

# Section 9

## Air Quality

1  
2

3 This section describes air quality conditions in the study area and the potential changes that could occur  
4 as a result of implementing the Delta Plan (the Proposed Project) and the project alternatives. It describes  
5 the environmental setting, potential environmental impacts, and proposed mitigation measures. A  
6 discussion of greenhouse gases and related impacts is presented in Section 21, Climate Change and  
7 Greenhouse Gas Emissions. Some of the predominant sources of air emissions in the study area are  
8 discussed in other sections of this document (e.g., Section 6, Land Use and Planning; Section 7,  
9 Agriculture and Forestry Resources; Section 18, Recreation; Section 19, Transportation, Traffic, and  
10 Circulation; and Section 20, Utilities and Service Systems).

11 The Proposed Project does not propose implementation of any particular physical project; rather, it seeks  
12 to influence, either through limited policy regulation or through recommendations, other agencies to take  
13 certain actions that will lead to achieving the dual goals of Delta ecosystem protection and water supply  
14 reliability. Projects may include water and wastewater treatment plants; conveyance facilities, including  
15 pumping plants; surface water or groundwater storage facilities; ecosystem restoration projects; flood  
16 control levees; or recreation facilities. This is described in more detail in part 2.1 of Section 2A, Proposed  
17 Project and Alternatives, and in Section 2B, Introduction to Resource Sections.

18 The types of changes that could impact air quality include construction and use of facilities such as water  
19 and wastewater treatment plants; conveyance facilities, including pumping plants; and surface water or  
20 groundwater storage facilities. Ecosystem restoration projects; construction of flood control levees or  
21 recreation facilities could result in changes to air quality. Construction- and operations-related impacts on  
22 air quality could be significant depending on various project- and site-specific factors that are presently  
23 undefined. This section identifies mitigation that could be considered by lead agencies to develop specific  
24 mitigation measures for future projects involving air quality. The mitigation may reduce impacts to less  
25 than significant; however, depending on the specific characteristics of the project and the environment,  
26 not all mitigation measures identified would mitigate impacts to a less-than-significant level.

### 27 9.1 Study Area

28 The study area is defined as the geographical area in which the majority of potential impacts are expected  
29 to occur. The air quality study area is predominantly the primary planning area (Delta and Suisun Marsh).  
30 Indirect impacts on air quality may occur outside the primary planning area, so the air quality study area  
31 also includes, to a lesser extent, the secondary planning area (other areas in the Delta watershed or areas  
32 outside the Delta that use Delta water).

1 As a result, the air quality study area includes all or portions of the following air basins:

2 " Primary Planning Area:

- 3 . Sacramento Valley Air Basin (SVAB)
- 4 . San Joaquin Valley Air Basin (SJVAB)
- 5 . San Francisco Bay Area Air Basin (SFBAAB)

6 " Remainder of Study Area:

- 7 . Northeast Plateau Air Basin (NPAB)
- 8 . Mountain Counties Air Basin (MCAB)
- 9 . Great Basin Valleys Air Basin (GBVAB)
- 10 . Lake County Air Basin (LCAB)
- 11 . North Coast Air Basin (NCAB)
- 12 . North Central Coast Air Basin (NCCAB)
- 13 . South Central Coast Air Basin (SCCAB)
- 14 . South Coast Air Basin (SCAB)
- 15 . Mojave Desert Air Basin (MDAB)
- 16 . San Diego Air Basin (SDAB)

17 In California, local air districts have been established to administer air quality laws and regulations within  
18 the air basins. The air basins and air districts in the study area are illustrated in Figures 9-1 and 9-2,  
19 respectively.

20 This section focuses primarily on the air basins in the primary planning area, with the greatest emphasis  
21 on the regulatory setting, existing air quality conditions, and potential impacts in Sacramento, Yolo,  
22 Solano, San Joaquin, Contra Costa, and Alameda counties. Air quality conditions and impacts in the study  
23 area are evaluated and discussed qualitatively, rather than quantitatively.

24 As described in Section 2A, Proposed Project and Alternatives, Delta Plan policies and recommendations  
25 could directly or indirectly lead to construction of new or modified facilities throughout California.  
26 Projects could be constructed, modified, or reoperated in the Delta, Delta watershed, or areas outside the  
27 Delta that use Delta water. It is unclear where projects would be located. The Delta is the focus of the  
28 Delta Reform Act, so the study area for this resource is focused on the Delta.

## 29 9.2 Regulatory Framework

30 Appendix D provides an overview of the plans, policies, and regulations relating to air quality within the  
31 study area.

## 32 9.3 Background and Terminology

33 Important air quality terms used in this document are defined by the U.S. Environmental Protection  
34 Agency (USEPA) and the California Air Resources Board (ARB) as follows.

35 " Attainment Area: A geographic area considered to have air quality as good as or better than the  
36 national and/or state ambient air quality standards. An area may be an attainment area for one  
37 pollutant and a non-attainment area for others (USEPA 2006).

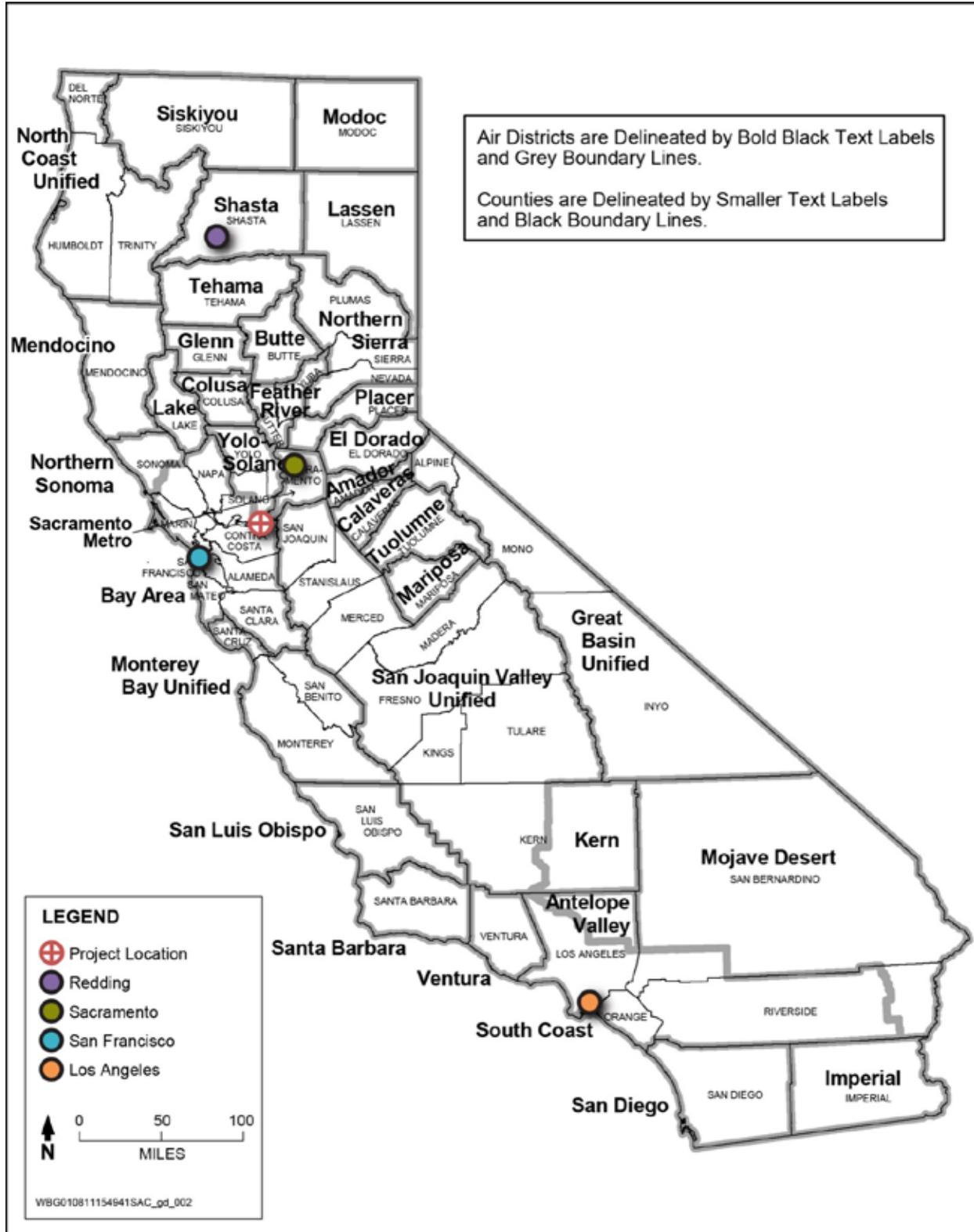
38

1 **Figure 9-1**  
2 **California Air Basins and Counties in the Study Area**  
3 *Source: California Air Resources Board (ARB) 2011a*



4  
5

1 Figure 9-2  
2 California Air Districts and Counties in the Study Area  
3 Source: ARB 2011b



4

- 1       " California Ambient Air Quality Standard (CAAQS): A legal limit that specifies the maximum  
2       level and time of exposure in the outdoor air for a given air pollutant and which is protective of  
3       human health and public welfare (Health and Safety Code section 39606b). CAAQSs are  
4       recommended by the California Office of Environmental Health Hazard Assessment and adopted  
5       into regulation by the ARB. CAAQS are the standards which must be met per the requirements of  
6       the California Clean Air Act (ARB 2010). Appendix D provides a list of the CAAQS and the  
7       national ambient air quality standards (NAAQS).
- 8       " Criteria Pollutant: An air pollutant for which acceptable levels of exposure can be determined and  
9       for which an ambient air quality standard has been set (ARB 2010). The criteria pollutants are  
10      ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate  
11      matter less than 10 microns in aerodynamic diameter (PM<sub>10</sub>), particulate matter less than  
12      2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>), and lead.
- 13      " Greenhouse gases (GHG): Atmospheric gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>),  
14      chlorofluorocarbons, nitrous oxide (N<sub>2</sub>O), ozone, and water vapor that slow the passage of  
15      re-radiated heat through the Earth's atmosphere (ARB 2010). The six GHGs that are the subject  
16      of reductions under the Kyoto Protocol and Assembly Bill 32 are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O,  
17      hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. See Section 21, Climate Change  
18      and Greenhouse Gas Emissions, for further discussion of GHGs.
- 19      " NAAQS: Standards established by USEPA that apply for outdoor air throughout the country  
20      (USEPA 2006).
- 21      " Nonattainment Area: A geographic area identified by the USEPA and/or ARB as not meeting  
22      either NAAQS or CAAQS standards for a given pollutant (ARB 2010).
- 23      " Precursor: In photochemistry, a compound antecedent to a pollutant. For example, volatile  
24      organic compounds (VOC) and NO<sub>x</sub> react in sunlight to form the criteria pollutant ozone. As  
25      such, VOCs and NO<sub>x</sub> are precursors to ozone (USEPA 2006).
- 26      " Reactive Organic Gas (ROG): A photochemically reactive chemical gas, composed of non-  
27      methane hydrocarbons (HC) that may contribute to the formation of smog (ARB 2010). ROG  
28      may also be referred to as non-methane organic gases, VOCs, or HCs.
- 29      " State Implementation Plan (SIP): A plan prepared by states and submitted to USEPA describing  
30      how each area will attain and maintain NAAQS. SIPs include the technical foundation for  
31      understanding the air quality (e.g., emission inventories and air quality monitoring), control  
32      measures and strategies, and enforcement mechanisms (ARB 2010).
- 33      " Toxic Air Contaminant (TAC): An air pollutant, identified in regulation by the ARB, which may  
34      cause or contribute to an increase in deaths or in serious illness, or which may pose a present or  
35      potential hazard to human health. Health effects of TACs may occur at extremely low levels and  
36      it is typically difficult to identify levels of exposure that do not produce adverse health effects  
37      (ARB 2010).

## 38   9.4   Environmental Setting

39   The following sections describe the existing air quality environmental setting by air basin for the study  
40   area. The boundaries of the air basins are shown in Figure 9-1. As shown in Table 9-1, most of the  
41   counties included in the study area are designated as nonattainment for the federal and/or State O<sub>3</sub> and

- 1 particulate matter standards. As stated above, air quality impact analyses for future project-specific  
 2 studies will likely focus on changes to existing air quality due to emissions of NO<sub>x</sub>, ROG, PM<sub>10</sub>, and  
 3 PM<sub>2.5</sub> resulting from construction or operation of projects implemented under the Delta Plan.

**Table 9-1**  
**Pollutants Designated as Nonattainment Pursuant to NAAQS and CAAQS for Counties in the Study Area**

<b>County</b>	<b>Air Basin</b>	<b>Air District</b>	<b>Federal Nonattainment Designations – NAAQS</b>	<b>State Nonattainment Designations – CAAQS</b>
<b>Primary Planning Area</b>				
Sacramento	Sacramento Valley	Sacramento Metro	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Yolo	Sacramento Valley	Yolo-Solano	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub>
Solano	Sacramento Valley and San Francisco Bay Area	Yolo-Solano and Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
San Joaquin	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Contra Costa	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Alameda	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
<b>Delta Watershed Area</b>				
Alpine	Great Basin Valleys	Great Basin Unified	—	PM <sub>10</sub>
Amador	Mountain Counties	Amador	Ozone	Ozone, H <sub>2</sub> S (in the City of Sutter Creek)
Butte	Sacramento Valley	Butte	Ozone and PM <sub>2.5</sub> in Chico	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Calaveras	Mountain Counties	Calaveras	Ozone	Ozone, PM <sub>10</sub>
Colusa	Sacramento Valley	Colusa	—	Ozone, PM <sub>10</sub>
El Dorado	Lake Tahoe and Mountain Counties	El Dorado	Ozone and PM <sub>2.5</sub>	Ozone, PM <sub>10</sub>
Fresno	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Glenn	Sacramento Valley	Glenn	—	Ozone, PM <sub>10</sub>
Humboldt	North Coast	North Coast Unified	—	PM <sub>10</sub>
Inyo	Great Basin Valleys	Great Basin Unified	PM <sub>10</sub> (Owens Valley)	Ozone, PM <sub>10</sub>
Lake	Lake County		—	—
Lassen	Northeast Plateau	Lassen	—	PM <sub>10</sub>
Madera	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Mariposa	Mountain Counties	Mariposa	Ozone	Ozone
Mendocino	North Coast	North Coast Unified	—	PM <sub>10</sub>
Merced	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Modoc	Northeast Plateau	Modoc	—	PM <sub>10</sub>

**Table 9-1**  
**Pollutants Designated as Nonattainment Pursuant to NAAQS and CAAQS for Counties in the Study Area**

<b>County</b>	<b>Air Basin</b>	<b>Air District</b>	<b>Federal Nonattainment Designations – NAAQS</b>	<b>State Nonattainment Designations – CAAQS</b>
Mono	Great Basin Valleys	Great Basin Unified	PM <sub>10</sub> (Mono Basin)	Ozone, PM <sub>10</sub>
Napa	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Nevada	Mountain Counties	Northern Sierra	Ozone	Ozone, PM <sub>10</sub>
Placer	Sacramento Valley, Lake Tahoe and Mountain Counties	Placer	Ozone and PM <sub>2.5</sub> in Sacramento Metro	Ozone, PM <sub>10</sub>
Plumas	Mountain Counties	Northern Sierra	—	PM <sub>10</sub> (PM <sub>2.5</sub> in Portola Valley)
Sacramento	Sacramento Valley	Sacramento Metro	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
San Benito	North Central Coast	Monterey Bay Unified	—	Ozone, PM <sub>10</sub>
San Joaquin	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Santa Clara	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Shasta	Sacramento Valley	Shasta	—	Ozone, PM <sub>10</sub>
Sierra	Mountain Counties	Northern Sierra	—	PM <sub>10</sub> ,
Siskiyou	Northeast Plateau	Siskiyou County	—	Ozone (transitional)
Solano	Sacramento Valley and San Francisco Bay Area	Yolo-Solano and Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Sonoma	North Coast and San Francisco Bay	Northern Sonoma County and Bay Area	Ozone and PM <sub>2.5</sub> in Francisco Bay	Ozone, PM <sub>10</sub> , and PM <sub>2.5</sub> in San Francisco Bay
Stanislaus	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Sutter	Sacramento Valley	Feather River	Ozone (Sutter Buttes), PM <sub>2.5</sub>	Ozone (transitional), PM <sub>10</sub>
Tehama	Sacramento Valley	Tehama	—	Ozone, PM <sub>10</sub>
Trinity	North Coast	North Coast Unified	—	PM <sub>10</sub>
Tuolumne	Mountain Counties	Tuolumne	Ozone	Ozone
Yolo	Sacramento Valley	Yolo-Solano	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub>
Yuba	Sacramento Valley	Feather River	PM <sub>2.5</sub>	Ozone, PM <sub>10</sub>
<b>Areas Outside the Delta that Use Delta Water</b>				
Kern	San Joaquin Valley and Mojave Desert	San Joaquin Valley and Eastern Kern	Ozone, PM <sub>2.5</sub> , (PM <sub>10</sub> in East Kern)	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Kings	San Joaquin Valley	San Joaquin Valley	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Los Angeles	South Coast and Mojave Desert	South Coast and Antelope Valley	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>2</sub> , Pb

**Table 9-1****Pollutants Designated as Nonattainment Pursuant to NAAQS and CAAQS for Counties in the Study Area**

<b>County</b>	<b>Air Basin</b>	<b>Air District</b>	<b>Federal Nonattainment Designations – NAAQS</b>	<b>State Nonattainment Designations – CAAQS</b>
Monterey	North Central Coast	Monterey Bay Unified		Ozone, PM <sub>10</sub>
Orange	South Coast	South Coast	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>2</sub>
Riverside	Salton Sea, South Coast, and Mojave Desert	South Coast and Mojave Desert	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>2</sub> (portion in South Coast)
San Bernardino	Mojave Desert and South Coast	South Coast and Mojave Desert	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub> , H <sub>2</sub> S in Searles Valley
San Diego	San Diego	San Diego	Ozone in San Diego	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
San Francisco	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
San Luis Obispo	South Central Coast	San Luis Obispo	—	Ozone, PM <sub>10</sub>
San Mateo	San Francisco Bay Area	Bay Area	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>2.5</sub>
Santa Barbara	South Central Coast	Santa Barbara	—	Ozone, PM <sub>10</sub>
Santa Cruz	North Central Coast	Monterey Bay Unified	—	Ozone, PM <sub>10</sub>
Tulare	San Joaquin Valley	San Joaquin Valley Unified	Ozone, PM <sub>2.5</sub>	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>
Ventura	South Central Coast	Ventura	Ozone	Ozone, PM <sub>10</sub> , PM <sub>2.5</sub>

Sources: ARB 2009a; USEPA 2010

## 1 9.4.1 Major Sources of Information

2 Information on air quality regulations and air quality conditions is derived from regulatory agencies, such  
3 as USEPA, ARB, and local air districts. The information was primarily obtained from the regulatory  
4 agency web sites, publications, and databases.

