accessed: January 25, 2012.
- 32 Trinity River Rafting. 2011. *Homepage*. Available: <<http://www.trinityriverrafting.com/>>. Accessed:
33 January 26, 2012.
- 34 U.S. Army Corps of Engineers. 2010. *Recreation at Stanislaus River Parks*. Sacramento District.
35 Available: <<http://www.spk.usace.army.mil/organizations/cespk-co/lakes/StanislausREC.html>>. Accessed: January 31, 2012.

- 1 U.S. Fish and Wildlife Service. 2001. *Antioch Dunes Draft Comprehensive Conservation Plan and*
 2 *Environmental Assessment*. September. Available: <http://library.fws.gov/CCPs/antiochdunes_draft.pdf>. Accessed: January 24, 2012.
- 4 ———. 2007a. *Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan*. Available:
 5 <<http://www.fws.gov/stonelakes/SL%20CCP%20Final%20low%20res.pdf>>. Accessed: January
 6 24, 2012.
- 7 ———. 2007b. *Stone Lakes National Wildlife Refuge*. Available:
 8 <<http://www.fws.gov/stonelakes/images/SLalkesPDF.pdf>>. Accessed: January 24, 2012.
- 9 ———. 2009. *Stone Lakes National Wildlife Refuge Season Averages*. Available:
 10 <<http://www.fws.gov/stonelakes/huntstats.htm>>. Accessed February 24, 2009.
- 11 ———. 2010. *San Luis National Wildlife Refuge. Recreation and Education Opportunities*. Available:
 12 <http://www.fws.gov/refuges/profiles/recEdMore.cfm?ID=81655>. Accessed: January 25, 2012.
- 13 ———. 2011a. *Antioch Dunes National Wildlife Refuge*. Available:
 14 <<http://www.fws.gov/SFBAYREFUGES/antioch>>. Accessed: January 24, 2012.
- 15 ———. 2011b. *San Luis National Wildlife Refuge Complex*. Available:
 16 <http://www.fws.gov/sanluis/sanjoaquin_info.htm>. Accessed: January 25, 2011.
- 17 U.S. Fish and Wildlife Service, Bureau of Reclamation, Hoopa Valley Tribe, and Trinity County. 1999.
 18 *Public Draft Environmental Impact Report/Environmental Impact Statement Trinity River*
 19 *Mainstem Fishery Restoration*. October.
- 20 University of California Davis. 2009. *UC Davis Natural Reserve System—Jepson Prairie Reserve*.
 21 Available: <<http://nrs.ucdavis.edu/jepson.html>>. Accessed: January 26, 2012.
- 22 USDA Forest Service. 1995. *Shasta-Trinity National Forests Land and Resource Management Plan*.
 23 Pacific Southwest Region. Available: <<http://www.fs.usda.gov/detailfull/stnf/landmanagement/planning/?cid=stelprdb5108815&width=full>>. Accessed: January 26, 2012.
- 25 ———. 1996. *Management Guide— Shasta and Trinity Units Whiskeytown-Shasta-Trinity National Recreation Area*. March. Shasta-Trinity National Forests, Redding, CA.
- 27 ———. 2012a. *Shasta-Trinity National Forest. Lewiston Lake*. Available: <<http://www.fs.usda.gov/recarea/stnf/recreation/fishing/recarea/?recid=75228&actid=42>>. Accessed: February 3, 2012.
- 29 ———. 2012b. *Shasta-Trinity National Forest. Trinity Scenic Byway*. Available:
 30 <<http://www.fs.usda.gov/recarea/stnf/recreation/recarea/?recid=6535>>. Accessed: January
 31 25, 2012.
- 32 ———. 2012c. *Shasta-Trinity National Forest. Recreation*. Available:
 33 <<http://www.fs.usda.gov/recmain/stnf/recreation>>. Accessed: January 25, 2012.
- 34 Wild and Scenic Rivers Council. 2011. *Trinity River*. Last revised: August 18, 2011. Available:
 35 <<http://www.rivers.gov/wsr-trinity.html>>. Accessed: January 25, 2012.
- 36 Yolo County. 2009. *Clarksburg Boat Launch*. Available:
 37 <<http://www.yolocounty.org/index.aspx?page=381>>. Accessed: January 25, 2012.

1 Yuba County. 2009. *About Yuba County*. Available: <<http://www.co.yuba.ca.us/>>. Accessed: February
2 3, 2012.

3 **15.4.2 Personal Communications**

4 Cadd, D. Statewide Coordinator. Landscape Architecture Program/California Department of
5 Transportation, Sacramento, CA. February 23, 2009—Telephone conversation with Sarah Heard,
6 EDAW, San Francisco, CA, regarding Officially Designated County Scenic Highway in Sacramento
7 County.

8 De La Rosa, G. Program Technician. California Department of Fish and Wildlife. Sacramento, CA.
9 January 30, 2012—Telephone conversation with Barbara Wolf, ICF International, Sacramento,
10 CA, verifying that Suisun Marsh Hunting Preserve did not renew its license for the 2011 season.

11 Gehlke, Roni. Executive Director. Delta Science Center. Oakley, CA. January 30, 2012—Telephone
12 conversation with Barbara Wolf, ICF International, Sacramento, CA, explaining relationship of
13 Delta Science Center, Delta Discovery Area, and Big Break Regional Trail.

14 Springer, Scott. Outdoor Recreation Planner. U.S. Bureau of Reclamation. Sacramento, CA. August 2,
15 2013. Lead Agency reviewer comment clarifying number of visitors to New Melones Lake.