

Introduction

This section describes recent changes to the existing environmental conditions and regulatory setting of the Project area, summarizes the unchanged affected environment, and describes changed environmental effects related to air quality for the Project. This section contains a review and update of the 1995 DEIR/EIS air quality impact assessment, incorporated by reference in the 2001 FEIR. The air quality impacts of the Project were analyzed most recently in the 2001 FEIS, which also served as a basis for this analysis.

The 2001 FEIR and 2001 FEIS concluded that the Project alternatives would affect air quality on and in the vicinity of the four Project islands. Since that time, there have been minor changes in the affected environment and regulatory setting. However, there have been no changes in the Project that result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects on air quality.

The 2001 FEIR and 2001 FEIS air quality analyses have been updated here to reflect current environmental conditions on and around the Project islands. These changes are minor and do not affect the results of the analyses reported in the 2001 FEIR and 2001 FEIS.

Identification of the Project's specific places of use as part of the affected environment does not affect air quality in any way that alters the conclusions of the 2001 FEIR and 2001 FEIS. The Project will have direct effects on air quality due to increased energy used to bank Project water in the Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank. These effects have been fully analyzed in the Semitropic Groundwater Banking Project Final EIR (SCH#1993072024), Semitropic Groundwater Banking Project Stored Water Recovery Unit Final Supplemental EIR (SCH#1999031100) and Antelope Valley Water Bank Final EIR (SCH#2005091117) and are not analyzed in this Place of Use EIR.

Indirect effects on air quality at the places of use may result from increased energy used as a result of removing a barrier to growth in the places of use. Such effects are fully analyzed by the urban water management plan EIR of each affected place of use, the analysis of which has been incorporated herein, where necessary. The indirect effects on air quality, if any, associated with the provision

of Project water to the places of use are also addressed in Chapter 5, “Cumulative Impacts,” and Chapter 6, “Growth-Inducing Impacts.”

Summary of Impacts

Table 4.13-1 provides a summary and comparison of the impacts and mitigation measures from the 2001 FEIR, 2001 FEIS, and this Place of Use EIR.

Table 4.13-1. Comparison between Delta Wetlands Project 2010 Place of Use EIR and 2001 FEIR and 2001 FEIS Impacts and Mitigation Measures for Air Quality

2001 FEIR and 2001 FEIS Impacts and Mitigation Measures	Differences between 2010 Place of Use EIR and 2001 FEIR and 2001 FEIS Impacts and Mitigation Measures
ALTERNATIVES 1 AND 2	
<p>Impact O-1: Increase in CO Emissions on the Project Islands during Construction (LTS)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-1: Increase in CO Emissions on the Project Islands during Construction (LTS)</p> <p>Mitigation is not required, but the following will reduce Project impacts:</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>No change.</p>
<p>Impact O-2: Increase in CO Emissions on the Project Islands during Project Operation (LTS)</p> <p>Mitigation: No mitigation is required.</p>	<p>Impact Air-2: Increase in CO Emissions on the Project Islands during Project Operation (LTS)</p> <p>Mitigation: No mitigation is required</p> <p>No change.</p>
<p>Impact O-3: Increase in ROG Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-3: Increase in ROG Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>No change.</p>

2001 FEIR and 2001 FEIS Impacts and Mitigation Measures	Differences between 2010 Place of Use EIR and 2001 FEIR and 2001 FEIS Impacts and Mitigation Measures
<p>Impact O-4: Increase in NO_x Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-5: Increase in NO_x Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>No change.</p>
<p>Impact O-5: Increase in ROG Emissions on the Project Islands during Project Operation (SU)</p> <p>Mitigation Measure RJ-1: Reduce the Number of Outward Boat Slips Located at Recreation Facilities</p> <p>Mitigation Measure O-4: Coordinate with Local Air Districts to Reduce or Offset Emissions</p>	<p>Impact Air-4: Increase in ROG Emissions on the Project Islands during Operation (LTS-M)</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions</p> <p>Reduced impact.</p>
<p>Impact O-6: Increase in NO_x Emissions on the Project Islands during Project Operation (SU)</p> <p>Mitigation Measure RJ-1: Reduce the Number of Outward Boat Slips Located at Recreation Facilities</p> <p>Mitigation Measure O-4: Coordinate with Local Air Districts to Reduce or Offset Emissions</p>	<p>Impact Air-6: Increase in NO_x Emissions on the Project Islands during Operation (LTS-M)</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions</p> <p>Mitigation Measure Air-MM-5: Use Electrically Powered Pumps in Lieu of Diesel Powered Pumps</p> <p>Reduced impact.</p>
<p>Impact O-7: Increase in PM10 Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure O-5: Implement Construction Practices That Reduce Generation of Particulate Matter.</p>	<p>Impact Air-7: Increase in PM10 Emissions on the Project Islands during Construction (LTS-M)</p> <p>Mitigation Measure Air-MM-6: Implement Construction Practices that Reduce Generation of Particulate Matter</p> <p>Reduced impact.</p>
<p>Impact O-8: Increase in PM10 Emissions on the Project Islands during Project Operation (B)</p> <p>Mitigation: No mitigation is required.</p>	<p>Impact Air-8: Increase in PM10 Emissions on the Project Islands during Operation (B and LTS)</p> <p>Mitigation: No mitigation is required</p> <p>No change.</p>

2001 FEIR and 2001 FEIS Impacts and Mitigation Measures	Differences between 2010 Place of Use EIR and 2001 FEIR and 2001 FEIS Impacts and Mitigation Measures
ALTERNATIVE 3	
<p>Impact O-9: Increase in CO Emissions on the Project Islands during Construction (LTS)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-1: Increase in CO Emissions on the Project Islands during Construction (LTS)</p> <p>Mitigation is not required, but the following will reduce Project impacts:</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>No change.</p>
<p>Impact O-10: Increase in CO Emissions on the Project Islands during Project Operation (LTS)</p> <p>Mitigation: No mitigation is required.</p>	<p>Impact Air-2: Increase in CO Emissions on the Project Islands during Project Operation (LTS)</p> <p>Mitigation: No mitigation is required</p> <p>No change.</p>
<p>Impact O-11: Increase in ROG Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-3: Increase in ROG Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>No change.</p>
<p>Impact O-12: Increase in NO_x Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p>	<p>Impact Air-5: Increase in NO_x Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>No change.</p>
<p>Impact O-13: Increase in ROG Emissions on the Project Islands during Project Operation (SU)</p> <p>Mitigation Measure RJ-1: Reduce the Number of Outward Boat Slips Located at Recreation Facilities</p> <p>Mitigation Measure O-4: Coordinate with Local Air Districts to Reduce or Offset Emissions</p>	<p>Impact Air-4: Increase in ROG Emissions on the Project Islands during Operation (LTS-M)</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions to Less than the Significance Threshold</p> <p>Reduced impact.</p>