## 5 9.4.2 Delta and Suisun Marsh

6 The Delta and Suisun Marsh are within Sacramento, Yolo, Solano, San Joaquin, Contra Costa and  
7 Alameda counties. As shown in Figure 9-1 and listed in Table 9-1, these counties are within three air  
8 basins. Sacramento, Yolo, and the northern portion of Solano County are within the SVAB. The southern  
9 portion of Solano, Alameda and Contra Costa counties are within the SFBAAB. San Joaquin County is in  
10 the SJVAB.

### 11 9.4.2.1 Sacramento Valley Air Basin

12 Portions of the Delta Planning Area are located in Sacramento, Yolo, and Solano counties, and the local  
13 air districts with jurisdiction in these areas are the Sacramento Metropolitan Air Quality Management  
14 District and the Yolo-Solano Air Quality Management District (ARB 2009b, pp. 4-56). The SVAB  
15 includes 9 air districts and 11 counties: all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba,  
16 Sacramento, and Yolo counties; the westernmost portion of Placer County; and the northeastern half of  
17 Solano County.

#### 1 9.4.2.1.1 Ambient Air Quality

2 To characterize the existing ambient air quality for the portion of the Delta and Suisun Marsh in the  
3 SVAB, data from nearby monitoring stations were reviewed.

4 For the most recent three years (2007-2009), monitoring data has shown:

- 5 " Concentrations of O<sub>3</sub> and 24-hour PM<sub>2.5</sub> have exceeded the NAAQS and CAAQS (ARB 2011c).
- 6 " Concentrations of PM<sub>10</sub> have exceeded the CAAQS but are below the NAAQS (ARB 2011c).
- 7 " Measured concentrations of CO and NO<sub>2</sub> have complied with the NAAQS and CAAQS (ARB  
8 2011c).
- 9 " Monitored SO<sub>2</sub> concentrations are extremely low, and lead concentrations are monitored as part  
10 of the air toxics program (ARB 2011c).

#### 11 9.4.2.2 San Joaquin Valley Air Basin

12 Portions of the Delta Planning Area lie in San Joaquin County, in the SJVAB, which is overseen by the  
13 San Joaquin Valley Air Pollution Control District (ARB 2009b, pp 4-30). The SJVAB consists of eight  
14 counties: San Joaquin, Stanislaus, Madera, Merced, Fresno, Kings, Tulare, and West Kern.

#### 15 9.4.2.2.1 Ambient Air Quality

16 To characterize the existing ambient air quality for the portion of the Delta and Suisun Marsh in the  
17 SJVAB, data from nearby monitoring stations were reviewed. For the most recent three years (2007-  
18 2009), monitoring data have shown:

- 19 " Concentrations of O<sub>3</sub> and 24-hour PM<sub>2.5</sub> have exceeded the NAAQS and CAAQS (ARB 2011c).
- 20 " Concentrations of PM<sub>10</sub> have exceeded the CAAQS but are below the NAAQS (ARB 2011c).
- 21 " Measured concentrations of CO and NO<sub>2</sub> have complied with the NAAQS and CAAQS (ARB  
22 2011c).
- 23 " Monitored SO<sub>2</sub> concentrations are extremely low, and lead concentrations are monitored as part  
24 of the air toxics program (ARB 2011c).

#### 25 9.4.2.3 San Francisco Bay Area Air Basin

26 The Delta and Suisun Marsh include portions of Contra Costa and Alameda counties in the SFBAAB.  
27 The Suisun Marsh is located in the portion of Solano County in the SFBAAB. The SFBAAB consists of a  
28 single air district, the Bay Area Air Quality Management District (BAAQMD), and nine counties: all of  
29 Napa, Marin, San Francisco, Contra Costa, Alameda, San Mateo, and Santa Clara counties; the southern  
30 portion of Sonoma County; and the southwestern portion of Solano County (ARB 2009b, pp 4-18).

#### 31 9.4.2.3.1 Ambient Air Quality

32 To characterize the existing ambient air quality for the portion of the Delta and Suisun Marsh in the  
33 SFBAAB, data from nearby monitoring stations were reviewed. For the most recent three years  
34 (2007-2009), monitoring data has shown:

- 35 " Concentrations of O<sub>3</sub> and 24-hour PM<sub>2.5</sub> have exceeded the NAAQS and CAAQS (ARB 2011c).
- 36 " Concentrations of PM<sub>10</sub> exceeded the CAAQS in 2008 but were below the CAAQS in 2007 and  
37 2009 (ARB 2011c). Concentrations of PM<sub>10</sub> were below the NAAQS (ARB 2011c).

- 1       " Measured concentrations of CO and NO<sub>2</sub> have complied with the NAAQS and CAAQS (ARB  
2       2011c).
- 3       " Monitored SO<sub>2</sub> concentrations are extremely low, and lead concentrations are monitored as part  
4       of the air toxics program (ARB 2011c).

### 5       **9.4.3 Additional Air Basins in the Delta Watershed**

6       The counties in the Delta watershed located within each air basin are presented in Table 9-1, along with  
7       non-attainment designations to characterize ambient air quality. (Non-attainment designations indicate  
8       that ambient air quality exceeds the applicable standard.) This section describes these air basins. In  
9       addition to the SVAB, SJVAB, and SFBAAB, the Delta watershed area also includes portions of the  
10      following air basins: Northeast Plateau, Mountain Counties, Great Basin Valleys, Lake County, and North  
11      Coast.

#### 12      **9.4.3.1 Northeast Plateau Air Basin**

13      The NPAB is made up of Siskiyou, Modoc, and Lassen counties (ARB 2011d). Modoc and Lassen  
14      counties are designated as nonattainment for the State PM<sub>10</sub> standards and Siskiyou County is designated  
15      as nonattainment of the State ozone standards (ARB 2009a). The northern part of the basin has lofty  
16      volcanic peaks while forested mountains dominate the southern and western portions of the basin  
17      (ARB 2011d).

#### 18      **9.4.3.2 Mountain Counties Air Basin**

19      The MCAB is made up of Plumas, Sierra, Nevada, Central Placer, West El Dorado, Amador, Calaveras,  
20      Tuolumne, and Mariposa counties (ARB 2011d). Nevada, Central Placer, West El Dorado, Amador,  
21      Calaveras, Tuolumne, and Mariposa counties are designated as nonattainment for the federal and State  
22      ozone standards (ARB 2009a). Plumas, Sierra, Nevada, Central Placer, West El Dorado, and Calaveras  
23      counties are designated as nonattainment for the State PM<sub>10</sub> standards (ARB 2009a). The basin covers the  
24      mountainous areas of central and northern Sierra Nevada.

#### 25      **9.4.3.3 Great Basin Valleys Air Basin**

26      The Great Basin Valleys Air Basin is made up of Alpine, Mono, and Inyo counties (ARB 2011d).  
27      Portions of Mono and Inyo counties (Mono Basin and Owens Valley) are designated as nonattainment for  
28      the federal PM<sub>10</sub> standards, and both counties are nonattainment for the State PM<sub>10</sub> and ozone standards.  
29      Alpine County is nonattainment for the State PM<sub>10</sub> standard (ARB 2009a). The air basin lies between the  
30      Sierra Nevada mountains to the west, the Great Basin to the northeast, and the Mojave Desert to the  
31      southeast (ARB 2011d).

#### 32      **9.4.3.4 Lake County Air Basin**

33      The Lake County Air Basin is made up of one county: Lake County (ARB 2011d). Lake County is  
34      designated as attainment for all ambient air quality standards (ARB 2009a). The basin is located  
35      approximately 80 miles north of San Francisco (ARB 2011d).

#### 36      **9.4.3.5 North Coast Air Basin**

37      The North Coast Air Basin (NCAB) is made up of Humboldt, Del Norte, Trinity, Mendocino, and north  
38      Sonoma counties (ARB 2011d). Portions of the NCAB are nonattainment for the State PM<sub>10</sub> standard  
39      (ARB 2009a). The basin stretches along the northern coastline through forested mountains (ARB 2011d).

## 9.4.4 Additional Air Basins in Areas Outside the Delta That Use Delta Water

Delta water is used throughout the state, not only within the Delta watershed. This section presents a description of the air basins located outside the Delta where Delta water is used.

### 9.4.4.1 North Central Coast Air Basin

The NCCAB is made up of Santa Cruz, San Benito and Monterey counties (ARB 2011d). The NCCAB is in attainment for all NAAQS and is designated as nonattainment for the State ozone and PM<sub>10</sub> standards (ARB 2009a). Though separated by the Santa Cruz Mountains and Coast Ranges to the north, wind can move air pollution from the SFBAAB contributing to elevated ozone concentrations (ARB 2011d).

### 9.4.4.2 South Central Coast Air Basin

The SCCAB is bordered by the Pacific Ocean on the south and west and lies just north of the SCAB. The SCCAB is made up of San Luis Obispo, Santa Barbara and Ventura counties (ARB 2011d). San Luis Obispo, Santa Barbara, and Ventura counties are designated as nonattainment for the State ozone and PM<sub>10</sub> standards. Ventura County is designated as nonattainment for the State PM<sub>2.5</sub> standards and the federal ozone standard (ARB 2009a). Wind patterns link Santa Barbara and Ventura counties with the SCAB. San Luis Obispo County is separated from these counties by mountains, and the air is linked more with the SFBAAB and SJVAB. Additionally, air emissions from the SCAB can be blown offshore, and then carried to the coastal cities of the SCCAB. Under some conditions, the reverse air flow can carry pollutants from the SCCAB to the SCAB and contribute to ozone violations there (ARB 2011d).

### 9.4.4.3 South Coast Air Basin

The SCAB is California's largest metropolitan region. The area includes the southern two-thirds of Los Angeles County, all of Orange County, and the western urbanized portions of Riverside and San Bernardino counties (ARB 2009b, p. 4-4). Twenty-eight percent of the State's total criteria pollutant emissions are generated within the basin (ARB 2009b, p. 4-4).

The SCAB is bounded by the Pacific Ocean on the west and by mountains on the other three sides. The persistent high pressure system and frequent low inversion heights caused by the mountains act together to trap pollutants in the air basin (ARB 2009b, p. 4-4). The SCAB is designated as nonattainment for the federal and State ozone, PM<sub>10</sub> and PM<sub>2.5</sub> standards (ARB 2009a, p. 4-5).

### 9.4.4.4 Mojave Desert Air Basin

The MDAB covers most of California's high desert and is made up of eastern Kern and Riverside counties and northern Los Angeles and San Bernardino counties. The San Gabriel and San Bernardino mountains lie to the south, separating the MDAB from the SCAB. To the northwest, the Tehachapi Mountains separate the MDAB from the SJVAB (ARB 2011b). The MDAB is designated as nonattainment for the federal and State ozone and PM<sub>10</sub> standards (ARB 2009a).

Air from the SCAB is carried over the San Gabriel Mountains, heavily impacting the areas just to the north of the SCAB. The downwind passes through the Tehachapi Mountains carry air emissions from the SJVAB (ARB 2011d). Due to the impacts from the SCAB, the worst air quality in the MDAB is along the southern edge that borders the SCAB. This is also where most of the population within the air basin (ARB 2011d) is located.

#### 1    **9.4.4.5    *San Diego Air Basin***

2    The SDAB is in the southwest corner of California and comprises all of San Diego County (ARB 2009b,  
3    p. 4-44). The population and emissions are concentrated in the western portion of the air basin, which is  
4    bordered on the west by the Pacific Ocean. The climate is relatively mild near the ocean, with higher  
5    temperatures and seasonal variations further inland (ARB 2009b, p. 4-44).

6    The SDAB is designated as nonattainment for the federal ozone standard and the State ozone, PM<sub>10</sub> and  
7    PM<sub>2.5</sub> standards (ARB 2009a). Air quality in the SDAB is impacted not only by local emission sources  
8    but also from transport from the SCAB and Mexico. Although impacts from transport are important,  
9    studies show that emissions from the SDAB are sufficient, on their own, to cause ozone violations (ARB  
10   2009b, p. 4-44).

### 11   **9.4.5    Other Areas of California**

12   As described in Section 2A, Proposed Project and Alternatives, Delta Plan policies and recommendations  
13   could directly or indirectly lead to construction of new or modified facilities throughout California.  
14   Projects could be constructed, modified, or reoperated in the Delta watershed and areas outside the Delta  
15   that use Delta water, in addition to the Delta. Water use could also be modified in the areas outside the  
16   Delta that use Delta water, in addition to the Delta. Those areas include a wide range of land uses that  
17   range from agricultural, rural residential, and suburban to high-density urban.

## 18   **9.5    Impacts Analysis of Project and** 19   **Alternatives**

### 20   **9.5.1    Assessment Methods**

21   The Proposed Project and alternatives would not directly result in construction or operation of projects or  
22   facilities and therefore would result in no direct impacts on air quality. The Proposed Project and  
23   alternatives could ultimately result in or encourage implementation of actions or development of projects,  
24   such as facilities or infrastructure, as described in Section 2A, Proposed Project and Alternatives.  
25   Examples of potential actions include conversion of agricultural lands for ecosystem restoration and land  
26   fallowing to accommodate water transfers. Projects may include water and wastewater treatment plants;  
27   conveyance facilities, including pumping plants; surface water or groundwater storage facilities;  
28   ecosystem restoration projects; flood control levees; or recreation facilities. Implementation of these types  
29   of actions and construction and operation of these types of projects could result in air contaminant  
30   emissions at levels that could contribute to an existing or potential violation of applicable air quality  
31   standards, contribute to non-attainment conditions, or further degrade air quality.

32   The precise magnitude and extent of project-specific impacts on air quality would depend on the type of  
33   action or project being evaluated, its specific location, its total size, and a variety of project- and site-  
34   specific factors that are undefined at the time of preparation of this program-level environmental impact  
35   report (EIR). Project-specific air quality impacts would be addressed in project-specific environmental  
36   documents prepared by the lead agency at the time the projects are proposed for approval.

37   With this program-level analysis, mitigation measures have been identified for consideration by lead  
38   agencies at the time the projects are proposed for implementation. For covered actions under the Delta  
39   Plan, these mitigation measures are designed to reduce the impacts of the Proposed Project. Project-level  
40   analysis by the agency proposing the covered action will determine whether the measures are sufficient to  
41   reduce those impacts to a less-than-significant level. Depending upon the site-specific characteristics of  
42   the project and the environment, the mitigation measures identified by the lead agencies may not be

1 adequate to mitigate impacts to a less-than-significant level. For actions taken by other agencies on the  
2 basis of Delta Plan recommendations but which are not covered actions, the implementation and  
3 enforcement of these measures would be within the jurisdiction and responsibility of public agencies  
4 other than the Delta Stewardship Council. Those agencies can and should adopt these measures as part of  
5 their approval of such actions, but the Delta Stewardship Council does not have the authority to require  
6 their adoption.

7 Air quality impacts from implementation of the alternatives were generally evaluated in terms of how  
8 project components could cause criteria pollutant emissions, odors, and TACs. Because the project level  
9 details of construction and operation needed to determine quantities, timing and locations of air  
10 emissions, are not available, air quality impacts for the alternatives were qualitatively evaluated for  
11 significance based on the estimated magnitude and types of emissions that might result from project  
12 construction and operation. Potential impacts were also evaluated based on a review of environmental  
13 documents from other projects with components or including activities of a size and type similar to those  
14 expected to be included in projects that may be encouraged by the Delta Plan.

15 Construction and operations of future projects would result in criteria pollutant emissions. Construction of  
16 projects would result in emissions of PM<sub>10</sub> and PM<sub>2.5</sub> from fugitive dust, generated primarily during  
17 earthmoving activities. Other sources of fugitive dust include vehicle travel on paved and unpaved roads,  
18 creation and management of borrow sites, concrete batch plants, and material handling, storage, and  
19 transport. Emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, and CO<sub>2</sub> would result from combustion of fuels in  
20 construction equipment and material transport trucks. Similar emissions, at lower levels, may result from  
21 maintenance and operation. Implementation of standard best management practices (BMP) during  
22 construction and operation would reduce emissions and emissions impacts. Potential air quality impacts  
23 that could result from construction and operation of projects are discussed and mitigation measures are  
24 identified as Impact 9-1 and Mitigation Measure 9-1, respectively.

25 Odors may result from future projects such as water recycling plants and ecosystem restoration projects,  
26 especially if they involve or would result in anaerobic decomposition of organic materials. Odors rarely  
27 cause physical health effects but may be unpleasant and may result in complaints from the public. Odor  
28 impacts vary in frequency and severity, depending on the nature, frequency, and intensity of the source,  
29 the wind speed and direction, and the sensitivity and location of the receptors. Projects may result in  
30 objectionable odors if located near receptors. Air districts typically regulate odor sources under their  
31 nuisance regulations, and base the level of significance of odors on the number of complaints they  
32 receive. Potential odor impacts are discussed and mitigation measures are identified as Impact 9-2 and  
33 Mitigation Measure 9-2, respectively.

34 Accurate quantification of potential human exposures to air pollutants resulting from future projects and  
35 related health risk characterization requires detailed site-specific information which is not available at this  
36 program level. As a result, potential impacts that may be associated with exposure of sensitive receptors  
37 to pollutants such as TACs are discussed qualitatively in Impact 9-3 and Mitigation Measure 9-3.

## 38 9.5.2 Thresholds of Significance

39 Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, an impact related  
40 to air quality<sup>1</sup> is considered significant if the proposed project would do any of the following:

- 41 " Conflict with or obstruct implementation of the applicable air quality plan
- 42 " Violate any air quality standard or contribute substantially to an existing or projected air quality  
43 violation

---

<sup>1</sup> A discussion of greenhouse gases and related CEQA significance criteria and impacts is presented in Section 22, Climate Change and Greenhouse Gas Emissions.

- 1        "    Result in a cumulatively considerable net increase of any criteria pollutant for which the project
- 2            region is non-attainment under an applicable federal or State ambient air quality standard
- 3            (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- 4        "    Expose sensitive receptors to substantial pollutant concentrations
- 5        "    Create objectionable odors affecting a substantial number of people

6    The CEQA guidelines for air quality in Appendix G further indicate that, where available, the thresholds  
7    of significance established by the applicable air quality management or air pollution control district may  
8    be relied upon to make the significance determinations. As individual projects are proposed, the impacts  
9    of these individual projects will need to be evaluated in site-specific environmental documents prepared  
10   by the lead agencies.