2001 FEIR and 2001 FEIS Impacts and Mitigation Measures	Differences between 2010 Place of Use EIR and 2001 FEIR and 2001 FEIS Impacts and Mitigation Measures
<p>Impact O-14: Increase in NO_x Emissions on the Project Islands during Project Operation (SU)</p> <p>Mitigation Measure RJ-1: Reduce the Number of Outward Boat Slips Located at Recreation Facilities</p> <p>Mitigation Measure O-4: Coordinate with Local Air Districts to Reduce or Offset Emissions</p>	<p>Impact Air-6: Increase in NO_x Emissions on the Project Islands during Operation (LTS-M)</p> <p>Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities</p> <p>Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions to Less than the Significance Threshold</p> <p>Mitigation Measure Air-MM-5: Use Electrically Powered Pumps in lieu of Diesel Powered Pumps Reduced impact.</p>
<p>Impact O-15: Increase in PM₁₀ Emissions on the Project Islands during Construction (SU)</p> <p>Mitigation Measure O-1: Perform Routine Maintenance of Construction Equipment</p> <p>Mitigation Measure O-2: Choose Borrow Sites Close to Fill Locations</p> <p>Mitigation Measure O-3: Prohibit Unnecessary Idling of Construction Equipment Engines</p> <p>Mitigation Measure O-5: Implement Construction Practices That Reduce Generation of Particulate Matter</p>	<p>Impact Air-7: Increase in PM₁₀ Emissions on the Project Islands during Construction (LTS-M)</p> <p>Mitigation Measure Air-MM-6: Implement Construction Practices that Reduce Generation of Particulate Matter Reduced impact.</p>
<p>Impact O-16: Decrease in PM₁₀ Emissions on the Project Islands during Project Operation (B)</p> <p>Mitigation: No mitigation is required.</p>	<p>Impact Air-8: Increase in PM₁₀ Emissions on the Project Islands during Operation (B and LTS)</p> <p>Mitigation: No mitigation is required No change.</p>
<p>Note: SU = Significant and unavoidable; LTS = Less than significant; LTS-M = Less than significant with mitigation; B = Beneficial.</p>	

Summary of Changes, New Circumstances, and New Information

Changes in the affected environment, regulatory setting, and environmental effects of the Project related to air quality are described in the Existing Conditions section below. A summary of findings based on that consideration follows.

Substantial Changes in the Project

Since the 2001 FEIR and 2001 FEIS were completed, there have been no substantial changes in the Project resulting in new significant effects or substantial increase in the severity of effects on air quality.

New Circumstances

Since the 2001 FEIR and 2001 FEIS, there have been no new circumstances that result in new significant effects or substantial increase in the severity of effects on air quality. However, several of the national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS) have been updated and are discussed below. Additionally, the updated environmental effects subsection discusses revision of the air quality significance thresholds established by the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD); as well as the most recent nonattainment status for the Project site with regard to its location in both the San Francisco Bay Area Air Basin (SFBAAB) and the San Joaquin Valley Air Basin (SJVAB). Lastly, because the nonattainment status has changed for both the SFBAAB and the SJVAB, the applicable general conformity threshold levels also have changed. These newer significance thresholds and conformity thresholds were used to evaluate the Project's air quality-related environmental effects.

New Information

There is no new information of substantial importance that would result in an increase in severity of effects on air quality. However, the most recent air quality monitoring data for the monitoring stations located closest to the Project islands have been included in the air quality impact analysis for discussion. The environmental effects discussion also includes recalculated baseline and alternatives activity levels, with the activity levels used in the 2001 FEIR and 2001 FEIS reviewed and updated as necessary.

Using the updated activity levels, the Project's emissions were estimated. The emission estimates were based on the updated activity levels and emission factors and emission factor models that have been updated since the 2001 FEIR and 2001 FEIS.

Existing Conditions

This section discusses changes in the existing conditions or regulatory setting since the 2001 FEIR and 2001 FEIS. Project construction (i.e., earthwork and operation of construction equipment) as well as operation (i.e., recreation-generated vehicle and boat trips, agricultural activities, and operation of pumps) would be the primary source of air pollutant emissions during Project operations.

Sources of Information

This section describes the air quality environment in the Project vicinity for 2008–2009, which represents the baseline period. The information used to describe existing air quality conditions was derived from many sources, including the California Air Resources Board (ARB), the SJVAPCD, and the BAAQMD. Bacon and Bouldin Islands are located in San Joaquin County, which is within the jurisdiction of the SJVAPCD. Holland and Webb Tracts are located in Contra Costa County, which is within jurisdiction of the BAAQMD. The SJVAPCD is located within the SVAB, and the BAAQMD is located within the BAAB. Because the Project is located within multiple air districts with separate and distinct thresholds of significance, Project significance is evaluated using both air district thresholds of significance. The local regulations established by San Joaquin and Contra Costa Counties that pertain to the islands that fall within their respective boundaries are described below.

NAAQS and CAAQS are described below for each criteria pollutant of concern to provide context for the discussion of existing air quality conditions in the Project area. The pollutants of most concern include the ozone precursors (reactive organic gases [ROG] and oxides of nitrogen [NO_x]), carbon monoxide (CO), and particulate matter (both 10 microns or less in diameter [PM10] and 2.5 microns or less in diameter [PM2.5]). Information on sulfur dioxide (SO_2) and lead were not included in this chapter. Although both are criteria pollutants, SO_2 and lead are emitted primarily by industrial sources and neither is considered a pollutant of concern in the Project area. Nitrogen dioxide (NO_2) is usually not discussed separately from other NO_x compounds in analyses of nonindustrial projects because high NO_2 concentrations most often are associated with industrial combustion sources. Consequently, this air analysis focuses on NO_x compounds only as precursors to ozone.

Regulatory Setting

The following section describes new regulations affecting air quality relative to the Project and summarizes previously identified regulations.

Federal

No changes have been made to the CO NAAQS since the 2001 FEIR and 2001 FEIS. However, the NAAQS for both ozone and particulate matter have been modified since 2001. Table 4.13-2 shows the most recent NAAQS for all criteria pollutants. For ozone, the 1-hour NAAQS have been replaced by an 8-hour standard of 0.075 parts per million (ppm). Also, the annual PM10 standard has been dropped and new PM2.5 NAAQS have been developed for the 24-hour and annual averaging periods.

Table 4.13-2. Ambient Air Quality Standards Applicable in California

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b
Ozone (O ₃)	1 hour	0.09 ppm	–
	8 hour	0.070 ppm	0.075 ppm
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen dioxide (NO ₂)	1 hour	0.18 ppm	–
	Annual	0.030 ppm	0.053 ppm
Sulfur dioxide (SO ₂)	1 hour	0.25 ppm	–
	3 hour	–	0.5 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual	–	0.03 ppm
Inhalable particulate matter (PM10)	24 hour	50 µg/m ³	150 µg/m ³
	Annual	20 µg/m³	–
Fine particulate matter (PM2.5)	24 hour	–	35 µg/m³
	Annual	12 µg/m³	15 µg/m³
Sulfates	24 hour	25 µg/m ³	–
Lead (Pb)	30 day	1.5 µg/m ³	–
	Calendar quarter	–	1.5 µg/m ³
	Rolling 3-month average	–	0.15 ppm
Hydrogen sulfide	1 hour	0.03 ppm	–
Vinyl chloride	24 hour	0.010 ppm	–

Source: California Air Resources Board 2008.

ppm = parts per million by volume.

µg/m³ = micrograms per cubic meter.

NA = not applicable.

^a The California ambient air quality standards (CAAQS) for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM10, and PM2.5 are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^b The national ambient air quality standards (NAAQS), other than O₃ and those based on annual averages, are not to be exceeded more than once a year. The O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1.

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The Project islands are located in Contra Costa County and San Joaquin County and are within the boundaries of the SJVAB and the SFBAAB. All urban areas within the SJVAB and the SFBAAB are classified as maintenance areas, while the nonurbanized areas, including the Project islands, are classified as attainment for the CO NAAQS.

The SJVAB is classified as a serious nonattainment area for the ozone NAAQS and a nonattainment area for the PM2.5 NAAQS, but is in attainment for the PM10 NAAQS (the San Joaquin Valley planning area is classified as a serious

maintenance area for the NAAQS). The SJVAB is classified as a moderate maintenance area for the CO NAAQS. The SFBAAB is classified as a marginal nonattainment area for the ozone NAAQS and a nonattainment area for the PM2.5 NAAQS, but is in attainment for the PM10 NAAQS. The SFBAAB is classified as a moderate maintenance area for the CO NAAQS. (Table 4.13-3.)

Table 4.13-3. Federal and State Attainment Status for the SJVAB and SFBAAB

Pollutant	San Joaquin Valley Air Basin		San Francisco Bay Area Air Basin	
	Federal	State	Federal	State
1-hour O ₃	NA ¹		NA ¹	
8-hour O ₃	Serious nonattainment	NA ²	Marginal nonattainment	NA ²
CO	Moderate maintenance		Moderate maintenance	
PM10	Serious maintenance		Unclassified/attainment	
PM2.5	Nonattainment		Nonattainment	

¹ Previously in non-attainment area; no longer subject to the 1-hour standard due to EPA revocation of the 1-hour standard on June 15, 2005.

² The ARB approved the 8-hour ozone standard on April 28, 2005 and it became effective on May 17, 2006. However, the ARB has not yet designated areas for this standard.

Appendix C, Tables C-1 and C-2 show air quality monitoring data for 2006 through 2008. Data are included for the closest Delta air quality monitoring stations at 5551 Bethel Island Road, Bethel Island, and 583 West 10th Street, Pittsburg, both in Contra Costa County. Currently, monitoring is conducted for ozone, CO, and PM10, but not for PM2.5. There were no violations of the CO or PM10 NAAQS at either station. However, during this 3-year period, there were 25 violations of the federal 8-hour ozone NAAQS.

Conformity with State Implementation Plans

Projects involving federal funding or federal approval are required to show conformity with EPA's general conformity rule (40 CFR, Part 51, Subpart W) if they would result in emissions exceeding certain levels of nonattainment and maintenance pollutants. These pollutant threshold levels, called *de minimis* emission levels, vary from pollutant to pollutant and depend on the attainment status of individual air basins. Based on the NAAQS maintenance and nonattainment designations for the SJVAB and SFBAAB (Table 4.13-4), the applicable *de minimis* levels for this Project are 100 tons per year (tpy) of ROG and NO_x in the SFBAAB, 50 tpy of ROG and NO_x in the SJVAB, 70 tpy of PM10 in the SJVAB, and 100 tpy of PM2.5 in the SFBAAB.

Table 4.13-4. Federal *de minimis* thresholds for the SJVAB and SFBAAB

Tons per year	ROG and NO _x	PM10	PM2.5
SFBAAB	100	–	100
SJVAB	50	70	–

If the Project would result in total direct and indirect emissions in excess of the *de minimis* emission rates, it must be demonstrated through conformity determination procedures that the emissions conform to the applicable State Implementation Plans for each affected pollutant.

State

No changes have been made to the CO CAAQS since the 2001 FEIR and 2001 FEIS. However, the CAAQS for both ozone and particulate matter have been modified since 2001. Table 4.13-2 shows the most recent CAAQS for all criteria pollutants. For ozone, the 1-hour CAAQS has been reduced to 0.09 ppm and an 8-hour standard of 0.070 has been established. Also, the annual PM10 standard has been reduced to 20 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), and a new PM2.5 standard has been developed for the annual averaging period.

Appendix C, Tables C-1 and C-2 also show no violations of the CO CAAQS at either station. However, during this 3-year period, there were 18 violations of the state 1-hour ozone CAAQS and 16 violations of the state 24-hour PM10 CAAQS.