11   The impact analysis for the Proposed Project was structured to allow more detailed analysis of impacts as  
12   they relate to the five Delta Plan policy elements (reliable water supply, Delta ecosystem restoration,  
13   water quality improvement, flood risk reduction, and protection and enhancement of the Delta as an  
14   evolving place). To avoid unnecessary repetition in the analysis of impacts that could occur under the  
15   alternatives compared to the Proposed Project, each impact is discussed only once for each alternative  
16   rather than for each policy element of each alternative.

## 17   **9.5.3   Proposed Project**

### 18   **9.5.3.1   Reliable Water Supply**

19   As described in Sections 2A and 2B, the Delta Plan does not direct the construction of specific projects,  
20   nor would projects be implemented under the direct authority of the Delta Stewardship Council. However,  
21   the Delta Plan seeks to improve water supply reliability by encouraging various actions, which if taken  
22   could lead to completion, construction and/or operation of projects that could provide a more reliable  
23   water supply. Such projects and their features could include the following:

- 24        "    Surface water facilities (water intakes, treatment and conveyance facilities, reservoirs)
- 25        "    Groundwater projects (wells, wellhead treatment, conveyance facilities)
- 26        "    Ocean desalination projects (water intakes, brine outfalls, treatment and conveyance facilities)
- 27        "    Recycled wastewater and stormwater projects (treatment and conveyance facilities)
- 28        "    Water transfers
- 29        "    Water use efficiency and conservation program implementation
- 30        "    Hydroelectric generation (e.g., powerhouse, transmission lines)

31   The number and location of all potential projects that could be implemented are not known at this time.  
32   Three possible projects, however, are known to some degree and are named in the Delta Plan. These are  
33   the North of Delta Offstream Storage Investigation (aka Sites Reservoir), Los Vaqueros Reservoir Project  
34   (Phase 2), and the Upper San Joaquin River Basin Storage Investigation Plan (aka Temperance Flat). It  
35   also encourages the update of Bulletin 118 that could lead to improvements in groundwater management  
36   and development of related facilities.

#### 37   **9.5.3.1.1   Impact 9-1a: Construction and Operations of Projects Could Conflict with an Applicable** 38                   **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a** 39                   **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

40   As described in the environmental setting, most of the counties included in the study area are designated  
41   as nonattainment for one or more of the federal and State O<sub>3</sub> and PM standards. Under federal and State  
42   laws, regulatory agencies in areas that are not meeting ambient air quality standards must develop and  
43   maintain SIPs and/or air quality management plans (AQMP) to reduce or limit emissions and demonstrate

1 future attainment of ambient air quality standards. In addition to preparing air quality plans, many  
2 California air districts implement regulations, recommend emission reduction strategies, and provide  
3 CEQA guidance and thresholds of significance to facilitate evaluation of projects and mitigate the air  
4 quality impacts associated with their construction and operation. Project-specific estimates of the types,  
5 quantities, timing, and location of emissions, and in some cases, predictive modeling of pollutant  
6 concentrations, are used as an indication of the project's potential to conflict with applicable air quality  
7 plans, contribute substantially to an existing or projected air quality violation, or result in a cumulatively  
8 considerable net increase of any non-attainment pollutant or precursor.

### 9 *Effects of Project Construction*

10 The Delta Plan encourages projects that would include the construction and operation of surface water  
11 and groundwater storage facilities, water intakes, groundwater wells, ocean desalination projects, recycled  
12 wastewater and stormwater treatment facilities, conveyance facilities (canals, pipelines, tunnels, siphons,  
13 and pumping plants), water transfers, and reservoir-related hydroelectric generation. Construction-related  
14 activities for large surface water reservoirs, such as the Sites, Los Vaqueros, or Temperance Flat  
15 Reservoir projects described in Section 2A, Proposed Project and Alternatives, require extensive use of  
16 construction equipment, such as excavators, graders, scrapers, bulldozers, backhoes, and concrete mixing  
17 and pumping trucks. Haul trucks would be used to move borrow and/or spoils and other materials. This  
18 type of reservoir project would also include construction of related facilities, such as conveyance  
19 networks, hydroelectric facilities, water intakes, pumping plants, service roads, dams, and buildings. Less  
20 extensive use of heavy equipment and smaller construction footprints would be needed for smaller storage  
21 and regulating reservoirs, reservoir modifications, ocean desalination projects, recycled wastewater and  
22 stormwater treatment facilities, and groundwater storage facilities that might be constructed to improve  
23 water supply reliability. These projects could be located in one or more air basins, and would be located  
24 in the Delta or in areas outside the Delta, as described in Section 2A, Proposed Project and Alternatives,.

25 Construction-related emissions for projects would arise from a variety of activities, including:  
26 (1) generation of fugitive dust by equipment used for grading, excavation, road building, and other earth-  
27 moving activities; (2) fugitive dust from travel by construction equipment, haul trucks, and worker  
28 vehicles on paved and unpaved surfaces; (3) fugitive dust from establishing borrow sites and from storing  
29 and handling materials; and (4) exhaust from fuel combustion in construction equipment, trucks, and  
30 worker vehicles.

31 Construction-related fugitive dust emissions would vary from day to day, depending on the level and type  
32 of activity, silt and clay content of the soil, and meteorological conditions. In the absence of mitigation  
33 measures, construction activities may result in significant quantities of dust, and as a result, local  
34 visibility and PM<sub>10</sub> concentrations may be adversely affected on a temporary and intermittent basis during  
35 construction.

36 Fuel combustion by construction equipment, trucks, and worker vehicles would generate criteria air  
37 pollutant emissions. Emissions of the ozone precursors, ROG and NO<sub>x</sub>, from these emissions sources  
38 would temporarily contribute to regional atmospheric ozone problems during the construction period.

39 It is unclear at this time how implementation of the Proposed Project would result in specific construction  
40 activities, including the location, number, capacity, and methods and duration of construction activities.  
41 However, the Delta Plan encourages at least to some degree implementation of the North of Delta  
42 Offstream Storage Investigation, Los Vaqueros Reservoir Project (Phase 2), and the Upper San Joaquin  
43 River Basin Storage Investigation Plan, with all three projects involving activities that would be within  
44 the Delta watershed but outside the primary planning area. These are possible new or expanded surface  
45 water storage facilities. The Delta Plan also encourages implementation of Update Bulletin 118 for  
46 groundwater basin evaluations, which may in turn encourage projects aimed at more sustainable  
47 groundwater planning and use.

1 The Los Vaqueros Reservoir Expansion Project has undergone project-specific environmental review via  
2 a draft and final environmental impact statement (EIS)/EIR (Reclamation et al. 2009); the other two  
3 projects have not. The Los Vaqueros Draft EIS/EIR provides analogous information about the impacts  
4 expected from construction of the two other projects, which are similar to the Los Vaqueros project. In  
5 addition, the project-specific EIR for another surface storage project (not named in the Delta Plan)—the  
6 Calaveras Dam Replacement Project (2009)—also provides analogous information.

7 The Los Vaqueros Reservoir Expansion Draft EIS/EIR evaluated three alternatives to increase water  
8 storage, a new Delta intake structure, and conveyance facilities. The lead agency found that impacts of  
9 construction emissions would be less than significant with mitigation, but the conclusions of the study  
10 were based on BAAQMD CEQA guidance that is now out of date, and mitigation was proposed only for  
11 dust control, even though significant impacts were identified for other pollutants.

12 The San Francisco Public Utilities Commission (SFPUC) found in the draft EIR prepared for the  
13 Calaveras Dam Replacement project (SFPUC 2009) that, while the impacts of emissions of ozone  
14 precursors during construction could be mitigated to less than significant levels under the then applicable  
15 thresholds of significance, these impacts would be significant and unavoidable under the BAAQMD's  
16 new CEQA guidelines, which were adopted in 2010.

17 Environmental documents for desalination plant projects reviewed for potential impacts included EIRs for  
18 the Carlsbad Precise Development Plan and Desalination Plant Project (City of Carlsbad 2005) and the  
19 draft EIR for the Huntington Beach Seawater Desalination Project (City of Huntington Beach 2005). The  
20 City of Huntington Beach concluded that air quality impacts would be less than significant with  
21 mitigation, except for construction-related NO<sub>x</sub> impacts, which would be significant and unavoidable. The  
22 City of Carlsbad concluded that air quality impacts for its desalination plant project would be less than  
23 significant at the project level, but cumulative regional impacts related to the nonattainment pollutants  
24 PM10 and ozone would be significant and unavoidable.

25 In the Supplemental EIR/EIS for the Riverside-Corona Feeder Pipeline (WMWD and Reclamation 2011),  
26 Western Municipal Water District (WMWD) concluded that construction-related emissions from fuel  
27 combustion in construction equipment and fugitive dust would result in significant impacts after  
28 mitigation.

29 The Davis-Woodland Water Supply Project includes a water intake in the Sacramento River, pumping  
30 plants, conveyance, and water treatment facilities. The project final EIR (City of Davis et al. 2007) lists  
31 three significant and unavoidable air quality impacts from project implementation: (1) project  
32 construction and/or operation would violate an air quality standard or contribute substantially to an  
33 existing or projected air quality violation, (2) the project would conflict with the applicable air quality  
34 plan, and (3) project construction and/or operation would expose sensitive receptors to substantial  
35 pollutant concentrations. The summary table that presents mitigation measures and residual impacts with  
36 mitigation states, "No mitigation available to lessen temporary construction-related impacts to less-than-  
37 significant levels. Air quality impacts during operations will be less than significant" (City of Davis et al.  
38 2007).

39 Review of the environmental documents for these projects gives a sense of the types and levels of air  
40 pollutant emissions and feasible mitigation that could be expected from projects that would be encouraged  
41 by the Delta Plan and have similar components and activities (see Section 2B, Introduction to Resource  
42 Sections, and Appendix H for additional information on how these documents were used). Based on these  
43 examples, it is possible that air quality impacts of projects encouraged by the Delta Plan may be less than  
44 significant, or could be mitigated to a less-than-significant level. The details of many of the aspects of  
45 projects encouraged by the Proposed Project, however, are not currently known, and it is possible that  
46 significant and unavoidable impacts on air quality could occur. Impacts of large-scale surface water  
47 storage projects may be more difficult to avoid or mitigate to a less-than-significant level because of the

1 magnitude of the construction, required levels of operations and maintenance, and the scale of the  
2 geographic area disturbed. Therefore, one or more of the water supply projects encouraged by the Delta  
3 Plan might result in a significant and unavoidable impact on air quality. This is particularly true for  
4 temporary construction impacts, which several project EIRs (e.g., Calaveras Dam, Davis-Woodland, and  
5 City of Huntington Beach) identified as significant and unavoidable.

6 In this program-level study, construction-related emissions from future water supply reliability projects  
7 are considered significant, because of existing air quality issues in the study area, and the uncertainties  
8 regarding size, timing, and locations of potential projects, as well as the applicable jurisdictional air  
9 quality management district (AQMD) or air pollution control district (APCD) regulations, CEQA  
10 guidance, thresholds of significance, and attainment plans.

### 11 *Effects of Project Operations*

12 Emissions associated with operations of water supply reliability projects would depend on several factors,  
13 such as the size and type of project, the number of employees and types of equipment, the increased  
14 traffic on the local and regional roadway network (including additional haul trucks and workers), and the  
15 level of operations activities. Emissions similar to those expected during construction, but at lower levels,  
16 would likely result from maintenance and operation of projects. For example, operational sources of  
17 fugitive dust would primarily be maintenance equipment and truck movement over paved and unpaved  
18 surfaces. Stationary sources, such as electrical generators, would be subject to permitting requirements to  
19 limit emissions.

20 Operation of surface water supply projects could result in significant fluctuations of water levels, leaving  
21 exposed barren land at the reservoir's edges when the water level is lowered. Exposed areas may be  
22 sources of fugitive dust, depending on local conditions of temperature, humidity, and wind. Water  
23 transfers to increase water supply reliability may result in land fallowing and may increase fugitive dust  
24 unless BMPs for soil conservation are implemented. Conversion of agricultural lands to other land uses  
25 may result in less equipment and chemical use, and reduced emissions.

26 Previously completed environmental reviews for similar surface water storage facility projects were  
27 reviewed during preparation of this EIR. The Draft EIS/EIR for the Los Vaqueros Reservoir Project  
28 (Reclamation et al. 2009) and the Final EIR for the Calaveras Dam Replacement Project (SFPUC 2011)  
29 both concluded that emissions impacts associated with operations would be less than significant. As a  
30 mitigation measure for the Lower Yuba River Accord (DWR et al. 2007), which addresses water  
31 management including water transfers, the project proponent must provide certification documentation to  
32 U.S. Bureau of Reclamation (Reclamation) and California Department of Water Resources (DWR)  
33 indicating that groundwater pumping sources would not increase emissions, to ensure that no net impacts  
34 to air quality would occur.

35 Other environmental documents for desalination plant projects reviewed for potential impacts included  
36 EIRs for the Carlsbad Precise Development Plan and Desalination Plant Project (City of Carlsbad 2005),  
37 and the Huntington Beach Seawater Desalination Project (City of Huntington Beach 2005). The City of  
38 Huntington Beach concluded that air quality impacts from operations would be less than significant with  
39 mitigation. The City of Carlsbad concluded that impacts from its desalination plant project would be less  
40 than significant at the project level, but cumulative regional impacts related to the nonattainment  
41 pollutants PM<sub>10</sub> and ozone would be significant and unavoidable.

### 42 *Conclusion*

43 It is unclear at this time how implementation of the Proposed Project would result in construction and  
44 operations of water supply reliability projects, including the location, number, capacity, operational  
45 criteria, and methods and duration of activities. The nature and magnitude of construction-related air  
46 quality impacts for the projects encouraged by the Delta Plan will depend on the specific location and

1 characteristics of the projects at the time they are implemented, and the specific mitigation measures  
2 adopted by the implementing agencies. In most cases, compliance with required permits and approvals  
3 and implementation of mitigation measures would reduce impacts associated with projects to a less-than-  
4 significant level. In some cases, construction or operations emissions may exceed the applicable air  
5 district significance levels, even with mitigation, and could result in a significant, unavoidable impact.  
6 This situation is most likely to occur during construction of large infrastructure projects, and may be  
7 temporary in nature. Longer-term air quality impacts could result from operation of large or complex  
8 facilities, such as surface reservoirs, desalination facilities, or conveyance systems. These impacts may be  
9 significant, depending on the size and type of project, the number of employees and types of equipment  
10 used, the increased traffic on the local and regional roadway network (including additional haul trucks  
11 and workers), and the level of operations activities.

12 Quantification of emissions would be too speculative at this program level because of unknown project  
13 details, localized variables, and operational considerations. Project-level impacts would be addressed in  
14 project-specific environmental analysis conducted by the lead agency at the time projects are proposed for  
15 implementation, and required mitigation and operating conditions would be reflected in needed permits  
16 and approvals for the projects. However, because of existing air quality issues in the study area and the  
17 uncertainties regarding size, timing, and locations of potential projects, the potential impact of emissions  
18 from future water supply reliability projects is considered **significant**.

#### 19 9.5.3.1.2 Impact 9-2a: Construction and Operations of Projects Could Create Objectionable Odors 20 Affecting a Substantial Number of People

##### 21 *Effects of Project Construction*

22 Construction-related activities for large surface water reservoirs or other water supply reliability projects  
23 would require the use of heavy equipment, such as excavators, graders, scrapers, bulldozers, backhoes,  
24 and concrete mixing and pumping trucks. Haul trucks would be used to move borrow and/or spoils and  
25 other materials. In some cases, odors may be generated during construction by disturbance of soils or  
26 structures. Odors may be generated through exhaust emissions from diesel equipment, but the emission  
27 sources would not remain in one location for long periods of time, and the emissions would be  
28 intermittent and would dissipate from the source rapidly. For these reasons, construction is not expected  
29 to result in objectionable odors affecting a substantial number of people.

##### 30 *Effects of Project Operations*

31 Operation of large surface water reservoirs or other water supply reliability projects would not be  
32 expected to generate odors. Shallow water areas and canals would be maintained to inhibit algal or  
33 vegetative growth, and avoid conditions conducive to anaerobic digestion. The locations of these projects  
34 could be in the Delta or in areas outside the Delta that use Delta water.

35 Previously completed environmental reviews for similar surface water storage facility projects were  
36 reviewed during preparation of this EIR. The Draft EIS/EIR for the Los Vaqueros Reservoir Project  
37 (Reclamation et al. 2009) and the EIR for the Calaveras Dam Replacement Project (SFPUC 2011)  
38 concluded that odor impacts associated with operations would be less than significant.

##### 39 *Conclusion*

40 It is unclear at this time how implementation of the Proposed Project would result in construction and  
41 operations of projects, including the location, number, capacity, operational criteria, and methods and  
42 duration of construction activities and types of operations activities. Because of the uncertainties  
43 underlying these future projects, impacts of odors cannot be accurately determined. Construction and

1 operations of large surface water reservoirs or other water supply reliability projects would not be  
2 expected to result in objectionable odors affecting a substantial number of people. The potential impact  
3 due to objectionable odors from future water supply reliability projects is considered **less than**  
4 **significant**.

#### 5 9.5.3.1.3 Impact 9-3a: Construction or Operation of Projects Could Expose Sensitive Receptors to 6 Substantial Pollutant Concentrations

##### 7 *Effects of Project Construction*

8 Construction-related activities for large surface water reservoirs or other water supply reliability projects  
9 would require the use of heavy equipment, such as excavators, graders, scrapers, bulldozers, backhoes,  
10 and concrete mixing and pumping trucks. Haul trucks would be used to move borrow and/or spoils and  
11 other materials. Emissions of CO and TACs can result from fuel combustion to support site preparation  
12 and construction activities required for projects. TACs that could be generated by the combustion of fuels  
13 include benzene, formaldehyde, acrolein, and other products of incomplete combustion. Diesel particulate  
14 matter (DPM) from diesel-fueled on-road haul trucks and off-road equipment is the primary TAC of  
15 concern from construction activities. Depending on the project, other local issues may need to be  
16 considered, such as the potential for CO hot spots to result from construction-related changes in traffic  
17 patterns, or airborne naturally occurring asbestos to result from land disturbance activities. Health impacts  
18 from human exposure to TACs from construction are dependent on the magnitude of the concentrations  
19 that sensitive receptors may be exposed to, the duration of exposure, and the relative toxicities of the  
20 individual pollutants.