Under the California Clean Air Act, which has been patterned after the federal Clean Air Act, areas are designated as attainment or nonattainment with respect to the state standards. The SJVAB is classified as a severe nonattainment area for the ozone CAAQS and a nonattainment area for the PM10 and PM2.5 CAAQS, but is in attainment for the CO CAAQS. The SFBAAB is classified as a serious nonattainment area for the ozone CAAQS and a nonattainment area for the PM10 and PM2.5 CAAQS, but is in attainment for the CO CAAQS.

Appendix C, Tables C-1 and C-2 show no violations of the CO CAAQS at either station. However, during this 3-year period (2006–2008), there were 18 violations of the state 1-hour ozone CAAQS and 16 violations of the state 24-hour PM10 CAAQS.

Local

The BAAQMD has issued several updates to its air quality plan since the 2001 FEIR and 2001 FEIS. They include:

- 2009 Bay Area Clean Air Plan (in progress)
- 2005 Bay Area Ozone Strategy (BAAQMD 2006),

- 2001 Ozone Attainment Plan (BAAQMD 2001), and
- Particulate Matter Implementation Schedule (BAAQMD 2005).

There are no aspects of the Project that would cause it to be inconsistent with these plans and strategies.

The SJVAPCD has issued several updates to its air quality plans since the 2001 FEIR and 2001 FEIS. They include:

- 2007 Ozone Plan (SJVAPCD 2007),
- 2004 Extreme Ozone Demonstration Plan (SJVAPCD 2004),
- SB 656 Report (SJVAPCD 2005)
- 2003 PM10 Plan (SJVAPCD 2003),
- 2006 PM10 Plan (SJVAPCD 2006), and
- 2007 PM10 Maintenance Plan (SJVAPCD 2007).

There are no aspects of the Project that would cause it to be inconsistent with these plans and strategies. However, since 1991 the SJVAPCD has strengthened its Regulation 8, which limits dust from construction activities. The Project would be required to comply with the latest version of the SJVAPCD's Regulation 8, which includes preparation of a dust control plan.

Affected Environment

Summary of Affected Environment

The four Project islands are located in the Delta, a flat, sea-level area with moderate temperatures and rainfall. The Delta is upwind from major population centers in the SJVAB and the Sacramento Valley Air Basin. Pollutants generated in the Delta are transported to these areas, and the Delta receives pollutant transport from the Bay Area.

Changes since the 2001 FEIR and 2001 FEIS

Existing air quality conditions are, for the most part, as they were presented in the 2001 FEIR and 2001 FEIS and are hereby incorporated by reference. The only changes involve more recent air pollution monitoring data, changes in the regulatory environment, and changes due to new air quality models. The updated air pollution concentrations, based upon the most recent air pollution monitoring data and changes to the attainment/nonattainment pollutant status for the SFBAAB and the SJVAB, are summarized in Appendix C, Tables C-1 and C-2, and are discussed in the Regulatory Setting subsection above.

Environmental Commitments

The environmental commitments, as described in Chapter 2, would not alter the impact findings related to air quality.

Environmental Effects

Methods

The methods used to estimate air emissions in the 2001 FEIR and 2001 FEIS were based on the level of existing activity on each island, estimates of future activity on each island assuming no project, and estimates of expected activity on each island for each Project alternative based on the published BAAQMD and SJVAB CEQA guidance. A similar methodology was used for this analysis. However, the emission estimates reflect updated estimates of activity levels for existing and future conditions. The activity levels for existing conditions, future no-project (2020), and Alternatives 2 and 3 are shown in Appendix C, Tables C-3, C-4, C-5, and C-6, respectively. The activity levels for Alternatives 2 and 1 are assumed to be identical for this analysis.

This analysis assumes that the future No-Project Alternative has a slightly lower amount of recreational activity than in the 2001 FEIR and 2001 FEIS. It further assumes that the future No-Project Alternative will have the same level of agricultural activity under as in the 2001 FEIR and 2001 FEIS, except that the amount of existing agricultural activity will increase slightly on Bacon and Bouldin Islands and drop for Webb and Holland Tracts.

This analysis also assumes that Alternative 2 and 1 would require approximately the same level of construction activity as in the 2001 FEIR and 2001 FEIS, except that Bacon Island would require more borrow material and Bouldin Island and Holland Tract would require less borrow material.

This analysis assumes that operation of Alternative 2 or 1 would have the same amount of agricultural activity as in the 2001 FEIR and 2001 FEIS. However, based on Mitigation Measure REC-MM-1, the construction of recreation facilities will be significantly reduced; the Project will reduce the total number and size of recreation facilities proposed by removing all 22 facilities proposed for construction from Bacon Island and Webb Tract, and reducing the number or size of proposed facilities on Bouldin Island and Holland Tract by 70%. This mitigation will result in an overall 86.8% reduction in recreation facilities.

This analysis assumes that Alternative 3 would require the same level of construction and operational activity as in the 2001 FEIR and 2001 FEIS.

Once the activity levels were estimated, the emissions associated with each alternative's activity level were calculated using the most recent emission factor

models available. These models, which included EMFAC2007 and OFFROAD2007, were not available for the 2001 FEIR and 2001 FEIS.

Construction-Related Impact Assessment Methods

Construction-related emissions were calculated only for Alternatives 2 and 3 because Project-related construction does not occur under existing conditions or under the No-Project Alternative. Alternative 1 construction emissions would be the same as those of Alternative 2.

The average amount of CO, ROG, NO_x, PM10, and PM2.5 that would be emitted on each island during construction was calculated based on the average number of vehicles and boat trips expected to take place each day, as well as the number of hours of rock placement and the number of cubic yards of earth moved per day. All trips referred to in this chapter are one-way trips, rather than round trips to avoid confusion.

Operational Impact Assessment Methods

Emissions were estimated for three distinct operational activities: water pumping, recreational trips, and agricultural operations. The 2001 FEIR and 2001 FEIS considered periodic levee maintenance and improvement. However, these activities were dismissed, as they did not result in a calculable impact. The methods used to estimate emissions for each of these categories are as follows.

Pumping

Emissions generated during pumping were calculated only for Alternatives 2 and 3 because discharge pumping of stored water is not conducted under existing conditions or the No-Project Alternative. Although the amount of discharge under Alternative 1 would be slightly different from the amount of discharge under Alternative 2, Alternative 1 is similar enough to Alternative 2 that little variation in pumping emissions is expected to occur. The Project's pumps could be either electrically or diesel-powered. Criteria pollutant pumping emissions were estimated only for the diesel-powered pump scenario.

Recreation

Recreation-related air emissions were calculated for existing conditions, Alternative 2, Alternative 3, and the No-Project Alternative. Recreation emissions for Alternative 1 were assumed to be identical to those of Alternative 2. Recreational trips include on-road vehicles and boats traveling to the Project islands.

Agriculture

Agriculture emissions were calculated for existing conditions, Alternative 2, and the No-Project Alternative. Agriculture emissions under Alternative 1 would be identical to those of Alternative 2. No agricultural use of the Project islands would occur under Alternative 3. Agriculture emission sources include agricultural equipment, nonharvest vehicles, and their associated fuel use. Also, the amount of disturbed acreage is used to estimate fugitive PM10 and PM2.5 emissions.

Significance Criteria

The air quality impact analysis considered several criteria for determining the significance of impacts related to this resource. The analysis took into account both relevant criteria contained in Appendix G of the State CEQA Guidelines (Association of Environmental Professionals 2009) and Project-specific criteria developed by the lead agency to address potential impacts unique to the Project's location and elements.

Because Project-related emissions cannot be readily quantified in terms of concentration, they are quantified in terms of mass emissions per unit time. Therefore, significance is determined based on threshold quantities rather than by the CAAQS and NAAQS. Table 4.13-5 summarizes the emission thresholds used in this analysis.

In the SJVAB, the SJVAPCD has established thresholds of 10 tpy of ROG and NO_x for operational emissions. The SJVAPCD has not established thresholds for construction. The SJVAPCD's approach to CEQA analyses of construction PM10 impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions. The SJVAPCD has determined that compliance with its Regulation 8 for all sites constitutes sufficient mitigation to reduce PM10 impacts to a level considered less than significant. Large construction projects lasting many months may exceed the SJVAPCD's annual threshold for NO_x emissions (SJVAB 2002). Because construction of either Project alternative would require several months, the SJVAPCD's operational thresholds of 10 tpy of ROG and NO_x are also used to evaluate the significance of each alternative's construction emissions. The SJVAPCD has not established significance thresholds for CO or PM2.5.

Similarly, in the SFBAAB, the BAAQMD has established thresholds for project operation but not for project construction. The BAAQMD's operational thresholds equal 15 tpy and 80 pounds per day (ppd) for ROG, NO_x, and PM10 (BAAQMD 1999). The BAAQMD has identified a set of feasible PM feasible control measures that can be reasonably implemented to significantly reduce PM10 emissions for construction activities. Some measures should be implemented at all construction sites (Basic Measures), regardless of size. Additional measures should be implemented at larger construction sites (greater than 4 acres) where PM10 emissions generally will be higher (Enhanced

Measures) (BAAQMD 1999). Construction equipment emits CO and ozone precursors; however, these emissions are included in emission inventory that is the basis for regional air quality plans, and are not expected to impede attainment or maintenance of ozone and CO standards in the SFBAAB (BAAQMD 1999).

Table 4.13-5 also shows the applicable federal general conformity thresholds. Those thresholds are 50 tpy for ROG and NO_x in the SJVAB, and 100 tpy for ROG and NO_x in the SFBAAB. Both the SJVAB and the SFBAAB have a 100 tpy CO conformity threshold. The SFBAAB is in attainment for the federal PM10 and PM2.5 thresholds. Consequently, it does not have a conformity threshold. In contrast, the SJVAB has a conformity threshold of 100 tpy for PM10.

For this analysis, rather than segregate emissions by air basin, the Project's total emissions are calculated and compared to the most stringent of either the SJVAPCD or BAAQMD thresholds.

Table 4.13-5. Air Quality Thresholds of Significance

	ROG	NO _x	CO	PM2.5	PM10
Construction— SJVAPCD	10 tpy	10 tpy	N/A	Comply with Regulation 8	Comply with Regulation 8
Construction— BAAQMD	None	None	None	Comply with enhanced mitigation measures	Comply with enhanced mitigation measures
Operation—SJVAPCD	10 tpy	10 tpy	N/A	None	None
Operation—BAAQMD	80 ppd, 15 tpy	80 ppd, 15 tpy	N/A	None	80 ppd, 15 tpy
Conformity—SJVAB	50 tpy	50 tpy	N/A	N/A	100 tpy
Conformity—SFBAAB	100 tpy	100 tpy	N/A	100 tpy	Not applicable

Impacts and Mitigation Measures

As in the 2001 FEIR and 2001 FEIS, this analysis identifies eight impacts related to construction and operational activities that produce CO, ROG, NO_x, PM2.5 and PM10. Two mitigation measures, Mitigation Measure O-4, now Mitigation Measure Air-MM-4, and REC-MM-1, differ from those in the 2001 FEIR and 2001 FEIS.

This analysis finds significant and unavoidable construction-related NO_x impacts for each alternative, which is the same as in the 2001 FEIR and 2001 FEIS. However, for operational NO_x emissions, this analysis finds that, for either alternative, using electrically powered pumps would result in a less-than-significant operational NO_x impact, while using diesel-powered pumps would result in a significant NO_x impact. The previous analysis found that operational NO_x impacts would be significant and unavoidable for either electrically

powered or diesel-powered pumps. This analysis finds that emission offsets or electrically powered pumps can be used to mitigate the NO_x emission impacts from the use of diesel-powered pumps to a less-than-significant level. An increased reduction in recreation facilities, leading to reduced recreational boating and boating-related vehicle trips, also will offset part of the NO_x emission impacts from the use of diesel-powered pumps.

The 2001 FEIR and 2001 FEIS found that construction-related PM10 impacts were significant and unavoidable for each alternative. In contrast, this analysis finds that PM10 impacts are significant, but can be mitigated to a less-than-significant level through implementation of SJVAPCD and BAAQMD required fugitive dust control measures. This changed finding is attributable primarily to newer PM10 significance thresholds that have been adopted by the SJVAPCD and BAAQMD since the 2001 FEIR and 2001 FEIS. This analysis concludes that operation of the Project would result in beneficial PM10 impacts.