21 Because of the variable nature of construction activity, the generation of CO and TAC emissions in most  
22 cases would be temporary, especially considering the short amount of time such equipment is typically  
23 within an influential distance that would result in the exposure of sensitive receptors to substantial  
24 concentrations (BAAQMD 2011). In its CEQA guidelines, the BAAQMD cites studies by ARB that show  
25 concentrations of mobile-source diesel PM are typically reduced by 70 percent at a distance of approxi-  
26 mately 500 feet from the source. In addition, current models and methodologies for conducting health risk  
27 assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not  
28 correlate well with the temporary and highly variable nature of construction activities (BAAQMD 2011).  
29 This results in difficulties with producing accurate estimates of health risk (BAAQMD 2011).

30 Previously completed environmental documents for surface water storage facility projects were reviewed  
31 during preparation of this EIR. The Draft EIS/EIR for the Los Vaqueros Reservoir Project (Reclamation  
32 et al. 2009) and the EIR for the Calaveras Dam Replacement Project (SFPUC 2011) concluded that  
33 impacts associated with construction emissions would be less than significant with mitigation for human  
34 exposures to DPM, and less than significant for other TACs.

##### 35 *Effects of Project Operations*

36 Emissions associated with operations of projects would depend on several factors, such as the size and  
37 type of project, the number of employees and types of equipment, the increased traffic on the local and  
38 regional roadway network (including additional haul trucks and workers), the level of operations  
39 activities, and locations of sensitive receptors. Emissions similar to those expected during construction,  
40 but at lower levels, would likely result from maintenance and operation of projects.

41 The Draft EIS/EIR for the Los Vaqueros Reservoir Project (Reclamation et al. 2009) and the EIR for the  
42 Calaveras Dam Replacement Project (SFPUC 2011) concluded that TAC impacts associated with  
43 operations would be less than significant.

## 1 *Conclusion*

2 It is unclear at this time how implementation of the Proposed Project would result in construction and  
3 operations of projects, including the location, number, capacity, operational criteria, and methods and  
4 duration of construction activities and types of operations activities. Because of the uncertainties  
5 underlying this program-level assessment, CO and TAC emissions and the exposure of sensitive receptors  
6 in the Delta, Delta watershed, or areas outside the Delta that use Delta water cannot be accurately  
7 quantified. Significant impacts of this nature would be most likely to occur during construction of large  
8 infrastructure projects, due to diesel exhaust from construction equipment, and these impacts would be  
9 temporary in nature. For operation and maintenance of projects, it is assumed that CO and TAC emissions  
10 from stationary sources would be subject to air district permitting requirements to limit exposure to  
11 sensitive receptors. In addition, mobile sources would be subject to ARB emission standards and  
12 Airborne Toxic Control Measures. Therefore, operations and maintenance activities are not anticipated to  
13 expose sensitive receptors to substantial pollutant concentrations.

14 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
15 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
16 conditions would be reflected in needed permits and approvals for the projects. However, because of the  
17 potential for sensitive receptors in the vicinity of facilities to be exposed to pollutants, the potential  
18 impact of emissions from future water supply reliability projects is considered **significant**.

### 19 *9.5.3.2 Delta Ecosystem Restoration*

20 As described in Sections 2A and 2B, the Delta Plan does not direct the construction of specific projects,  
21 nor would projects be implemented under the direct authority of the Delta Stewardship Council. However,  
22 the Delta Plan seeks to improve the Delta ecosystem by encouraging various actions and projects, which  
23 if taken could lead to completion, construction and/or operation of projects that could improve the Delta  
24 ecosystem.

25 Features of such actions and projects that could be implemented as part of efforts to restore the Delta  
26 ecosystem include the following:

- 27     " Floodplain restoration
- 28     " Riparian restoration
- 29     " Tidal marsh restoration
- 30     " Ecosystem stressor management (e.g., continuation of ongoing programs managing pesticide  
31 runoff, water quality, water flows)
- 32     " Invasive species management (including removal of invasive vegetation)

33 The number and location of all potential projects that could be implemented are not known at this time.  
34 The following restoration areas, projects, and programs, however, are known to varying degrees and are  
35 named in the Delta Plan:

- 36     " Cosumnes River-Mokelumne River Confluence: North Delta Flood Control and Ecosystem  
37 Restoration Project
- 38     " Suisun Marsh Habitat Management, Preservation, and Restoration Plan (includes Hill Slough  
39 Restoration Project)
- 40     " Cache Slough Complex (includes Prospect Island Restoration Project)
- 41     " Yolo Bypass

- 1        " Lower San Joaquin River Bypass Proposal
- 2        " Water Quality Control Plan Update for the San Francisco Bay/Sacramento–San Joaquin Delta
- 3        Estuary (water flow objectives update)
- 4        " Delta Conservancy Strategic Plan
- 5        " Variance of the U.S. Army Corps of Engineers’ (USACE) Vegetation Policy
- 6        " California Department of Fish and Game’s Stage Two Actions for Nonnative Invasive Species
- 7        included in the Ecosystem Restoration Plan for the Sacramento-San Joaquin Bay Delta

8 Of these, draft and final EIRs have been prepared for the North Delta Flood Control and Ecosystem  
9 Restoration Project (DWR 2010) and the Suisun Marsh Habitat Management, Preservation, and  
10 Restoration Plan (Reclamation et al. 2010).

### 11 9.5.3.2.1 Impact 9-1b: Construction and Operations of Projects Could Conflict with an Applicable 12 Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a 13 Cumulatively Considerable Net Increase of Nonattainment Pollutants

#### 14 *Effects of Project Construction*

15 Projects encouraged by the Delta Plan would include the construction of ecosystem restoration areas,  
16 including floodplain, riparian, tidal marsh, and wetland restoration areas, along with management of  
17 ecosystem stressors and invasive species, and modification of levees and associated infrastructure.  
18 Construction of restoration sites could involve topographic grading, removal or relocation of levee  
19 sections, exposure of bare soil, dredging, or changes in vegetation. These construction activities would be  
20 substantially more intense than those in the surrounding rural/agricultural landscape. Restoration would  
21 introduce habitat types such as tidal marsh, riparian corridors, and grassland to areas that are currently  
22 dominated by agricultural fields and, to a lesser extent, urban land uses.

23 Construction-related activities for large Delta ecosystem restoration projects would require use of heavy  
24 equipment, such as excavators, graders, scrapers, bulldozers, backhoes, and dredges. Haul trucks would  
25 be used to move borrow and/or spoils and other materials. Less-extensive use of heavy equipment and  
26 smaller construction footprints would be needed for smaller ecosystem restoration projects. The locations  
27 of these projects would most likely be in or near the Delta. Projects could be located in one or more air  
28 basins, and could be located in or near the Delta, Suisun Marsh, Cache Slough, Yolo Bypass, or the San  
29 Joaquin River, as described in Section 2A, Proposed Project and Alternatives.

30 The nature and magnitude of construction-related air quality impacts for the projects encouraged by the  
31 Delta Plan will depend on the specific location and characteristics of the projects at the time they are  
32 implemented, and the specific mitigation measures adopted by the implementing agencies. As explained  
33 below, in some situations, according to previously completed environmental reviews for similar projects  
34 considered as part of the preparation of this EIR, feasible mitigation exists to reduce significant impacts  
35 for these types of projects to a less-than-significant level. In other cases, construction emissions exceed  
36 the applicable air district significance thresholds, even with mitigation, and would result in significant,  
37 unavoidable air quality impacts.

38 Documents reviewed for potential impacts included the EIR for the North Delta Flood Control and  
39 Ecosystem Restoration Project (DWR 2010), which analyzes proposed flood management and ecosystem  
40 restoration projects in the Delta, and the Suisun Marsh Habitat Management, Preservation, and  
41 Restoration Plan Draft EIS/EIR (Reclamation et al. 2010), which addressed ecosystem restoration in the  
42 Suisun Marsh. The North Delta Flood Control and Ecosystem Restoration Project involves more  
43 construction activities than the Suisun Marsh Management, Preservation, and Restoration Plan. Some of  
44 the construction-related air quality impacts for the North Delta Flood Control project were considered

1 significant and unavoidable due to generation of pollutant emissions in excess of applicable significance  
2 thresholds, and the lack of feasible mitigation measures to reduce impacts to less than significant (DWR  
3 2010). The construction-related air quality impacts of the Suisun Marsh project were either less than  
4 significant with mitigation, or less than significant (Reclamation et al. 2010). The Davis-Woodland Water  
5 Supply Project Final EIR (City of Davis et al. 2007) lists three significant and unavoidable air quality  
6 impacts from project implementation: 1) project construction and/or operation would violate an air quality  
7 standard or contribute substantially to an existing or projected air quality violation, 2) the project would  
8 conflict with the applicable air quality plan, and 3) project construction and/or operation would expose  
9 sensitive receptors to substantial pollutant concentrations. The summary table in the final EIR that  
10 presents mitigation measures and residual impacts with mitigation states, “No mitigation available to  
11 lessen temporary construction-related impacts to less-than-significant levels. Air quality impacts during  
12 operations will be less than significant” (City of Davis et al. 2007).

13 Based on these examples, it is possible that air quality impacts of projects encouraged by the Delta Plan  
14 may be less than significant, or could be mitigated to a less-than-significant level. The details of many of  
15 the aspects of projects encouraged by the Proposed Project, however, are not currently known, and it is  
16 possible that significant and unavoidable impacts on air quality could occur. Impacts of large-scale  
17 ecosystem restoration projects may be more difficult to avoid or mitigate to a less-than-significant level  
18 because of the magnitude of the construction and the scale of the geographic area affected. Therefore, one  
19 or more of the ecosystem restoration projects encouraged by the Delta Plan might result in a significant  
20 and unavoidable impact on air quality. This is particularly true for temporary construction impacts in  
21 areas with stringent air quality requirements, where several project EIRs (e.g., North Delta Flood Control  
22 and Davis-Woodland) identified air quality impacts as significant and unavoidable.

### 23 *Effects of Project Operations*

24 Emissions associated with operations and maintenance of ecosystem restoration projects would likely be  
25 similar to those expected during construction, but at much lower levels. The types and levels of emissions  
26 would depend on several factors, such as the size and type of project, the number of employees and types  
27 of equipment used, the increased traffic on the local and regional roadway network (including additional  
28 trucks and worker vehicles), and the level and frequency of activities. In addition, water transfers to  
29 restore Delta ecosystems may result in conversion of agricultural lands to other land uses. This land  
30 conversion may result in less equipment and chemical use, and reduced emissions.

31 Documents reviewed for potential impacts included previously completed environmental documents for  
32 the North Delta Flood Control and Ecosystem Restoration Project (DWR 2010), the Suisun Marsh Habitat  
33 Management, Preservation, and Restoration Plan (Reclamation et al. 2010), and the Davis-Woodland  
34 Water Supply Project (City of Davis et al. 2007). Some of the operations-related air quality impacts for  
35 the North Delta Flood Control project were significant and unavoidable due to generation of pollutant  
36 emissions in excess of applicable significance thresholds. The Suisun Marsh did not list operations  
37 impacts. The Davis-Woodland Water Supply Project Final EIR (City of Davis et al. 2007) concluded that  
38 impacts during operations would be less than significant.

39 Quantification of operational emissions would be too speculative at this program level because of  
40 unknown project details, localized variables, and operational considerations. Project-level air quality  
41 impacts would be addressed in project-specific environmental analysis conducted by the lead agency at  
42 the time projects are proposed for implementation and required mitigation during construction would be  
43 reflected in needed permits and approvals for the projects. In most cases, compliance with required  
44 permits and approvals and implementation of mitigation measures would reduce impacts associated with  
45 projects to a less-than-significant level. In some cases, construction or operations emissions may exceed  
46 the applicable air district significance thresholds, even with mitigation, and could result in a significant,  
47 unavoidable impact. This situation is most likely to occur during construction of large Delta ecosystem  
48 restoration projects, and may be temporary in nature. However, because of existing air quality issues in

1 the study area, and the uncertainties regarding size, timing, and locations of potential projects, as well as  
2 the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance,  
3 and attainment plans, the potential impact of construction- and operation-related emissions from future  
4 Delta ecosystem restoration projects is considered significant.

#### 5 *Conclusion*

6 It is unclear at this time how implementation of the Proposed Project would result in construction and  
7 operations of Delta ecosystem restoration projects, including the location, number, capacity, operational  
8 criteria, and methods and duration of activities. Because of the uncertainties underlying this program-  
9 level assessment, impacts on air quality in the Delta, Delta watershed, or areas outside the Delta that use  
10 Delta water cannot be accurately quantified. In most cases, compliance with required permits and  
11 approvals and implementation of mitigation measures would reduce impacts associated with projects to a  
12 less-than-significant level. In some cases, construction or operations emissions may exceed the applicable  
13 air district significance thresholds, even with mitigation, and could result in a significant, unavoidable  
14 impact. This situation is most likely to occur during construction of large Delta ecosystem restoration  
15 projects, and may be temporary in nature.

16 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
17 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
18 conditions would be reflected in needed permits and approvals for the projects. However, because of  
19 existing air quality issues in the study area and the uncertainties regarding size, timing, and locations of  
20 potential projects, the potential impact of emissions from future Delta ecosystem restoration projects is  
21 considered **significant**.

#### 22 **9.5.3.2.2 Impact 9-2b: Construction and Operations of Projects Could Create Objectionable Odors** 23 **Affecting a Substantial Number of People**

##### 24 *Effects of Project Construction*

25 Construction-related activities for Delta ecosystem restoration projects could require the use of heavy  
26 equipment, such as excavators, graders, scrapers, bulldozers, backhoes, and dredges. Haul trucks would  
27 be used to move borrow and/or spoils and other materials. In some cases, odors may be generated during  
28 construction by disturbance of soils, sediments, or structures. Odors may be generated through exhaust  
29 emissions from diesel equipment, but the emission sources would not remain in one location for long  
30 periods of time, and the emissions would be intermittent and would dissipate from the source rapidly. For  
31 these reasons, construction is not expected to result in objectionable odors affecting a substantial number  
32 of people.

33 Few of the previously completed environmental documents for similar ecosystem projects evaluated  
34 construction-related odors. The Suisun Marsh Habitat Management, Preservation, and Restoration Plan  
35 Draft EIS/EIR (Reclamation et al. 2010) indicated that odor impacts from construction would be less than  
36 significant.

##### 37 *Effects of Project Operations*

38 Operation of Delta ecosystem restoration projects, such as restored wetlands, could result in periodic odor  
39 impacts. The locations of these projects would most likely be in the primary study area.

40 One common source of odors is anaerobic digestion, the biological decomposition of organic matter in the  
41 absence of molecular oxygen. As a result, odorous compounds, such as ammonia and hydrogen sulfide,  
42 are generated and may be released into the environment. The anaerobic digestion process frequently  
43 occurs naturally in marshes and wetlands. Marshes and wetlands can also be a source of odors during

1 some time periods when ponds or shallow water areas undergo algal or vegetative growth. Marshes,  
2 wetlands, shallow water areas, or canals created during Delta ecosystem restoration actions may require  
3 periodic maintenance to inhibit algal or vegetative growth, and avoid conditions conducive to anaerobic  
4 digestion.

5 The occurrence and severity of odor impacts depend on numerous factors, including the nature,  
6 frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors.  
7 Although odors rarely cause any physical harm, they can still be very unpleasant, leading to distress and  
8 generating citizen complaints to local agencies.

9 Few of the previously completed environmental documents for similar ecosystem projects evaluated  
10 operations-related odors. The Davis-Woodland Water Supply Project EIR (City of Davis et al. 2007)  
11 indicated that odor impacts from operations would be less than significant.

### 12 *Conclusion*

13 It is unclear at this time how implementation of the Proposed Project would result in construction and  
14 operations of projects, including the location, number, capacity, operational criteria, and methods and  
15 duration of construction activities and types of operations activities. Because of the uncertainties  
16 underlying these future projects, impacts of odors cannot be accurately quantified. Project-level impacts  
17 would be addressed in future site-specific environmental analysis conducted at the time such projects are  
18 proposed. However, because some projects such as development of wetlands or marshes for ecosystem  
19 restoration may be implemented in populated areas and odors may result, the potential impact due to  
20 objectionable odors from Delta ecosystem restoration projects is considered **significant**.

### 21 **9.5.3.2.3 Impact 9-3b: Construction or Operation of Projects Could Expose Sensitive Receptors** 22 **to Substantial Pollutant Concentrations**

#### 23 *Effects of Project Construction*

24 The types of construction equipment used and the types of construction activities undertaken for  
25 ecosystem restoration projects would be similar to those described in Section 9.5.3.1.1 for reliable water  
26 supply projects, but the size of these projects would generally be much smaller. Due to the anticipated  
27 size and rural nature of Delta ecosystem restoration projects, construction is not expected to result in  
28 exposures of sensitive receptors to substantial pollutant concentrations.

29 Documents reviewed for potential impacts included previously completed environmental documents for  
30 the North Delta Flood Control and Ecosystem Restoration Project, the Suisun Marsh Habitat  
31 Management, Preservation, and Restoration Plan, and the Davis-Woodland Water Supply Project. Some  
32 of the construction-related air quality impacts for the North Delta Flood Control project were significant  
33 and unavoidable due to generation of pollutant emissions in excess of applicable significance thresholds  
34 (DWR 2010). The Suisun Marsh Draft EIS/EIR (Reclamation et al. 2010) found construction-related  
35 impacts to be less than significant. The Davis-Woodland Water Supply Project EIR (City of Davis et al.  
36 2007) found this impact significant and unavoidable, stating that project construction and/or operation  
37 would expose sensitive receptors to substantial pollutant concentrations.

#### 38 *Effects of Project Operations*

39 Emissions associated with operations of Delta ecosystem restoration projects, such as restored wetlands,  
40 would depend on several factors, such as the size and type of project, the level of operations and  
41 maintenance activities, and locations of sensitive receptors. Emissions similar to those expected during  
42 construction, but at lower levels, would likely result.

1 Documents reviewed for potential impacts included previously completed environmental documents for  
 2 the North Delta Flood Control and Ecosystem Restoration Project, the Suisun Marsh Habitat  
 3 Management, Preservation, and Restoration Plan, and the Davis-Woodland Water Supply Project. The  
 4 operations-related air quality impacts for the North Delta Flood Control project were less than significant  
 5 for DPM (DWR 2010). The Suisun Marsh Draft EIS/EIR (Reclamation et al. 2010) did not list operations  
 6 impacts. The Davis-Woodland Water Supply Project Final EIR (City of Davis et al. 2007) concluded that  
 7 impacts during operations would be less than significant.

### 8 *Conclusion*

9 It is unclear at this time how implementation of the Proposed Project would result in construction and  
 10 operations of projects, including the location, number, capacity, operational criteria, and methods and  
 11 duration of construction activities and types of operations activities. Because of the uncertainties  
 12 underlying this program-level assessment, CO and TAC emissions and the exposure of sensitive receptors  
 13 in the Delta, Delta watershed, or areas outside the Delta that use Delta water cannot be accurately  
 14 quantified.