For Alternatives 2, 1, and 3, this analysis finds that PM2.5 impacts would be less than significant for construction and operation. Implementation of SJVAPCD and BAAQMD required fugitive dust control measures would reduce construction-related fugitive dust emissions to less than significant.

Proposed Project (Alternative 2)

Carbon Monoxide Emissions

Alternative 2 involves storage of water on Bacon Island and Webb Tract (Reservoir Islands), with Bouldin Island and Holland Tract (Habitat Islands) managed primarily as wildlife habitat. The impacts of Alternative 2 on air quality conditions are described below, along with any changes to the impacts identified in the 2001 FEIR and 2001 FEIS.

Appendix C, Tables C-7 through C-10 show ROG, NO_x, CO, PM10, and PM2.5 emissions for Alternative 2 in detail.

Impact Air-1: Increase in CO Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, Alternative 2 would increase CO emissions during construction by 876 ppd and 109.5 tpy. This represents a higher level of CO emissions than was estimated for the 2001 FEIR and 2001 FEIS, primarily because the construction activity levels are higher and because more recent emission factors have been used for this analysis. However, as in the 2001 FEIR and 2001 FEIS, the Project's CO emissions are considered less than significant because the Project is in a CO attainment area under state and federal CO standards. Implementation of the four mitigation measures identified in the 2001 FEIR and 2001 FEIS and repeated below are not required for CO impacts but would reduce the quantity of CO generated during construction.

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

During construction under Alternative 2, the primary source of CO emissions and other pollutants, including ROG and NO_x, is the exhaust generated by earthmoving equipment and other construction and transport vehicles. Therefore, construction crews will be required to perform routine maintenance of earthmoving equipment, as well as all other construction and transport vehicles. Routine maintenance involves oil changes and tune-ups performed at least as frequently as recommended by the manufacturers. This measure will be included as a condition of the construction contract and will be enforced through weekly inspection by the Project proponent.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations

Construction crews will be required to take borrow material from appropriate sites located closest to intended fill locations. This measure would reduce the overall amount of equipment and vehicle operation, thereby reducing exhaust emissions of CO and other pollutants, including ROG, NO_x, and PM₁₀. This measure also would reduce the amount of PM₁₀ emitted into the air by vehicles traveling over unpaved or dusty surfaces, the main source of PM₁₀ emissions during construction. This measure will be included as a condition of the construction contract and will be enforced through weekly inspection.

Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines

Construction crews will be prohibited from leaving construction equipment or other vehicle engines idling when not in use for more than 5 minutes. This measure would reduce the amount of CO and other pollutants, including ROG, NO_x, and PM₁₀, emitted in engine exhaust. This measure will be included as a condition of the construction contract and will be enforced through weekly inspection.

Impact Air-2: Increase in CO Emissions on the Project Islands during Project Operation

Appendix C, Tables C-7 and C-8 show CO emissions during operation of Alternative 2 assuming that water is pumped onto and out of the island reservoirs using diesel powered pumps. The tables show that compared to future no-project conditions, Alternative 2 would increase CO emissions by 6,666 ppd, or by 1,427 tpy. As described in the 2001 FEIR and 2001 FEIS, because the Project area is a CO attainment area under state and federal standards, this impact is considered less than significant.

Mitigation Measure

No mitigation is required.

Ozone Precursor Emissions

This section summarizes the Project's ROG and NO_x emissions for Alternative 2.

Impact Air-3: Increase in ROG Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 2 would generate 188 ppd and 23.5 tpy of ROG. These emissions are less than the conformity thresholds of 50 tpy. Although these emission estimates are slightly less than in the 2001 FEIR and 2001 FEIS, ROG emissions would exceed the SJVAPCD's annual threshold of 10 tpy. This is considered a significant and unavoidable impact. Implementation of the following mitigation measures will reduce this impact, but not to a less-than-significant level.

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Rec-MM-1: Reduce the Size or Number of Recreation Facilities

The Project will reduce the total number or size of recreation facilities proposed by removing all 22 facilities proposed for construction on Bacon Island and Webb Tract, and reducing the number or size of proposed facilities on Bouldin Island and Holland Tract by 70%. This would reduce ROG emissions attributable to Project construction of recreation facilities, but would not reduce all construction-related ROG emissions to a less-than-significant level.

Impact Air-4: Increase in ROG Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 2's net increase in operational ROG emissions would be 410 and 77 tpy. These emissions exceed the conformity threshold of 50 tpy applicable in the SJVAB and exceed the 80 ppd BAAQMD ROG threshold and the 10 tpy SJVAPCD ROG threshold. Therefore, this impact is considered significant. Implementing Mitigation Measures REC-MM-1 and AIR-MM-4 would reduce this impact to a less-than-significant level (as shown in Appendix C, Tables C-9 and C-10).

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

The Project will reduce the total number or size of recreation facilities proposed by removing all 22 facilities proposed for construction on Bacon Island and Webb Tract, and reducing the number or size of proposed facilities on Bouldin Island and Holland Tract by 70%. This would reduce the number of permanent docking spaces provided by the recreation facilities from 2,508 to 330 slips. This reduction is sufficient to reduce emissions while still providing for viable recreation. The reduction in the number of boating-related vehicle trips and reduction in boat use would reduce projected emissions from automobile and

boat engines. Therefore, the increase in ROG emissions attributable to Project operations would be reduced to a less-than-significant level.

Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions

The Project will coordinate with the SJVAPCD and the BAAQMD to implement measures to reduce or offset ROG and NO_x emissions of the Project operations. These measures may include implementing a voluntary emission reduction agreement (VERA). The SJVAPCD has encouraged use of a VERA as a means to reduce emissions from CEQA projects.

Mitigation Measure Air-MM-5: Use Electrically Powered Pumps in Lieu of Diesel Powered Pumps

In the event that Mitigation Measure Air-MM-4 is not sufficient to reduce emissions to less than significant, electrically powered pumps will be used in lieu of diesel-powered pumps, which would reduce the increase in operational NO_x emissions to less than the daily and annual significance thresholds.

Impact Air-5: Increase in NO_x Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 2 would generate 1,538 ppd and 192.3 tpy of NO_x. These emissions exceed the conformity threshold of 50 tpy. Although these estimates are slightly less than in the 2001 FEIR and 2001 FEIS, NO_x emissions would also exceed the SJVAPCD's annual threshold of 10 tpy. This is considered a significant and unavoidable impact. Implementation of the following mitigation measures will reduce this impact, but not to a less-than-significant level

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines

This mitigation measure is described above, under Impact AIR-1.

Impact Air-6: Increase in NO_x Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 2's net increase in operational NO_x emissions would be 1,042 ppd and 78 tpy. These emissions exceed the BAAQMD and SJVAPCD thresholds. Therefore, this impact is considered significant. Implementation of Mitigation Measure Rec-MM-1 would reduce Project operation NO_x emissions from recreational boating. When combined with Air-MM-4 or AIR-MM-5, this mitigation would reduce the impacts of Project operations to a less-than-significant level (as shown in Appendix C, Tables C-9 and C-10).

Mitigation Measure Rec-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Impact AIR-1.

Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions

This mitigation measure is described above, under Impact AIR-4.

Mitigation Measure Air-MM-5: Use Electrically Powered Pumps in Lieu of Diesel Powered Pumps

This mitigation measure is described above, under Impact AIR-5. As shown in Appendix C, Tables C-9 and C-10, the use of electrically powered pumps, in combination with other mitigation, would result in a net decrease in operational NO_x emissions.

PM10 and PM2.5 Emissions

This section summarizes the PM10 and PM2.5 impacts resulting from construction and operation of Alternative 2. When the 2001 FEIR and 2001 FEIS was prepared, ambient standards had not yet been set for PM2.5. Since 2001, both state and federal ambient standards have been set for PM2.5 and the standards for PM10 have been tightened. Although state and federal ambient standards have now been established, neither the BAAQMD nor SJVAPCD have yet established PM2.5 significance thresholds. Consequently, the following evaluation uses the PM10 significance thresholds.

Impact Air-7: Increase in PM10 Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 2 would generate 746 ppd and 93.2 tpy of PM10. Both the SJVAPCD and the BAAQMD have stated that construction-related PM10 emissions are considered significant, but can be reduced to a less-than-significant level with implementation of appropriate mitigation measures. Although the Project's emissions are less than the conformity thresholds of 100 tpy, this is considered a significant impact that can be reduced to a less-than-significant level with implementation of the following group of measures developed by the SJVAPCD and the BAAQMD.

Mitigation Measure Air-MM-6: Implement Construction Practices that Reduce Generation of Particulate Matter

Construction crews will be required to implement the following measures throughout the construction period to reduce generation of particulate matter in the vicinity of construction sites:

- Pave, apply water three times daily, or apply soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Use appropriate dust control measures, including effective application of water or presoaking, during land preparation and excavation.

- Cover or water all soil transported offsite to prevent excessive dust release.
- Sprinkle all disturbed areas, including soil piles left for more than 2 days, onsite unpaved roads, and offsite unpaved access roads, with water to sufficiently control windblown dust and dirt.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Hydroseed or apply soil stabilizers to inactive construction area (previously graded areas inactive for ten days or more).
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install wind breaks or plant trees/vegetation wind breaks at windward side(s) of construction areas.
- Limit construction vehicle speeds to 15 mph on unpaved surfaces.
- Prohibit dust-producing construction activities when wind speeds reach or exceed 20 mph.
- All areas used for storage of construction vehicles, equipment, and materials will comply with the measures described above.
- Comply with all relevant components of the SJVAPCD's Regulation 8.

These measures will be included as a condition of the construction contract and will be enforced through weekly inspection by the Project proponent.

Impact Air-8: Increase in PM10 Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 2's net decrease in operational PM10 emissions would be 8,511 ppd. This decrease results because the drop in agricultural activity more than offsets the increase in Alternative 2's operational emissions. Due to the number and distribution of working days, the Alternative would result in a net increase of 1 tpy, but would not exceed the SJVPACD's threshold of 15 tpy. Therefore, this impact is considered less than significant.

Mitigation

No mitigation is required

Alternative 1

The only difference between Alternative 1 and Alternative 2 is the quantity and frequency of water diversions and discharges. Although pumping operations would be slightly different than Alternative 2, even with the slight difference in

pumping emissions, Alternative 1 would have nearly identical impacts to those discussed under Alternative 2.

Alternative 3

Under Alternative 3, the four Project islands would be used as reservoirs with limited compensation wetland habitat on Bouldin Island.

Carbon Monoxide Emissions

The impacts of Alternative 3 on air quality conditions are described below, along with any changes to the impacts identified in the 2001 FEIR and 2001 FEIS.

Appendix C, Tables C-7 through C-10 show detailed estimates of ROG, NO_x, CO, PM10, and PM2.5 for Alternative 3.

Impact Air-1: Increase in CO Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, Alternative 3 would increase CO emissions during construction by 2,220 ppd and 277.5 tpy. This represents a higher level of CO emissions than was estimated for the 2001 FEIR and 2001 FEIS, primarily because the construction activity levels are higher and more recent emission factors have been used for this analysis. However, as in the 2001 FEIR and 2001 FEIS, the Project's CO emissions are considered less than significant because the Project is in a CO attainment area under state and federal CO standards. Implementation of the four mitigation measures O-1 through O-3 identified in the 2001 FEIR and 2001 FEIS are not required for CO but would reduce the quantity of CO generated during construction.

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines

This mitigation measure is described above, under Alternative 2.

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Alternative 2.

Impact Air-2: Increase in CO Emissions on the Project Islands during Project Operation

Appendix C, Tables C-7 and C-8 show CO emissions during operation of Alternative 3 assuming that water is pumped onto and out of the island reservoirs used diesel-powered pumps. The tables show that Alternative 3 would increase CO emissions by 6,673 ppd, or by 1,489 tpy. This level of CO emissions is comparable to the operational CO emission estimates included in the 2001 FEIR and 2001 FEIS. And as described in the 2001 FEIR and 2001 FEIS, because the Project area is a CO attainment area under state and federal standards, this impact is considered less than significant.

Mitigation

No mitigation is required.

Ozone Precursor Emissions

This section summarizes the Project's ROG and NO_x emissions for Alternative 3.