15 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
 16 lead agency at the time projects are proposed for implementation. However, because of the potential for  
 17 sensitive receptors in the vicinity of related construction activities to be exposed to pollutants, the  
 18 potential impacts of emissions from future water supply reliability projects are considered **significant**.

### 19 **9.5.3.3 Water Quality Improvement**

20 As described in Sections 2A and 2B, the Delta Plan does not direct the construction of specific projects,  
 21 nor would projects be implemented under the direct authority of the Delta Stewardship Council. However,  
 22 the Delta Plan seeks to improve water quality by encouraging various actions and projects that, if taken,  
 23 could lead to completion, construction, and/or operation of projects that could improve water quality.

24 Actions would include implementation of plans/programs that lead to reduced constituents from  
 25 agricultural runoff and wastewater treatment plants.

26 Associated projects could include construction and operation and maintenance of:

- 27 " Water treatment plants
- 28 " Conveyance facilities (pipelines, pumping plants)
- 29 " Wastewater treatment and recycle facilities
- 30 " Municipal stormwater treatment facilities
- 31 " Agricultural runoff treatment (eliminate, capture and treat/reuse)
- 32 " Wellhead treatment facilities
- 33 " Wells (withdrawal, recharge, and monitoring)

34 The number and location of all potential actions and projects that could be implemented are not known at  
 35 this time. Various projects, however, are known to some degree and are named in the Delta Plan. These  
 36 are:

- 37 " Central Valley Drinking Water Policy
- 38 " Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS)
- 39 " Water Quality Control Plan Update for the San Francisco Bay/ Sacramento-San Joaquin Delta  
 40 Estuary (water flow objectives update)
- 41 " State Water Resources Control Board (SWRCB)/Central Valley Regional Water Quality Control  
 42 Board (RWQCB) Strategic Workplan

- 1       "    Complete the following regulatory processes, research, and monitoring:
- 2       "    Central Valley Pesticide Total Maximum Daily Load and Basin Plan Amendment for diazinon
- 3       "    and chlorpyrifos
- 4       "    Central Valley Pesticide Total Maximum Daily Load and Basin Plan Amendment for pyrethroids
- 5       "    Total Maximum Daily Load and Basin Plan Amendments for selenium and methylmercury
- 6       "    North Bay Aqueduct Alternative Intake Project

7   **9.5.3.3.1    Impact 9-1c: Construction and Operations of Projects Could Conflict with an Applicable**  
8               **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a**  
9               **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

10 *Effects of Project Construction*

11 Water quality improvement projects encouraged by the Delta Plan would include new and expanded  
12 water and wastewater treatment plants and conveyance facilities (pipelines and pumping plants). Projects  
13 to improve water quality may include modified or new treatment plants for surface water, groundwater,  
14 wastewater, stormwater, or agricultural runoff. Construction-related activities to build large water  
15 treatment facilities and other projects to improve water quality could require the use of heavy equipment,  
16 such as excavators, graders, scrapers, bulldozers, backhoes, and concrete mixing and pumping trucks.  
17 Haul trucks would be used to move borrow and/or spoils and other materials. This type of project would  
18 also include construction of related facilities, such as pipelines, pumping plants, service roads, buildings,  
19 or other facilities. Less-extensive use of heavy equipment and smaller construction footprints would be  
20 needed for smaller projects that might be constructed to improve water quality. These projects could be  
21 located in one or more air basins. They may be located in the Delta, but may more likely be located in  
22 areas outside the Delta, as described in Section 2A, Proposed Project and Alternatives.

23 Construction activities for water quality improvement projects encouraged by the Delta Plan would  
24 include a similar range of activities as those described in Section 9.5.3.1.1 for reliable water supply  
25 projects encouraged by the Delta Plan, and would have similar range of air quality effects.

26 It is unclear at this time how implementation of the Proposed Project would result in construction of water  
27 quality improvement projects, including the location, number, capacity, and methods and duration of  
28 construction activities. However, the Delta Plan encourages implementation of the North Bay Aqueduct  
29 Alternative Intake Project. The new alternative intake structure would be located on the Sacramento River  
30 in a rural area of Sacramento or Yolo County, and the new pipeline would extend from the new intake  
31 structure to the existing North Bay Regional Water Treatment Plant. The diversion/intake structure and  
32 water conveyance pipeline are similar to the Davis-Woodland Water Supply Project. The Delta Plan also  
33 encourages implementation of the Central Valley Drinking Water Policy, the Water Quality Control Plan  
34 Update for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, the SWRCB/Central Valley  
35 RWQCB Strategic Workplan, and CV-SALTS. Also encouraged would be completion of regulatory  
36 processes, research, and monitoring to support several amendments to the Central Valley Pesticide Total  
37 Maximum Daily Load and Basin Plan, i.e., the amendments for diazinon and chlorpyrifos, pyrethroids,  
38 and selenium and methylmercury. These studies could result in additional requirements for new or  
39 modified water treatment facilities and infrastructure.

40 The nature and magnitude of construction-related air quality impacts for the projects encouraged by the  
41 Delta Plan will depend on the specific location and characteristics of the projects at the time they are  
42 implemented, and the specific mitigation measures adopted by the implementing agencies. As explained  
43 below, in some situations, according to previously completed environmental reviews for similar projects

1 considered as part of the preparation of this EIR, feasible mitigation exists to reduce significant impacts  
2 for these types of projects to a less-than-significant level. In other cases, construction emissions exceed  
3 the applicable air district significance thresholds, even with mitigation, and would result in significant,  
4 unavoidable air quality impacts.

5 The Davis-Woodland Water Supply Project EIR (City of Davis et al. 2007) was reviewed as part of the  
6 preparation of this EIR, because this project might result in air quality impacts similar to those associated  
7 with water quality improvement projects encouraged by the Proposed Project. The Davis-Woodland  
8 Project includes a water intake in the Sacramento River, pumping plants, conveyance, and water  
9 treatment facilities. The City found that significant and unavoidable air quality impacts could result from  
10 project implementation: 1) project construction and/or operation would violate an air quality standard or  
11 contribute substantially to an existing or projected air quality violation, 2) the project would conflict with  
12 the applicable air quality plan, and 3) project construction and/or operation would expose sensitive  
13 receptors to substantial pollutant concentrations. The summary table that presents mitigation measures  
14 and residual impacts with mitigation states, “No mitigation available to lessen temporary construction-  
15 related impacts to less-than-significant levels. Air quality impacts during operations will be less than  
16 significant” (City of Davis et al. 2007). The Grasslands Bypass Project EIS/EIR (Reclamation and  
17 San Luis & Delta-Mendota Water Authority 2008) did not include a discussion of air quality impacts.

18 Based on these examples, it is possible that air quality impacts of projects encouraged by the Delta Plan  
19 may be less than significant, or could be mitigated to a less-than-significant level. The details of many of  
20 the aspects of these projects, however, are not currently known, and it is possible that significant and  
21 unavoidable impacts on air quality could occur. Impacts of large-scale water quality improvement  
22 projects may be more difficult to avoid or mitigate to a less-than-significant level because of the amount  
23 of construction and level of operations required. Therefore, one or more of the water quality improvement  
24 projects encouraged by the Delta Plan might result in a significant and unavoidable impact on air quality.  
25 This is particularly true for air quality impacts in areas with poor existing air quality. .

26 In this program-level study, construction-related emissions from future projects to improve water quality  
27 are considered significant, because of existing air quality issues in the study area, and the uncertainties  
28 regarding size, timing, and locations of potential projects, as well as the applicable jurisdictional AQMD  
29 or APCD regulations, CEQA guidance, thresholds of significance, and attainment plans.

### 30 *Effects of Project Operations*

31 Projects to improve water quality may include modified or new treatment plants for surface water,  
32 groundwater, wastewater, stormwater, or agricultural runoff. Emissions associated with operations of  
33 projects to improve water quality would depend on several factors, such as the size and type of project,  
34 the number and types of emission sources (e.g., boilers and generators) needed to support operations,  
35 required chemical use, the number of employees and types of equipment, the increased traffic on the local  
36 and regional roadway network (including additional haul trucks and workers), types and volumes of  
37 generated wastes, and the level of operations activities. Stationary sources, such as electrical generators,  
38 are subject to permitting requirements to limit emissions.

39 Documents reviewed for potential impacts included EIRs for the Davis-Woodland Water Supply Project,  
40 which includes a water intake in the Sacramento River, pumping plants, conveyance, and water treatment  
41 facilities, and the Grasslands Bypass Project EIS/EIR (Reclamation and San Luis & Delta-Mendota Water  
42 Authority 2008).

43 The Davis-Woodland Water Supply Project EIR (City of Davis et al. 2007) concluded that air quality  
44 impacts during operations would be less than significant. The Grasslands Bypass Project EIS/EIR did not  
45 include discussion of air quality impacts.

## 1 *Conclusion*

2 It is unclear at this time how implementation of the Proposed Project would result in construction and  
3 operations of projects to improve water quality, including the location, number, capacity, operational  
4 criteria, and methods and duration of activities. Because of the uncertainties underlying this program-  
5 level assessment, impacts on air quality in the Delta, Delta watershed, or areas outside the Delta that use  
6 Delta water cannot be accurately quantified.

7 In most cases, compliance with required permits and approvals and implementation of mitigation  
8 measures would reduce impacts associated with projects to a less-than-significant level. In some cases,  
9 construction or operations emissions may exceed the applicable air district significance thresholds, even  
10 with mitigation, and could result in a significant, unavoidable impact. This situation is most likely to  
11 occur during construction of large infrastructure projects, and may be temporary in nature.

12 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
13 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
14 conditions would be reflected in needed permits and approvals for the projects. However, because of  
15 existing air quality issues in the study area and the uncertainties regarding size, timing, and locations of  
16 potential projects, the potential impact of emissions from future water quality improvement projects is  
17 considered **significant**.

### 18 9.5.3.3.2 Impact 9-2c: Construction and Operation of Projects Could Create Objectionable Odors 19 Affecting a Substantial Number of People

#### 20 *Effects of Project Construction*

21 Construction-related activities to build water treatment facilities and other projects to improve water  
22 quality could require the use of heavy equipment, such as excavators, graders, scrapers, bulldozers,  
23 backhoes, and concrete mixing and pumping trucks. Haul trucks would be used to move borrow and/or  
24 spoils and other materials. In some cases, odors may be generated during construction by disturbance of  
25 soils or structures. Odors may be generated through exhaust emissions from diesel equipment, but the  
26 emission sources would not remain in one location for long periods of time, and the emissions would be  
27 intermittent and would dissipate from the source rapidly. For these reasons, construction is not expected  
28 to result in objectionable odors affecting a substantial number of people.

29 The previously completed environmental documents for similar water quality improvement projects  
30 considered in preparation of this EIR did not evaluate construction-related odor impacts.

#### 31 *Effects of Project Operations*

32 Operation of modified or new treatment plants for surface water, groundwater, salt water, wastewater,  
33 stormwater, or agricultural runoff in the Proposed Project could result in periodic odor impacts. The  
34 locations of these projects could be in the Delta or in areas outside the Delta that use Delta water.

35 Odors may be generated by operations such as wastewater treatment, brine storage, or waste management,  
36 typically due to organic waste decomposition. One common source of odors is anaerobic digestion, which  
37 is often used to treat water or wastes.

38 The occurrence and severity of odor impacts depend on numerous factors, including the nature,  
39 frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors.  
40 Although odors rarely cause any physical harm, they can still be very unpleasant, leading to distress and  
41 generating citizen complaints to local agencies.

42 Few of the previously completed environmental documents for similar water quality improvement  
43 projects evaluated operations-related odor impacts. The Davis-Woodland Water Supply Project EIR (City  
44 of Davis et al. 2007) indicated that odor impacts from operations would be less than significant.

## 1 *Conclusion*

2 It is unclear at this time how implementation of the Proposed Project would result in construction and  
3 operations of projects, including the location, number, capacity, operational criteria, and methods and  
4 duration of construction activities and types of operations activities. Because of the uncertainties  
5 underlying this program-level assessment, impacts on odors in the Delta, Delta watershed, or areas  
6 outside the Delta that use Delta water cannot be accurately determined for significance.

7 Project-level impacts would be addressed in future site-specific environmental analysis conducted at the  
8 time such projects are proposed by lead agencies of these potential projects. Because some projects such  
9 as wastewater treatment plants may be implemented in populated areas and odors may result, the potential  
10 impact due to objectionable odors from future water quality improvement projects is considered  
11 **significant**.

### 12 9.5.3.3.3 Impact 9-3c: Construction or Operations of Projects Could Expose Sensitive Receptors 13 to Substantial Pollutant Concentrations

#### 14 *Effects of Project Construction*

15 The types of construction equipment used and the types of construction activities undertaken for water  
16 quality improvement projects would be similar to those described in Section 9.5.3.1.1 for reliable water  
17 supply projects, but the size of these projects may be smaller in scope and duration.

18 The Davis-Woodland Water Supply Project Final EIR (City of Davis et al. 2007) found this impact to be  
19 significant and unavoidable, stating that project construction and/or operation would expose sensitive  
20 receptors to substantial pollutant concentrations. The summary table which presents mitigation measures  
21 and residual impacts with mitigation states, “No mitigation available to lessen temporary construction-  
22 related impacts to less-than-significant levels. Air quality impacts during operations will be less than  
23 significant” (City of Davis et al. 2007). The mitigation listed includes measures to reduce emissions of  
24 DPM from operation of construction equipment and groundwater wells.

#### 25 *Effects of Project Operations*

26 Emissions associated with operations of modified or new treatment plants for surface water, groundwater,  
27 salt water, wastewater, stormwater, or agricultural runoff would depend on several factors, such as the  
28 size and type of project, the number and types of emission sources (e.g., boilers and generators) needed to  
29 support operations, required chemical use (e.g., chlorine), the level of operations and maintenance  
30 activities, and the locations of sensitive receptors.

## 31 *Conclusion*

32 It is unclear at this time how implementation of the Proposed Project would result in construction and  
33 operations of projects, including the location, number, capacity, operational criteria, and methods and  
34 duration of construction activities and types of operations activities. Because of the uncertainties  
35 underlying these future projects, impacts of odors cannot be accurately determined. Construction,  
36 operations, and maintenance of projects to improve water quality are not expected to expose sensitive  
37 receptors to substantial pollutant concentrations because CO and TAC emissions from stationary sources,  
38 such as wastewater treatment plants, would be subject to air district permitting requirements to limit  
39 exposure to sensitive receptors. In addition, mobile sources would be subject to ARB emission standards  
40 and airborne toxic control measures.

41 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
42 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
43 conditions would be reflected in needed permits and approvals for the projects. However, because of the  
44 potential for sensitive receptors in the vicinity of facilities to be exposed to pollutants, the potential  
45 impact of emissions from future water quality improvement projects is considered **significant**.

### 1 **9.5.3.4 Flood Risk Reduction**

2 As described in Sections 2A and 2B, the Delta Plan does not direct the construction of specific projects,  
3 nor would projects be implemented under the direct authority of the Delta Stewardship Council. However,  
4 the Delta Plan seeks to reduce the risk of floods in the Delta by encouraging various actions, which if  
5 taken could lead to completion, construction and/or operation of projects that could reduce flood risks in  
6 the Delta. Such projects and their features could include the following:

- 7     " Setback levees
- 8     " Floodplain expansion
- 9     " Levee maintenance
- 10    " Levee modification
- 11    " Dredging
- 12    " Stockpiling of materials
- 13    " Subsidence reversal
- 14    " Reservoir reoperation

15 The number and location of all potential projects that could be implemented are not known at this time.  
16 One possible project, however, is known to some degree and is named in the Delta Plan, specifically the  
17 Sacramento Deep Water Ship Channel and Stockton Deep Water Ship Channel Dredging.

#### 18 **9.5.3.4.1 Impact 9-1d: Construction and Operations of Projects Could Conflict with an Applicable** 19 **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a** 20 **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

##### 21 *Effects of Project Construction*

22 Flood risk reduction projects encouraged by the Delta Plan would include the construction of levees and  
23 operable barriers along the levees, levee maintenance, levee modification, expansion of floodplains,  
24 subsidence reversal projects, and sediment removal from channels. Construction would include removal  
25 of vegetation and disturbance of soil in facilities footprints and borrow/spoils areas. Implementing the  
26 Proposed Project could increase investments in levee improvements in the Delta. The improvements  
27 could primarily be to existing levees and typically would not alter their basic shape and configuration,  
28 except for the use of setback levees. Setback levees could extend the levee footprint and width into the  
29 landside of an area and increase riparian habitat on the waterside of the levee.

30 Construction-related activities for projects to reduce risk of floods in the Delta, such as construction of  
31 levees, floodplain expansion, or dredging of waterways would require the use of heavy equipment, such  
32 as excavators, graders, scrapers, bulldozers, backhoes, and dredges. Haul trucks would be used to move  
33 borrow and/or spoils and other materials. Less-extensive use of heavy equipment and smaller construction  
34 footprints would be needed for smaller projects. The locations of these projects would most likely be in  
35 the primary study area. Projects could be located in one or more air basins, and could be located in the  
36 Delta or on rivers in the Delta watershed, as described in Section 2A, Proposed Project and Alternatives.

37 It is unclear at this time how implementation of the Proposed Project would result in construction of flood  
38 risk reduction projects, including the location, number, capacity, and methods and duration of  
39 construction activities. However, the Delta Plan encourages implementation of the Sacramento Deep  
40 Water Ship Channel and Stockton Deep Water Ship Channel Dredging (the United States Army Corps of  
41 Engineer's *Delta Dredged Sediment Long-Term Management Strategy* included in Appendix C,  
42 Attachment C-7 of this EIR). An ongoing project that involves hydraulic dredging similar to this project  
43 is the North Delta Flood Control and Ecosystem Restoration Project (DWR 2010). The Delta Plan also  
44 encourages the DWR Framework for Investments in Delta Flood Management, which may in turn  
45 encourage projects to reverse subsidence, inundate areas to support tule growth, or expand floodplains.

1 The nature and magnitude of construction-related air quality impacts for the projects encouraged by the  
2 Delta Plan will depend on the specific location and characteristics of the projects at the time they are  
3 implemented, and the specific mitigation measures adopted by the implementing agencies. As explained  
4 below, in some situations, according to previously completed environmental reviews for similar projects  
5 considered as part of the preparation of this EIR, feasible mitigation exists to reduce significant impacts  
6 for these types of projects to a less-than-significant level. In other cases, construction emissions exceed  
7 the applicable air district significance thresholds, even with mitigation, and would result in significant,  
8 unavoidable air quality impacts.