Impact Air-3: Increase in ROG Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 3 would generate 514 ppd and 64.3 tpy of ROG. Although these estimates are slightly less than in the 2001 FEIR and 2001 FEIS, ROG emissions would still exceed the SJVAPCD's annual threshold of 10 tpy. In addition, ROG emissions would exceed the conformity thresholds of 50 tpy. This is considered a significant and unavoidable impact. Implementation of the following mitigation measures would reduce this impact, but not to a less-than-significant level.

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations**Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines**

This mitigation measure is described above, under Alternative 2.

Impact Air-4: Increase in ROG Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 3's net increase in operational ROG emissions would range be 344 ppd and from 81 tpy. This increase exceeds the 80 ppd BAAQMD ROG threshold and the 10 tpy SJVAPCD ROG threshold. The Project would also exceed the 50 tpy conformity threshold.

Therefore, this impact is considered significant. Implementation of the following measures would reduce this impact to a less-than-significant level.

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions

This mitigation measure is described above, under Alternative 2.

Impact Air-5: Increase in NO_x Emissions on the Project Islands during Construction.

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 3 would generate 4,302 ppd and 537.7 tpy of NO_x. This emission level would exceed the 50 tpy conformity threshold. Although these estimates are slightly less than in the 2001 FEIR and 2001 FEIS, NO_x emissions would still exceed the SJVAPCD's annual threshold of 10 tpy. This is considered a significant and unavoidable impact. Implementation of the following measures would reduce this impact, but not to a less-than-significant level.

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-1: Perform Routine Maintenance of Construction Equipment

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-2: Choose Borrow Sites Close to Fill Locations

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines

This mitigation measure is described above, under Alternative 2.

Impact Air-6: Increase in NO_x Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 3's net increase in operational NO_x emissions would range be 44 ppd and 99 tpy. These emissions would exceed the 80 ppd BAAQMD NO_x threshold and the 10 tpy SJVAPCD NO_x threshold. This is a significant impact. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure REC-MM-1: Reduce the Size or Number of Recreation Facilities

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions

This mitigation measure is described above, under Alternative 2.

Mitigation Measure Air-MM-5: Use Electrically Powered Pumps in Lieu of Diesel Powered Pumps

As shown in Appendix C, Tables C-9 and C-10, the use of electrically powered pumps, in combination with other mitigation, would result in a net decrease in operational NO_x emissions.

PM10 and PM2.5 Emissions

This section summarizes the PM10 and PM2.5 impacts resulting from construction and operation of Alternative 3. When the 2001 FEIR and 2001 FEIS was prepared, ambient standards had not yet been set for PM2.5. Since 2001, both state and federal ambient standards have been set for PM2.5 and the standards for PM10 have been tightened. Although state and federal ambient standards have now been established, neither the BAAQMD nor SJVAPCD have yet established PM2.5 significance thresholds. Consequently, the following evaluation uses significance thresholds of 10 tons PM10 per year and 80 pounds PM10 per day.

Impact Air-7: Increase in PM10 Emissions on the Project Islands during Construction

As shown in Appendix C, Tables C-7 and C-8, construction of Alternative 3 would generate 993 ppd and 124.2 tpy of PM10. This exceeds the 100 tpy conformity threshold. Both the SJVAPCD and the BAAQMD have stated that construction-related PM10 emissions are considered significant, but can be reduced to a less-than-significant level with implementation of appropriate mitigation measures. This is considered a significant impact. The following measures can be used to reduce impacts to a less-than-significant level.

Mitigation Measure Air-MM-6: Implement Construction Practices that Reduce Generation of Particulate Matter

This mitigation measure is described above, under Alternative 2.

Impact Air-8: Increase in PM10 Emissions on the Project Islands during Operation

As shown in Appendix C, Tables C-7 and C-8, Alternative 3's operational PM10 emissions would decrease PM10 by 9,234 ppd. This decrease results because the drop in agricultural activity more than offsets the increase in Alternative 3's operational emissions. Due to the number and distribution of working days, the Alternative would result in a net increase of 8 tpy, however would not exceed the SJVAPCD's threshold of 15 tpy. Therefore, this impact is considered less than significant.

Mitigation

No mitigation is required.

No-Project Alternative

Because the No-Project Alternative would not involve any construction, only operational impacts are discussed in this section. Operation of the No-Project Alternative in 2020 includes increases in agricultural activity and recreational uses compared to existing conditions. Appendix C, Tables C-3 and C-4 compare the agricultural and recreational use assumptions for existing conditions and future no-project (2020) conditions.

Carbon Monoxide Emissions

Increase in CO Emissions on the Project Islands

Appendix C, Tables C-7 and C-8 compare CO emissions for the No-Project Alternative to existing conditions. Under the No-Project Alternative, CO emissions would increase to 3,526 ppd and to 440 tpy. This increase is attributable to the increase in recreational and agricultural activities associated with the No-Project Alternative.

Ozone Precursor Emissions

Increase in ROG Emissions on the Project Islands

Appendix C, Tables C-7 and C-8 compare ROG emissions for the No-Project Alternative to existing conditions. Under the No-Project Alternative, ROG emissions would increase to 150 ppd and to 18.6 tpy. This increase is attributable to the increase in recreational and agricultural activities associated with the No-Project Alternative.

Increase in NO_x Emissions on the Project Islands

Appendix C, Tables C-7 and C-8 compare NO_x emissions for the No-Project Alternative to existing conditions. Under the No-Project Alternative, NO_x emissions would increase to 441 ppd and to 55 tpy. This increase is attributable to the increase in recreational and agricultural activities associated with the No-Project Alternative.

PM10 Emissions

Increase in PM10 Emissions on the Project Islands

Appendix C, Tables C-7 and C-8 compare PM10 emissions for the No-Project Alternative to existing conditions. Under the No-Project Alternative, PM10 emissions would increase to 6,836 ppd and to 22.4 tpy. This increase is attributable to the increase in recreational and agricultural activities associated with the No-Project Alternative.

PM2.5 Emissions

Increase in PM2.5 Emissions on the Project Islands

Appendix C, Tables C-7 and C-8 compare PM2.5 emissions for the No-Project Alternative to existing conditions. Under the No-Project Alternative, PM2.5 emissions would increase to 1,673 ppd and to 9 tpy. This increase is attributable to the increase in recreational and agricultural activities associated with the No-Project Alternative.