9 Documents reviewed for potential impacts included the draft and final EIRs for the North Delta Flood  
10 Control and Ecosystem Restoration Project, which analyze proposed flood management and ecosystem  
11 restoration projects in the Delta, and the Draft Supplemental EIS/EIR for the Sacramento River Deep  
12 Water Ship Channel (USACE and the Port of West Sacramento 2011). Some of the air quality impacts for  
13 the North Delta Flood Control project were significant and unavoidable due to generation of pollutant  
14 emissions in excess of applicable significance thresholds (DWR 2010). The Draft Supplemental EIS/EIR  
15 for the Sacramento River Deep Water Ship Channel project indicated all impacts were less than  
16 significant (USACE and the Port of West Sacramento 2011).

17 Based on these examples, it is possible that air quality impacts of projects encouraged by the Delta Plan  
18 may be less than significant, or could be mitigated to a less-than-significant level. The details of many of  
19 the aspects of these projects, however, are not currently known, and it is possible that significant and  
20 unavoidable impacts on air quality could occur. Impacts of flood risk reduction projects may be more  
21 difficult to avoid or mitigate to a less-than-significant level because of the magnitude of the construction  
22 and the geographic area influenced. Therefore, one or more of the flood risk reduction projects  
23 encouraged by the Delta Plan might result in a significant and unavoidable impact on air quality. This is  
24 particularly true for temporary construction impacts in areas with stringent air quality requirements.

25 In this program-level study, construction-related emissions from future projects to reduce risk of floods in  
26 the Delta are considered significant, because of existing air quality issues in the study area, and the  
27 uncertainties regarding size, timing, and locations of potential projects, as well as the applicable  
28 jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance, and attainment  
29 plans.

### 30 *Effects of Project Operations*

31 Emissions associated with operations and maintenance of flood risk reduction projects would likely be  
32 similar to those expected during construction, but at much lower levels. Emissions associated with  
33 operations and maintenance would depend on several factors, such as the size and type of project, the  
34 number of employees and types of equipment, the increased traffic on the local and regional roadway  
35 network (including additional haul trucks and workers), and the level and frequency of operations and  
36 maintenance activities. Quantification of operational emissions would be too speculative at this program  
37 level because of unknown project details, localized variables, and operational considerations.

38 Documents reviewed for potential impacts included EIRs for the North Delta Flood Control and  
39 Ecosystem Restoration Project, which analyzes proposed flood management and ecosystem restoration  
40 projects in the Delta, and the USACE Draft Supplemental EIS/EIR for the Sacramento River Deep Water  
41 Ship Channel (USACE 2011). Some of the operations-related air quality impacts for the North Delta  
42 Flood Control project were significant and unavoidable due to generation of pollutant emissions in excess  
43 of applicable significance thresholds (DWR 2010). The studies for the Sacramento River Deep Water  
44 Ship Channel project indicated all impacts were less than significant.

## 1 *Conclusion*

2 It is unclear at this time how implementation of the Proposed Project would result in construction and  
3 operations of projects to reduce the risk of floods in the Delta, including the location, number, capacity,  
4 operational criteria, and methods and duration of activities. Because of the uncertainties underlying this  
5 program-level assessment, impacts on air quality in the Delta, Delta watershed, or areas outside the Delta  
6 that use Delta water cannot be accurately quantified. In most cases, compliance with required permits and  
7 approvals and implementation of mitigation measures would reduce impacts associated with projects to a  
8 less-than-significant level. In some cases, construction or operations emissions may exceed the applicable  
9 air district significance thresholds, even with mitigation, and could result in a significant, unavoidable  
10 impact. This situation is most likely to occur during construction of large projects to reduce risk of floods  
11 in the Delta, and may be temporary in nature.

12 Quantification of emissions would be too speculative at this program level because of unknown project  
13 details, localized variables, and operational considerations. Project-level impacts would be addressed in  
14 project-specific environmental analysis conducted by the lead agency at the time projects are proposed for  
15 implementation, and required mitigation and operating conditions would be reflected in needed permits  
16 and approvals for the projects. However, because of existing air quality issues in the study area and the  
17 uncertainties regarding size, timing, and locations of potential projects, the potential impact of emissions  
18 from future flood risk reduction projects is considered **significant**.

### 19 9.5.3.4.2 Impact 9-2d: Construction and Operations of Projects Could Create Objectionable Odors 20 Affecting a Substantial Number of People

#### 21 *Effects of Project Construction*

22 Construction-related activities for projects to reduce risk of floods in the Delta, such as construction of  
23 levees, floodplain expansion, or dredging of waterways would require the use of heavy equipment and  
24 haul trucks. Odors may be generated through exhaust emissions from diesel equipment. In some cases,  
25 odors may be generated during construction by disturbance of soils, sediments, or structures.  
26 Construction-related emission sources would not remain in one location for long periods of time, and the  
27 emissions would be intermittent and would dissipate from the source rapidly. For these reasons,  
28 construction is not expected to result in objectionable odors affecting a substantial number of people.

29 The previously completed environmental documents for similar flood risk reduction projects considered  
30 in preparation of this EIR did not evaluate construction-related odor impacts.

#### 31 *Effects of Project Operations*

32 Operation and maintenance of levees or other flood risk reduction projects would not be expected to  
33 generate odors. Shallow water areas and canals would be maintained to inhibit algal or vegetative growth,  
34 and avoid conditions conducive to anaerobic digestion. The locations of these projects would be primarily  
35 in the Delta.

36 The previously completed environmental documents for similar flood risk reduction projects considered  
37 in preparation of this EIR did not evaluate operations-related odor impacts.

## 38 *Conclusion*

39 It is unclear at this time how implementation of the Proposed Project would result in construction and  
40 operations of projects, including the location, number, capacity, operational criteria, and methods and  
41 duration of construction activities and types of operations activities. Because of the uncertainties  
42 underlying these future projects, impacts of odors cannot be accurately determined. Construction and  
43 operations of projects to reduce risk of floods in the Delta, however, would not be expected to result in  
44 objectionable odors affecting a substantial number of people.

1 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
2 lead agency at the time projects are proposed for implementation. Although there are uncertainties  
3 regarding size, timing, and locations of potential projects, the potential impact due to objectionable odors  
4 from future flood risk reduction projects is considered **less than significant**.

#### 5 9.5.3.4.3 Impact 9-3d: Construction or Operation of Projects Could Expose Sensitive Receptors 6 to Substantial Pollutant Concentrations

##### 7 *Effects of Project Construction*

8 The types of construction equipment used and the types of construction activities undertaken for flood  
9 risk reduction projects would be similar to those described in Section 9.5.3.1.1 for reliable water supply  
10 projects, but the size of these projects would generally be smaller in scope and duration. Due to the  
11 anticipated size and duration of flood risk reduction projects, construction is not expected to result in  
12 exposures of sensitive receptors to substantial pollutant concentrations.

13 In the previously completed environmental documents reviewed for potential impacts, some of the  
14 operations-related air quality impacts for the North Delta Flood Control project were significant and  
15 unavoidable due to generation of pollutant emissions in excess of applicable significance thresholds  
16 (DWR 2010). The studies for the Sacramento River Deep Water Ship Channel project indicated all air  
17 quality impacts were less than significant (USACE 2011).

##### 18 *Effects of Project Operations*

19 Emissions associated with operations of projects to reduce risk of floods in the Delta, such as levees,  
20 would depend on several factors, such as the size and type of project, the level of operations and  
21 maintenance activities, and locations of sensitive receptors. Emissions similar to those expected during  
22 construction, but at lower levels, would likely result.

23 In the previously completed environmental documents reviewed for potential impacts, the operations-  
24 related air quality impacts for the North Delta Flood Control project were less than significant for DPM  
25 (DWR 2010). The studies for the Sacramento River Deep Water Ship Channel project indicated all air  
26 quality impacts were less than significant (USACE 2011).

##### 27 *Conclusion*

28 It is unclear at this time how implementation of the Proposed Project would result in construction and  
29 operations of projects, including the location, number, capacity, operational criteria, and methods and  
30 duration of construction activities and types of operations activities. Because of the uncertainties  
31 underlying this program-level assessment, CO and TAC emissions estimates and the potential for  
32 exposure of sensitive receptors to substantial air pollutant concentrations in the Delta, Delta watershed, or  
33 areas outside the Delta that use Delta water cannot be accurately quantified. Construction, operations, and  
34 maintenance of levees or other flood risk reduction projects would not be expected to expose sensitive  
35 receptors to substantial pollutant concentrations because CO and TAC emissions from stationary sources  
36 would be subject to air district permitting requirements to limit exposure to sensitive receptors. In  
37 addition, mobile sources would be subject to ARB emission standards and Airborne Toxic Control  
38 Measures.

39 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
40 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
41 conditions would be reflected in needed permits and approvals for the projects. However, because of the  
42 potential for sensitive receptors in the vicinity of facilities to be exposed to pollutants, the potential  
43 impact of emissions from future flood risk reduction projects is considered **significant**.

### 1 **9.5.3.5 Protection and Enhancement of Delta as an Evolving Place**

2 As described in Sections 2A and 2B, the Delta Plan does not direct the construction of specific projects,  
3 nor would projects be implemented under the direct authority of the Delta Stewardship Council. However,  
4 the Delta Plan seeks to protect and enhance the Delta as an evolving place by encouraging various actions  
5 and projects, which if taken could lead to completion, construction and/or operation of associated  
6 projects. Features of such actions and could include the following:

7 " Gateways, bike lanes, parks, trails, and marinas and facilities to support wildlife viewing, angling,  
8 and hunting opportunities

9 " Additional retail and restaurants in legacy towns to support tourism

10 The number and location of all potential projects that could be implemented are not known at this time.  
11 However, two possible projects are known to some degree and are named in the Delta Plan, which are  
12 new State Parks at Barker Slough and Elkhorn Basin.

#### 13 **9.5.3.5.1 Impact 9-1e: Construction and Operations of Projects Could Conflict with an Applicable** 14 **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a** 15 **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

##### 16 *Effects of Project Construction*

17 Delta enhancement projects encouraged by the Delta Plan would include the construction of recreational  
18 trails, community gateways and visitor centers, marinas, parks, and waterfowl hunting opportunities. The  
19 locations of these projects would most likely be in the primary study area. Projects could be located in  
20 one or more air basins, and would be located in the Delta, as described in Section 2A, Proposed Project  
21 and Alternatives.

22 It is unclear at this time how implementation of the Proposed Project would result in construction of Delta  
23 enhancement projects, including the location, number, capacity, and methods and duration of construction  
24 activities. However, the Delta Plan encourages implementation of future State Parks at Barker Slough and  
25 Elkhorn Basin. The Delta Plan also encourages the Economic Sustainability Plan with recommendations  
26 and planning for public safety, flood protection and flood management, recreation investment,  
27 socioeconomic sustainability of Delta agriculture and legacy communities, and encouragement of  
28 recreational investment along key river corridors.

29 The nature and magnitude of construction-related air quality impacts for projects encouraged by the Delta  
30 Plan will depend on the specific location and characteristics of the projects at the time they are  
31 implemented, and the specific mitigation measures adopted by the implementing agencies. One document  
32 for a similar project, reviewed for potential impacts, was the Initial Study/Negative Declaration (IS/ND)  
33 for the Bidwell-Sacramento River State Park project (DPR 2010). This project would include a parking  
34 area, picnic sites, restrooms, and trails, and would restore 25 acres of native habitat and 7 acres of riparian  
35 habitat. The project would include standard requirements for measures to reduce emissions associated  
36 with construction-related fugitive dust and equipment exhaust. The IS/ND indicated that all air quality  
37 impacts were less than significant.

38 Based on this example, it is possible that air quality impacts of projects encouraged by the Delta Plan may  
39 be less than significant, or could be mitigated to a less-than-significant level. However, the details of  
40 many of the aspects of these projects are not currently known, and it is possible that significant and  
41 unavoidable impacts on air quality could occur.

42 In this program-level study, construction-related emissions from future projects to protect and enhance the  
43 unique resources and values of the California Delta as an evolving place, such as construction of  
44 recreational or tourism facilities or State Parks, are considered significant, because of existing air quality

1 issues in the study area, and the uncertainties regarding size, timing, and locations of potential projects, as  
2 well as the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of  
3 significance, and attainment plans.

#### 4 *Effects of Project Operations*

5 Emissions associated with operations and maintenance of recreational, tourism, or other Delta  
6 enhancement projects would depend on several factors, such as the size and type of project, the number of  
7 employees and types of equipment, the increased traffic on the local and regional roadway network, and  
8 the level of operations activities. Impacts may not be significant, but quantification of operational  
9 emissions would be too speculative at this program level because of unknown project details, localized  
10 variables, and operational considerations. Project-specific air quality impacts would be addressed in  
11 project-specific environmental studies conducted by the lead agency at the time projects are proposed for  
12 implementation, and required mitigation and operating conditions would be reflected in needed permits  
13 and approvals for the projects.

14 As described above, the IS/ND for the Bidwell-Sacramento River State Park project (DPR 2010)  
15 indicated that all air quality impacts were less than significant.

#### 16 *Conclusion*

17 It is unclear at this time how implementation of the Proposed Project would result in construction and  
18 operations of recreational, tourism or other Delta enhancement projects, including the location, number,  
19 capacity, operational criteria, and methods and duration of activities. Because of the uncertainties  
20 underlying this program-level assessment, impacts on air quality in the Delta cannot be accurately  
21 quantified. In most cases, compliance with required permits and approvals and implementation of  
22 mitigation measures would reduce impacts associated with projects to a less-than-significant level. In  
23 some cases, construction or operations emissions may exceed the applicable air district significance  
24 thresholds, even with mitigation, and could result in a significant, unavoidable impact. This situation is  
25 most likely to occur during construction of large projects, and may be temporary in nature.

26 Project-level impacts would be addressed in project-specific environmental analysis conducted by the  
27 lead agency at the time projects are proposed for implementation, and required mitigation and operating  
28 conditions would be reflected in needed permits and approvals for the projects. However, because of  
29 existing air quality issues in the study area, and the uncertainties regarding size, timing, and locations of  
30 potential projects, as well as the applicable jurisdictional AQMD or APCD regulations, CEQA guidance,  
31 thresholds of significance, and attainment plans, the potential impact of emissions from projects to protect  
32 and enhance the unique resources and values of the California Delta is considered **significant**.

#### 33 9.5.3.5.2 Impact 9-2e: Construction and Operations of Projects Could Create Objectionable Odors 34 Affecting a Substantial Number of People

##### 35 *Effects of Project Construction*

36 Construction-related activities for projects to protect and enhance the unique resources and values of the  
37 California Delta as an evolving place, such as construction of recreational or tourism facilities, would  
38 require the use of heavy equipment and haul trucks. Odors may be generated through exhaust emissions  
39 from diesel equipment. In some cases, odors may be generated during construction by disturbance of  
40 soils, sediments, or structures. Construction-related emission sources would not remain in one location for  
41 long periods of time, and the emissions would be intermittent and would dissipate from the source  
42 rapidly. For these reasons, construction is not expected to result in objectionable odors affecting a  
43 substantial number of people.

1 One document for a similar project, reviewed for potential impacts, was the IS/ND for the Bidwell-  
2 Sacramento River State Park project (DPR 2010). The IS/ND indicated all air quality impacts were less  
3 than significant.

#### 4 *Effects of Project Operations*

5 Operation and maintenance of recreational, tourism, or other Delta enhancement projects would not be  
6 expected to generate odors. The locations of these projects would be primarily in the Delta.

7 As described above, the IS/ND for the Bidwell-Sacramento River State Park project (DPR 2010)  
8 indicated that all air quality impacts were less than significant.

#### 9 *Conclusion*

10 It is unclear at this time how implementation of the Proposed Project would result in construction and  
11 operations of projects, including the location, number, capacity, operational criteria, and methods and  
12 duration of construction activities and types of operations activities. Construction and operations of  
13 projects to protect and enhance the unique resources and values of the California Delta as an evolving  
14 place are not be expected to result in objectionable odors affecting a substantial number of people.

15 Project-level impacts would be addressed in future site-specific environmental analysis conducted at the  
16 time such projects are proposed. Although some projects may be implemented near populated areas and  
17 temporary odors during construction may result, the potential impact due to objectionable odors from  
18 projects to protect and enhance the unique resources and values of the California Delta is considered **less**  
19 **than significant**.

### 20 **9.5.3.5.3 Impact 9-3e: Construction or Operation of Projects Could Expose Sensitive Receptors to** 21 **Substantial Pollutant Concentrations**

#### 22 *Effects of Project Construction*

23 The types of construction equipment used and the types of construction activities undertaken for Delta  
24 enhancement projects would be similar to those described in Section 9.5.3.1.1 for reliable water supply  
25 projects, but the size of these projects would generally be much smaller in scope and duration. Due to the  
26 anticipated size of the projects, construction is not expected to result in exposures of sensitive receptors to  
27 substantial pollutant concentrations.

28 One document for a similar project, reviewed for potential impacts, was the IS/ND for the Bidwell-  
29 Sacramento River State Park project (DPR 2010). The IS/ND indicated all air quality impacts were less  
30 than significant. Refer to Section 2B, Introduction to Resource Sections, and Appendix H for more  
31 information on the Bidwell project and related environmental document.

#### 32 *Effects of Project Operations*

33 Emissions associated with operations and maintenance of recreational, tourism, or other Delta  
34 enhancement projects would depend on several factors, such as the size and type of project, the level of  
35 operations and maintenance activities, and locations of sensitive receptors. Emissions similar to those  
36 expected during construction, but at lower levels, would likely result. The locations of these projects  
37 would be primarily in the Delta.

38 As described above, the IS/ND for the Bidwell-Sacramento River State Park project (DPR 2010)  
39 indicated that all air quality impacts were less than significant.

1 *Conclusion*

2 It is unclear at this time how implementation of the Proposed Project would result in construction and  
3 operations of projects, including the location, number, capacity, operational criteria, and methods and  
4 duration of construction activities and types of operations activities. Construction, operations, and  
5 maintenance of Delta enhancement projects are not be expected to expose sensitive receptors to  
6 substantial pollutant concentrations.

7 Project-level impacts would be addressed in future site-specific environmental analysis conducted at the  
8 time such projects are proposed. However, because of the potential for sensitive receptors in the vicinity  
9 of constructed facilities to be exposed to pollutants, the potential impact of emissions from projects to  
10 protect and enhance the unique resources and values of the California Delta is considered **significant**.

11 **9.5.3.6 Mitigation Measures**

12 Any covered action that would have one or more of the significant environmental impacts listed above  
13 shall incorporate the following features and/or requirements related to such impacts.

14 With regard to covered actions implemented under the Delta Plan, these mitigation measures will reduce  
15 the impacts of the Proposed Project. Project-level analysis by the agency proposing the covered action  
16 will determine whether the measures are sufficient to reduce those impacts to a less-than-significant level.  
17 Generally speaking, many of these measures are commonly employed to minimize the severity of an  
18 impact and in many cases would reduce impacts to a less-than-significant level, as discussed below in  
19 more detail.

20 With regard to actions taken by other agencies on the basis of Delta Plan recommendations (i.e., activities  
21 that are not covered actions), the implementation and enforcement of these measures would be within the  
22 responsibility and jurisdiction of public agencies other than the Council. Those agencies can and should  
23 adopt these measures as part of their approval of such actions, but the Council does not have the authority  
24 to require their adoption. Therefore, significant impacts of noncovered actions could remain significant  
25 and unavoidable.

26 How mitigation measures in this EIR relate to covered and uncovered actions is discussed in more detail  
27 in Section 2B, Introduction to Resource Sections.

28 Any covered action that would have one or more of the significant environmental impacts listed above  
29 shall incorporate the following features and/or requirements related to the impact (i.e., mitigation of  
30 emissions and air quality impacts from construction and operation of proposed projects).

31 With regard to covered actions implemented under the Delta Plan, these mitigation measures will reduce  
32 the impacts of the proposed action. Project-level analysis by the agency proposing the covered action will  
33 determine whether the measures are sufficient to reduce those impacts to a less-than-significant level.  
34 Generally speaking, many of these measures are considered standard and in many cases would reduce  
35 impacts to a less-than-significant level, as discussed below in more detail. This is not certain, however,  
36 and will be determined on a case-by-case basis when the lead agency considers the proposed covered  
37 action.

38 With regard to actions taken by other agencies on the basis of Delta Plan recommendations (i.e., activities  
39 that are not covered actions), the implementation and enforcement of these measures would be within the  
40 responsibility and jurisdiction of public agencies other than the Delta Stewardship Council. Those  
41 agencies can and should adopt these measures as part of their approval of such actions, but the Delta  
42 Stewardship Council does not have the authority to require their adoption.

43

1 For projects with the potential to result in significant air quality impacts, the project proponent should  
2 prepare and include a project-specific Air Quality Technical Report as part of the environmental  
3 documentation, prior to approval of the projects. The technical report should include an analysis of  
4 potential air quality impacts, including:

- 5     " An analysis as to whether construction- and operation-related criteria air pollutant emissions  
6        would exceed applicable air district significance or general conformity thresholds
- 7     " An evaluation of potential health risks associated with human exposures to TACs from project  
8        sources
- 9     " Air quality benefits of compliance with required permits, conditions, and approvals
- 10    " Air quality benefits of required and recommended emission reduction measures (e.g., measures  
11        listed in Mitigation Measure 9-1)

12 Preparation of the technical report should be based on the AQMPs, policies, and regulations of the  
13 appropriate local air district(s) and should identify compliance with applicable district guidelines for  
14 environmental review and mitigation, and requirements for air quality impact analysis, health risk  
15 assessment, New Source Review permitting, and best available control technology. As applicable, project  
16 proponents should obtain air permits for facilities and equipment, such as concrete batch plants, boilers,  
17 generators, or fuel storage and dispensing facilities. Portable equipment should be registered or permitted.  
18 Projects should be consistent with the emission reduction policies and control measures documented in  
19 applicable SIPs and AQMPs. The technical report should identify project emissions from construction  
20 and operation of permitted (stationary) and non-permitted (mobile and area) sources, and mitigation  
21 measures (as appropriate) that will be implemented to reduce significant emissions to below the  
22 applicable air district thresholds of significance. If these thresholds cannot be met with mitigation, then  
23 the individual project would require additional environmental review, additional mitigation measures, a  
24 general conformity determination, permits or other approvals, and/or a statement of over-riding  
25 considerations.

#### 26 9.5.3.6.1 Mitigation Measure 9-1

27 The following mitigation measures and BMPs, when implemented (as applicable) during construction of  
28 projects and continued during operations and maintenance, would reduce the effects of Impact 9-1a,  
29 Conflict with an Applicable Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or  
30 Result in a Cumulatively Considerable Net Increase of Nonattainment Pollutants:

- 31     " Use equipment and vehicles that are compliant with ARB requirements and emission standards  
32        for on-road and off-road fleets and engines. New engines and retrofit control systems should  
33        reduce NO<sub>x</sub> and PM from diesel-fueled on-road and off-road vehicles and equipment.
- 34     " Minimize idling times either by shutting equipment off when not in use or reducing the maximum  
35        idling time to 5 minutes (as required by the California airborne toxics control measure Title 13,  
36        Section 2485 of California Code of Regulations [CCR]). Clear signage should be posted for  
37        construction workers at all entrances to the site.
- 38     " Maintain all equipment in proper working condition according to manufacturer's specifications.
- 39     " Use electric equipment when possible. Use lower-emitting alternative fuels to power vehicles and  
40        equipment where feasible.
- 41     " Use low VOC coatings and chemicals; minimize chemical use.
- 42     " Prepare a dust control plan and apply dust control measures at the construction sites.

1       " For projects involving land fallowing, land conversion, or other agricultural operations,  
2       implement applicable BMPs from agencies such as the U.S. Department of Agriculture Natural  
3       Resources Conservation Service to reduce potential dust emissions.

4   BMPs for fallowed lands could include, but are not limited to, the following:

5       " Implement conservation cropping sequences and wind erosion protection measures, such as:

6       · Plan ahead to start with plenty of vegetation residue, and maintain as much residue on  
7       fallowed fields as possible. Residue is more effective for wind erosion protection if left  
8       standing.

9       · If residues are not adequate, small grain can be seeded about the first of the year to take  
10      advantage of the winter rains and irrigated with a light irrigation if needed to get adequate  
11      growth.

12      · Avoid any tillage if possible.

13      · Avoid any traffic or tillage when fields are extremely dry to avoid pulverization.

14      " Apply soil stabilization chemicals to fallowed lands.

15      " Re-apply drain water to allow protective vegetation to be established.

16      " Reuse irrigation return flows to irrigate windbreaks across blocks of land including many fields to  
17      reduce wind fetch and reduce emissions from fallowed, farmed, and other lands within the block.  
18      Windbreak species, management, and layout would be optimized to achieve the largest feasible  
19      dust emissions reduction per unit water available for their irrigation. Windbreak corridors would  
20      provide ancillary aesthetic and habitat benefits.

21   Project-specific lists of mitigation measures should also include the recommendations or requirements of  
22   the local air district(s). For example, the BAAQMD lists the following basic and additional mitigation  
23   measures to reduce emissions from project construction (BAAQMD 2010).

#### **Basic Construction Mitigation Measures Recommended for ALL Proposed Projects**

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

**Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold**

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
9. Minimizing the idling time of diesel powered construction equipment to two minutes.
10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).

12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO<sub>x</sub> and PM.
13. Require all contractors to use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines.

Source: BAAQMD 2010.

#### 1 9.5.3.6.2 Mitigation Measure 9-2

2 The following mitigation measures would reduce the effects of Impacts 9-2a, Construction and  
3 Operations of a Project Would Create Objectionable Odors Affecting a Substantial Number of People:

4 " Applicants should develop and implement a project-specific Odor Management Plan. Odor  
5 control measures that can be incorporated into this plan include, but are not limited to, the  
6 following:

- 7 . A list of potential odor sources
- 8 . Identification and description of the most likely sources of odor
- 9 . Identification of potential, intensity, and frequency of odor from likely sources
- 10 . A list of odor control technologies and management practices that could be implemented to  
11 minimize odor releases
- 12 . A protocol for monitoring and recording odor events
- 13 . A protocol for reporting and responding to odor events

#### 14 9.5.3.6.3 Mitigation Measure 9-3

15 The Air Quality Technical Report prepared for the Proposed Project should evaluate human health risks  
16 from potential exposures of sensitive receptors to substantial pollutant concentrations on a project-specific  
17 basis. The need for a human health risk analysis should be evaluated using approved screening tools, and  
18 discussed with the local AQMD or APCD at the time of preparation of the Air Quality Technical Report.

19 If the health risk is determined to be significant on a project-specific basis, control measures should be  
20 implemented to reduce health risks to levels below the applicable air district threshold.

21 Implementation of one or more of the following requirements, where feasible and appropriate would  
22 reduce the effects of Impact 9-3a, Construction or Operation of Projects Would Expose Sensitive  
23 Receptors to Substantial Pollutant Concentrations:

- 24 " Implement Mitigation Measure 9-1 to reduce air emissions and air quality impacts from  
25 construction and operations of the Proposed Project.
- 26 " Use equipment with diesel engines designed or retrofitted to minimize DPM emissions, usually  
27 through the use of catalytic particulate filters in the exhaust.
- 28 " Use electric equipment to eliminate local combustion emissions.
- 29 " Use alternative fuels, such as compressed natural gas or liquefied natural gas.

1 If the project would result in significant emissions of airborne, naturally occurring asbestos or metals  
2 from excavation, hauling, blasting, tunneling, placement, or other handling of rocks or soil, a dust  
3 mitigation and air monitoring plan would be required to specify site-specific measures to minimize  
4 emissions and that airborne concentrations of the TACs of concern do not exceed regulatory or risk-based  
5 trigger levels.

6 Because it is not known whether the mitigation measures listed above would reduce Impacts 9-1 and 9-3  
7 to a less-than-significant level for the Proposed Project, these potential impacts are considered **significant**  
8 **and unavoidable**.

## 9 9.5.4 No Project Alternative

10 As described in Section 2A, Proposed Project and Alternatives, the No Project Alternative is based on the  
11 continuation of existing plans and policies, the continued operation of existing facilities into the future,  
12 and permitted and funded projects. Several ongoing projects have been identified as part of the No Project  
13 Alternative. The list of projects included in the No Project Alternative is presented in Table 2-2.

14 Compared to the Proposed Project, the No Project Alternative would involve less construction and  
15 operation of projects to protect reliable water supply, restore Delta ecosystems, improve water quality,  
16 reduce flood risks, and enhance the Delta. This would reduce the air quality impacts associated with  
17 construction and operation of projects, as described above for the five Delta Plan elements, compared to  
18 the Proposed Project.

19 Four water supply projects, one tidal marsh restoration project, and one surface water storage reservoir  
20 expansion project would move forward under the No Project Alternative, as described in Section 2A,  
21 Proposed Project and Alternatives. Construction of these projects is well underway, and for most,  
22 construction is anticipated to be complete in 2012. These projects generally would have air quality  
23 impacts similar to those for some of the projects encouraged by the Proposed Project. Under the No  
24 Project Alternative, the Delta Plan would not be in place to encourage various other projects to move  
25 forward. To the extent that the absence of the Delta Plan prevents those projects from moving forward,  
26 there would be no air quality impacts associated with them, so air quality impacts under the No Project  
27 Alternative would be **less than** those identified for the Proposed Project, and would most likely be **less**  
28 **than significant**.

## 29 9.5.5 Alternative 1A

30 Under Alternative 1A, the construction and operation of surface water projects (water intakes, treatment  
31 and conveyance facilities, and reservoirs) would be the same as under the Proposed Project. As described  
32 in Section 2A, Proposed Project and Alternatives, there would be fewer groundwater projects (wells,  
33 wellhead treatment, conveyance facilities), ocean desalination projects, recycled wastewater and  
34 stormwater projects (treatment and conveyance facilities) compared with the Proposed Project. Water  
35 transfers and water use efficiency and conservation programs also would be reduced relative to the  
36 Proposed Project, but these programs would not be expected to influence air quality.

37 Projects to restore the Delta ecosystem would be reduced relative to the Proposed Project and ecosystem  
38 stressor management activities and invasive species management (including removal of invasive  
39 vegetation) would be the same as described for the Proposed Project. The implementation of flow  
40 objectives that could lead to a more natural flow regime in the Delta would not be accelerated, which  
41 could result in fewer water supply reliability projects constructed to respond to a potential reduction in  
42 exports.

1 Projects and actions to improve water quality would be the same as under the Proposed Project. Flood  
2 risk reduction projects also would be the same as under the Proposed Project, except that there would be  
3 less emphasis on levee maintenance and modification for levees that protect agricultural land and more  
4 emphasis on levees that protect water supply corridors, which could result in an overall reduction in these  
5 activities. Projects to protect and enhance the Delta as an evolving place would be the same as for the  
6 Proposed Project.

#### 7 9.5.5.1.1 Impact 9-1: Construction and Operations of Projects Could Conflict with an Applicable 8 Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a 9 Cumulatively Considerable Net Increase of Nonattainment Pollutants

10 In consideration of the uncertainties regarding size, timing, and locations of potential projects, as well as  
11 the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance,  
12 and attainment plans, the same types of emissions impacts from construction and operations would occur  
13 under Alternative 1A as described under the Proposed Project. Alternative 1A would reduce significant  
14 impacts relative to the Proposed Project because of a reduction in construction activity. The difference in  
15 the number or size of projects that could be constructed under Alternative 1A is not known at this time,  
16 but if fewer projects are constructed and operated, lower levels of construction and operations emissions  
17 would occur. Individual projects under this alternative may be of sufficient size that their construction and  
18 operation emissions would still exceed applicable significance thresholds, when compared to existing  
19 conditions.

20 Overall, the air quality impacts associated with construction and operation of potential projects under  
21 Alternative 1A would be **less than** under to the Proposed Project.

22 As compared to existing conditions, the potential impact on air quality under Alternative 1A is considered  
23 **significant**.

#### 24 9.5.5.1.2 Impact 9-2: Construction and Operations of Projects Could Create Objectionable Odors 25 Affecting a Substantial Number of People

26 The same type of odor impacts from construction and operations would occur under Alternative 1A as  
27 described under the Proposed Project. Air quality impacts due to odors would be reduced relative to the  
28 Proposed Project under Alternative 1A for the same reasons described above for Impact 9-1. Ecosystem  
29 restoration projects, including potentially odorous marshes and wetlands, would be less likely than under  
30 the Proposed Project. However, because the locations and details of projects and actions that might be  
31 constructed are not currently known, this potential impact on air quality is considered significant.

32 Overall, significant impacts on air quality due to odors under Alternative 1A would be **less than** under the  
33 Proposed Project.

34 As compared to existing conditions, the potential odor related impact- under Alternative 1A is considered  
35 **less than significant**.

#### 36 9.5.5.1.3 Impact 9-3: Construction or Operation of Projects Could Expose Sensitive Receptors to 37 Substantial Pollutant Concentrations

38 The same type of TAC emissions impacts from construction and operations would occur under  
39 Alternative 1A as described under the Proposed Project. Air quality impacts due to TAC and other  
40 pollutant emissions would be reduced relative to the Proposed Project under Alternative 1A for the same  
41 reasons described above for Impact 9-1. However, because the locations and details of projects and  
42 actions that might be constructed are not currently known, this potential impact on air quality is  
43 considered significant.

1 Overall, significant impacts on air quality due to TAC and other pollutant emissions under Alternative 1A  
2 would be **less than** under the Proposed Project.

3 As compared to existing conditions, the potential TAC-related impacts of construction and operations  
4 under Alternative 1A are considered **significant**.

### 5 **9.5.5.2 Mitigation Measures**

6 Mitigation measures for Alternative 1A would be the same as those described in Sections 9.5.3.6.1  
7 (Mitigation Measure 9-1) and 9.5.3.6.3 (Mitigation Measure 9-3) for the Proposed Project. Because it is  
8 not known whether the mitigation measures listed above would reduce Impacts 9-1 and 9-3 to a less-than-  
9 significant level for Alternative 1A, these potential impacts are considered **significant and unavoidable**.

## 10 **9.5.6 Alternative 1B**

11 Under Alternative 1B, the construction and operation of surface water projects (water intakes, treatment  
12 and conveyance facilities, and reservoirs) would be the same as under the Proposed Project. As described  
13 in Section 2A, Proposed Project and Alternatives, there would be fewer groundwater projects (wells,  
14 wellhead treatment, conveyance facilities), recycled wastewater, and stormwater projects (treatment and  
15 conveyance facilities). There would be no ocean desalination projects.

16 Projects to restore the Delta ecosystem would be reduced in extent relative to the Proposed Project and  
17 would not emphasize restoration of floodplains in the lower San Joaquin River. Implementation of flow  
18 objectives would not be accelerated.

19 Ecosystem stressor management activities (including pesticide or chemical use) and invasive species  
20 management (including removal of invasive vegetation) would be increased relative to the Proposed  
21 Project, but a variance to the USACE Levee Vegetation Policy would not be pursued. In addition,  
22 Alternative 1B would not require conformance with the habitat types and elevation maps presented in the  
23 Conservation Strategy for Restoration of the Sacramento-San Joaquin Delta Ecological Management  
24 Zone and the Sacramento and San Joaquin Valley Regions (DFG 2011). These activities would not be  
25 expected to affect air quality.

26 Water quality improvement projects, including water treatment plants, conveyance facilities, and wells  
27 and wellhead treatment facilities, would be less emphasized relative to the Proposed Project, and greater  
28 emphasis would be placed on the construction and operation of wastewater treatment and recycle facilities  
29 and municipal stormwater treatment facilities.

30 Flood risk reduction would place greater emphasis on levee modification/maintenance and dredging than  
31 under the Proposed Project, but there would be no setback levees or subsidence reversal projects.  
32 Floodplain expansion projects would be fewer or less extensive, and use of reservoir reoperation would be  
33 reduced. Actions to protect and enhance the Delta as an evolving place would be consistent with the  
34 Economic Sustainability Plan, but creating new State Parks in the Delta, as encouraged by the Proposed  
35 Project, would not be emphasized.

### 36 **9.5.6.1.1 Impact 9-1: Construction and Operations of Projects Could Conflict with an Applicable** 37 **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a** 38 **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

39 In consideration of the uncertainties regarding size, timing, and locations of potential projects, as well as  
40 the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance,  
41 and attainment plans, the same types of emissions impacts from construction and operations would occur  
42 under Alternative 1B as described under the Proposed Project. Air quality impacts under Alternative 1B  
43 would in some cases be more increased, and in other cases reduced. The difference in the number or size  
44 of projects that could be constructed under Alternative 1B is not known at this time, but if fewer, smaller,

1 and/or less complex projects are constructed and operated, lower levels of construction and operations  
2 emissions would occur. Individual projects under this alternative may be of sufficient size that their  
3 construction and operation emissions would still exceed applicable significance thresholds, when  
4 compared to existing conditions.

5 Overall, the air quality impacts associated with construction and operation of potential projects under  
6 Alternative 1B would be **less than** under the Proposed Project.

7 As compared to existing conditions, this potential impact on air quality under Alternative 1B would be  
8 **significant**.

#### 9 9.5.6.1.2 Impact 9-2: Construction and Operations of Projects Could Create Objectionable Odors 10 Affecting a Substantial Number of People

11 The same type of odor impacts from construction and operations would occur under Alternative 1B as  
12 described under the Proposed Project. Air quality impacts due to odors would be similar to the Proposed  
13 Project under Alternative 1B for the same reasons described above for Impact 9-1. Ecosystem restoration  
14 projects, including potentially odorous marshes and wetlands, would be less likely than under the  
15 Proposed Project. However, because the locations and details of projects and actions that might be  
16 constructed are not currently known, this potential impact on air quality is considered significant.

17 Overall, significant impacts on air quality due to odors under Alternative 1B would be **less than** under the  
18 Proposed Project.

19 As compared to existing conditions, the potential odor related impacts under Alternative 1B are  
20 considered **less than significant**.

#### 21 9.5.6.1.3 Impact 9-3: Construction or Operation of Projects Could Expose Sensitive Receptors to 22 Substantial Pollutant Concentrations

23 The same type of emissions impacts from construction and operations would occur under Alternative 1B  
24 as described under the Proposed Project. Air quality impacts due to TAC and other pollutant emissions  
25 would be similar to the Proposed Project under Alternative 1B for the same reasons described above for  
26 Impact 9-1. However, because the locations and details of projects and actions that might be constructed  
27 are not currently known, this potential impact on air quality is considered significant.

28 Overall, significant impacts on air quality due to TAC and other pollutant emissions under Alternative 1B  
29 would be **less than** under the Proposed Project.

30 As compared to existing conditions, the potential TAC-related impacts of construction and operations  
31 under Alternative 1B are considered **significant**.

#### 32 9.5.6.2 Mitigation Measures

33 Mitigation measures for Alternative 1B would be the same as those described in Sections 9.5.3.6.1  
34 (Mitigation Measure 9-1) and 9.5.3.6.3 (Mitigation Measure 9-3) for the Proposed Project. Because it is  
35 not known whether the mitigation measures listed above would reduce Impacts 9-1 and 9-3 to a less-than-  
36 significant level for Alternative 1B, these potential impacts are considered **significant and unavoidable**.

### 37 9.5.7 Alternative 2

38 As described in Section 2A, Proposed Project and Alternatives, Alternative 2 would place greater  
39 emphasis on groundwater, ocean desalination, water transfers, water use efficiency and conservation, and  
40 recycled water projects and less emphasis on surface water projects. The surface storage reservoirs  
41 considered under the DWR Surface Water Storage Investigation would not be encouraged; instead,  
42 surface storage in the Tulare Basin would be emphasized. Alternative 2 would emphasize the

1 development of flow objectives that take into consideration updated flow criteria that support a more  
2 natural flow regime, water rights, and greater protection of public trust resources, which could lead to the  
3 construction of additional water supply projects to respond to a possible reduction in Delta exports.

4 Actions to improve water quality would be similar to or greater than those under the Proposed Project,  
5 especially the treatment of wastewater and agricultural runoff. Actions to reduce flood risk under  
6 Alternative 2 would emphasize floodplain expansion and reservoir reoperation rather than levee  
7 construction and modification. The stockpiling of rock and encouragement of subsidence reversal projects  
8 would be the same as under the Proposed Project, as would actions to protect and enhance the Delta as an  
9 evolving place.

10 **9.5.7.1.1 Impact 9-1: Construction and Operations of Projects Could Conflict with an Applicable**  
11 **Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a**  
12 **Cumulatively Considerable Net Increase of Nonattainment Pollutants**

13 In consideration of the uncertainties regarding size, timing, and locations of potential projects, as well as  
14 the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance,  
15 and attainment plans, the same types of emissions impacts from construction and operations would occur  
16 under Alternative 2 as described under the Proposed Project. Air quality impacts under Alternative 2  
17 would in some cases be more increased, and in other cases reduced. The difference in the number or size  
18 of projects is not known at this time, but if fewer projects are constructed and operated, lower levels of

19 construction and operations emissions would occur. Conversely, more projects may mean higher levels of  
20 construction and operations emissions. Individual projects under this alternative may be of sufficient size  
21 that their construction and operation emissions would still exceed applicable significance thresholds,  
22 when compared to existing conditions.

23 Overall, the air quality impacts associated with construction and operation of potential projects under  
24 Alternative 2 would be approximately the **same as** the Proposed Project.

25 As compared to existing conditions, the potential impact on air quality under Alternative 2 is considered  
26 **significant**.

27 **9.5.7.1.2 Impact 9-2: Construction and Operations of Projects Could Create Objectionable Odors**  
28 **Affecting a Substantial Number of People**

29 The same type of odor impacts from construction and operations would occur under Alternative 2 as  
30 described under the Proposed Project. Air quality impacts due to odors would be similar to the Proposed  
31 Project under Alternative 2 for the same reasons described above for Impact 9-1. Ecosystem restoration  
32 projects, including potentially odorous marshes and wetlands, would be less likely than under the  
33 Proposed Project. However, because the locations and details of projects and actions that might be  
34 constructed are not currently known, this potential impact on air quality is considered significant.

35 Overall, significant impacts on air quality due to odors under Alternative 2 would be **less than** under the  
36 Proposed Project.

37 As compared to existing conditions, the potential odor related impact under Alternative 2 is considered  
38 **less than significant**.

39 **9.5.7.1.3 Impact 9-3: Construction or Operation of Projects Could Expose Sensitive Receptors to**  
40 **Substantial Pollutant Concentrations**

41 The same type of emissions impacts from construction and operations would occur under Alternative 2 as  
42 described under the Proposed Project. Air quality impacts due to TAC and other pollutant emissions  
43 would be similar to the Proposed Project under Alternative 2 for the same reasons described above for

1 Impact 9-1. However, because the locations and details of projects and actions that might be constructed  
2 are not currently known, this potential impact on air quality is considered significant.

3 Alternative 2 could remove over 700, 000 acres of farmland from cultivation (320,000 acres inundated by  
4 surface water storage in the Tulare Lake Basin and up to 380,000 acres fallowed in the San Luis Drainage  
5 Area). The conversion from cultivated land to a storage reservoir would reduce emissions associated with  
6 farming activities, although the fallowing of land could increase air quality impacts resulting from  
7 fugitive dust unless best management practices for soil conservation are implemented.

8 Overall, significant impacts on air quality due to TAC and other pollutant emissions under Alternative 2  
9 would be approximately the **same as** the Proposed Project.

10 As compared to existing conditions, the potential TAC-related impacts of construction and operations  
11 under Alternative 2 are considered **significant**.

### 12 **9.5.7.2 Mitigation Measures**

13 Mitigation measures for Alternative 2 would be the same as those described in Sections 9.5.3.6.1  
14 (Mitigation Measure 9-1) and 9.5.3.6.3 (Mitigation Measure 9-3) for the Proposed Project. Because it is  
15 not known whether the mitigation measures listed above would reduce Impacts 9-1 and 9-3 to a less-than-  
16 significant level for Alternative 2, these potential impacts are considered **significant and unavoidable**.

## 17 **9.5.8 Alternative 3**

18 As described in Section 2A, Proposed Project and Alternatives, the water supply reliability projects and  
19 actions under Alternative 3 would be similar to those of the Proposed Project, although there would less  
20 emphasis on surface water projects. Ecosystem restoration (floodplain restoration, riparian restoration,  
21 tidal marsh restoration, and floodplain expansion) would be reduced relative to the Proposed Project, and  
22 restoration on publicly owned lands, especially in Suisun Marsh and the Yolo Bypass, would be  
23 emphasized. There would be more stressor management actions (e.g., programs for water quality, water  
24 flows) and more management for nonnative invasive species. Water quality improvements would be the  
25 same as for the Proposed Project. Actions under Alternative 3 to reduce flood risk would not include  
26 setback levees or subsidence reversal but would result in greater levee modification/maintenance and  
27 dredging relative to the Proposed Project. Reservoir reoperation and rock stockpiling would be the same  
28 as for the Proposed Project, as would activities to protect and enhance the Delta as an evolving place.

### 29 **9.5.8.1.1 Impact 9-1: Construction and Operations of Projects Could Conflict with an Applicable 30 Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a 31 Cumulatively Considerable Net Increase of Nonattainment Pollutants**

32 In consideration of the uncertainties regarding size, timing, and locations of potential projects, as well as  
33 the applicable jurisdictional AQMD or APCD regulations, CEQA guidance, thresholds of significance,  
34 and attainment plans, the same types of emissions impacts from construction and operations would occur  
35 under Alternative 3 as described under the Proposed Project. Compared to the Proposed Project,  
36 Alternative 3 would involve less construction and operation of projects to store surface water. Also less  
37 likely to occur would be ecosystem restoration projects to restore floodplains, riparian habitat, and tidal  
38 marsh. Construction and operations of collection and treatment facilities for current discharges into the  
39 Delta may be more likely in Alternative 3 than the Proposed Project because of the increased emphasis on  
40 reduction of stressors and invasive species in the Delta waters. Construction of setback levees and  
41 floodplain expansion in the Delta would be less likely in Alternative 3 than the Proposed Project, but  
42 maintenance and modification of other levees and dredging of sediments would be more likely.

43 Air quality impacts under Alternative 3 would in some cases be more increased, and in other cases  
44 reduced. The difference in the number or size of projects that could be constructed under Alternative 3 is

1 not known at this time, but if fewer projects are constructed and operated, lower levels of construction  
2 and operations emissions would occur. Conversely, more projects may mean higher levels of construction  
3 and operations emissions. Individual projects under this alternative may be of sufficient size that their  
4 construction and operation emissions would still exceed applicable significance thresholds, when  
5 compared to existing conditions

6 Overall, the air quality impacts associated with construction and operation of potential projects under  
7 Alternative 3 would be **less than** under the Proposed Project.

8 As compared to existing conditions, this potential impact on air quality under Alternative 3 is considered  
9 **significant**.

#### 10 9.5.8.1.2 Impact 9-2: Construction and Operations of Projects Could Create Objectionable Odors 11 Affecting a Substantial Number of People

12 The same type of odor impacts from construction and operations would occur under Alternative 3 as  
13 described under the Proposed Project. Air quality impacts due to odors would be similar to the Proposed  
14 Project under Alternative 3 for the same reasons described above for Impact 9-1. Ecosystem restoration  
15 projects, including potentially odorous marshes and wetlands, would be less likely than under the  
16 Proposed Project. However, because the locations and details of projects and actions that might be  
17 constructed are not currently known, this potential impact on air quality is considered significant.

18 Overall, significant impacts on air quality due to odors under Alternative 3 would be **less than** under the  
19 Proposed Project.

20 As compared to existing conditions, the potential odor related impacts under Alternative 3 are considered  
21 **less than significant**.

#### 22 9.5.8.1.3 Impact 9-3: Construction or Operation of Projects Could Expose Sensitive Receptors to 23 Substantial Pollutant Concentrations

24 The same type of emissions impacts from construction and operations would occur under Alternative 3 as  
25 described under the Proposed Project. Air quality impacts due to TAC and other pollutant emissions  
26 would be similar to the Proposed Project under Alternative 3 for the same reasons described above for  
27 Impact 9-1. However, because the locations and details of projects and actions that might be constructed  
28 are not currently known, this potential impact on air quality is considered significant.

29 Overall, significant impacts on air quality due to TAC and other pollutant emissions under Alternative 3  
30 would be **less than** under the Proposed Project.

31 As compared to existing conditions, the potential TAC-related impacts of construction and operations  
32 under Alternative 3 are considered **significant**.

#### 33 9.5.8.2 Mitigation Measures

34 Mitigation measures for Alternative 3 would be the same as those described in Sections 9.5.3.6.1  
35 (Mitigation Measure 9-1) and 9.5.3.6.3 (Mitigation Measure 9-3) for the Proposed Project. Because it is  
36 not known whether the mitigation measures listed above would reduce Impacts 9-1 and 9-3 to a less-than-  
37 significant level for Alternative 3, these potential impacts are considered **significant and unavoidable**.

## 38 9.6 References

39 ARB (California Air Resources Board). 2009a. Area Designations Maps/State and National. Sacramento,  
40 California. December. Site accessed February 7, 2011.  
41 <http://www.arb.ca.gov/desi/adm/adm.htm>.

- 1 ARB (California Air Resources Board). 2009b. *The California Almanac of Emissions and Air Quality*  
2 *2009 Addition*. Sacramento, California. March 27. Site accessed January 25, 26, and 27, 2011.  
3 <http://www.arb.ca.gov/aqd/almanac/almanac09/almanac09.htm>.
- 4 ARB (California Air Resources Board ). 2010. Glossary of Air Pollution Terms. Sacramento, California.  
5 October 19. Site accessed January 25, 2011. <http://www.arb.ca.gov/html/gloss.htm>.
- 6 ARB (California Air Resources Board). 2011a. Air Basin and County Map Boundaries. Sacramento,  
7 California. Site accessed February 7, 2011. <http://www.arb.ca.gov/desig/adm/basincnty.htm>.
- 8 ARB (California Air Resources Board). 2011b. California Map for Local Air District Websites.  
9 Sacramento, California. Site accessed February 7, 2011.  
10 <http://www.arb.ca.gov/capcoa/dismap.htm>.
- 11 ARB (California Air Resources Board). 2011c. iADAM Air Quality Data Statistics. Sacramento,  
12 California. January 27. Site accessed January 26 and 27, 2011.  
13 <http://www.arb.ca.gov/adam.topfourdisplay.php>.
- 14 ARB (California Air Resources Board). 2011d. California Air Basins. Sacramento, California. Site  
15 accessed January 25, 2011. <http://www.arb.ca.gov/knowzone/basin/basin.swf>.
- 16 BAAQMD (Bay Area Air Quality Management District). 2010. California Environmental Quality Act Air  
17 Quality Guidelines. December 2010. San Francisco, California. Site accessed February 8, 2011.  
18 <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>
- 19 BAAQMD (Bay Area Air Quality Management District). 2011. Rules and Regulations. San Francisco,  
20 California. October 4. Site accessed January 26, 2011.  
21 <http://www.baaqmd.gov/Divisions/Planning-and-Research/Rules-and-Regulations.aspx>.
- 22 City of Carlsbad. 2005. *Carlsbad Precise Development Plan and Desalination Plant Project*  
23 *Environmental Impact Report*. Carlsbad, CA.
- 24 City of Davis. 2007. *Davis-Woodland Water Supply Project Final Environmental Impact Report*. Davis,  
25 CA. In association with UC Davis and City of Woodland. October.
- 26 City of Huntington Beach. 2010. *Draft Subsequent Environmental Impact Report for the Seawater*  
27 *Desalination Project at Huntington Beach*. Huntington Beach, CA. Prepared by DUDEK,  
28 Encinitas, CA. May.
- 29 DFG (California Department of Fish and Game). 2011. Conservation Strategy for Restoration of the  
30 Sacramento-San Joaquin Delta Ecological Management Zone and the Sacramento and San  
31 Joaquin Valley Regions. Draft. July.
- 32 DPR (California Department of Parks and Recreation). 2010. Initial Study/Negative Declaration (IS/ND)  
33 Bidwell-Sacramento River State Park , Sacramento River Access at Pine Creek, Facilities  
34 Development and Habitat Restoration Project. Addendum and Final (with edits incorporated).  
35 February.
- 36 DWR (California Department of Water Resources). 2010. *Final Environmental Impact Report: North*  
37 *Delta Flood Control and Ecosystem Restoration Project*. Sacramento, CA. October.
- 38 DWR, Yuba County Water Agency, and Reclamation (California Department of Water Resources, Yuba  
39 County Water Agency, and U.S. Bureau of Reclamation). 2007. *Draft Environmental Impact*  
40 *Report/Environmental Impact Statement for the Proposed Lower Yuba River Accord*. Prepared by  
41 HDR and Surface Water Resources, Inc. June.

- 1 Reclamation, Contra Costa Water District, and Western Area Power Administration (U.S. Bureau of  
2 Reclamation, Contra Costa Water District, and Western Area Power Administration). 2009.  
3 *Los Vaqueros Reservoir Expansion Project Draft Environmental Impact*  
4 *Statement/Environmental Impact Report*. February.
- 5 Reclamation and San Luis & Delta-Mendota Water Authority (U.S. Bureau of Reclamation and San Luis  
6 & Delta-Mendota Water Authority). 2008. *Grassland Bypass Project, 2010–2019 Environmental*  
7 *Impact Statement and Environmental Impact Report*. Prepared by ENTRIX, Concord, CA.  
8 December.
- 9 Reclamation, USFWS, and DFG. 2010. Suisun Marsh Habitat Management, Preservation, and  
10 Restoration Plan. *Draft Environmental Impact Report/Environmental Impact Statement*. October.
- 11 SFPUC (San Francisco Public Utilities Commission). 2011. *Final Environmental Impact Report:*  
12 *Calaveras Dam Replacement Project*. San Francisco, CA. January.
- 13 USACE (U.S. Army Corps of Engineers). 2007. Delta Dredged Sediment Long-Term Management  
14 Strategy (Pinole Shoal Management Area). Study Work Plan. Management Committee Review  
15 Draft. San Francisco District. May 9.
- 16 USACE (U.S. Army Corps of Engineers) and the Port of West Sacramento. 2011. *Draft Supplemental*  
17 *Environmental Impact Statement/Subsequent Environmental Impact Report: Sacramento River*  
18 *Deep Water Ship Channel*. February. West Sacramento, CA. Site accessed March 8, 2011.  
19 [http://www.spn.usace.army.mil/projects/dwsc/eis\\_seis/\\_SRDWSC\\_Draft\\_SEIS-SEIR.pdf](http://www.spn.usace.army.mil/projects/dwsc/eis_seis/_SRDWSC_Draft_SEIS-SEIR.pdf).
- 20 USEPA (U.S. Environmental Protection Agency). 2006. Terms of the Environment, Glossary,  
21 Abbreviations, and Acronyms. Site accessed February 4, 2011.  
22 <http://www.epa.gov/OCEPAterms/aterms.html>.
- 23 USEPA (U.S. Environmental Protection Agency). 2010. The Green Book Nonattainment Areas for  
24 Criteria Pollutants. December 17. Site accessed January 25, 2011.  
25 <http://www.epa.gov/oaqps001/greenbk/>.
- 26 WMWD and Reclamation (Western Municipal Water District and U.S. Bureau of Reclamation). 2011.  
27 *Draft Supplemental Environmental Impact Report/Environmental Impact Statement: Riverside-*  
28 *Corona Feeder Project*. Riverside and Temecula, CA. January.