

## 4.3 AIR QUALITY AND GREENHOUSE GAS

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### 4.3.1 Introduction

This section presents background information on air quality, criteria air pollutants, and greenhouse gas (GHG) emissions, a summary of existing air quality and GHG conditions, and a summary of the regulatory framework that pertains to the project. The section then provides an assessment of potential air quality and GHG emissions and related impacts that may result from construction and operation of the Proposed Project. A discussion of cumulative impacts is provided at the end of the section. This section was prepared in close consultation with Illingworth & Rodkin who also conducted an air quality and greenhouse gas analysis of the Proposed Project that is provided in **Appendix E** (Illingworth & Rodkin Inc., 2014). The Monterey Bay Unified Air Pollution Control District (MBUAPCD or District) is the regional agency tasked with managing air quality in the region, which is overseen by the California Air Resources Board (CARB). The MBUAPCD has published CEQA Air Quality Guidelines that also are used in this assessment to evaluate air quality impacts of projects (Monterey Bay Unified Air Pollution Control District, 2008a).

Public and agency comments related to air quality and greenhouse gas emissions that were received during the public scoping period are summarized below.

The project must be in compliance with Federal Clean Air Act by providing air quality studies. If the project is in a non-attainment area, it must also provide a summary of estimated emissions for the project, and if the emissions are “above de minimis levels, but project is sized to meet the needs of the current population,” calculations should show how this increase was calculated.

The EIR should include a GHG emissions analysis that identifies thresholds, calculates emissions, determines significance, and identifies mitigation.

The project must demonstrate compliance with the Federal Clean Air Act conformity requirements.

To the extent that issues identified in public comments involve potentially significant effects on the environment according to CEQA and/or are raised by responsible agencies, they are identified and addressed within this EIR. For a complete list of public comments received during the public scoping period, refer to **Appendix A, Scoping Report**.

The project partners intend to apply for a federal Clean Water Act State Revolving Fund loan; therefore, the Proposed Project must comply with the Federal Clean Air Act. The North Central Coast Air Basin is considered attainment or unclassified for all federally-regulated criteria pollutants and is not subject to a maintenance plan with conformity requirements. Therefore, the Proposed Project would not be subject to General Conformity compliance under the Federal Clean Air Act. Compliance with the Federal Clean Air Act is discussed further in **Section 4.3.3, Regulatory Framework**.

## 4.3.2 Environmental Setting

### 4.3.2.1 Local Climate and Air Quality

The air quality in a given area depends on the sources of air pollution in the area, the transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Topography and meteorology greatly influence air quality. Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of air pollutants. Marine breezes from Monterey Bay dominate the climate within the Proposed Project portion of the air basin; westerly winds predominate in all seasons, but are strongest and most persistent during the spring and summer.

Air quality is typically described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards, which are described further below, represent the allowable pollutant concentrations designed to ensure that public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population.

The Proposed Project would be located in the North Central Coast Air Basin (Air Basin). The Air Basin covers an area of 5,159 square miles along the central coast of California and is generally bounded by the Monterey Bay to the west, the Santa Cruz Mountains to the northwest, the Diablo Range on the northeast, with the Santa Clara Valley between them. The southern part of the Santa Clara Valley extends into the northeastern tip of the Air Basin and transitions into the San Benito Valley, which runs northwest-southeast and is bounded on the west by the Gabilan Range. To the west of the Gabilan Range is the Salinas Valley, which extends from the City of Salinas at the northwest end to King City at the southeast end. The western edge of the Salinas Valley is formed by the Sierra de Salinas, which is also the eastern edge of the Carmel Valley. The Santa Lucia Range along the Pacific coast defines the western edge of the Carmel Valley.

The mountain ridges in the Air Basin restrict and channel summer onshore air currents. Hot temperatures in the inland valleys warm the ground and intensify onshore airflow during the afternoon and evening. In the fall, the surface winds weaken and the marine layer becomes shallow and eventually dissipates. The airflow is occasionally reversed, creating weak offshore winds.

A semi-permanent high-pressure cell in the eastern Pacific Ocean is the basic controlling factor in the climate of the Air Basin. In the summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific high-pressure cell (Pacific High), forming a stable temperature inversion of hot air over a cool coastal layer of air. The onshore air currents pass over cool ocean waters to

bring fog and relatively cool air into the coastal valleys. The warmer air aloft can inhibit vertical air movement.

The stationary air mass held in place by the Pacific High pressure cell can allow pollutants to build up over a period of days. These conditions also occur when north or east winds cause pollutant transport from the San Francisco Bay Area or the Central Valley into the Air Basin. In the winter, the Pacific High moves south and has a lesser influence on the Air Basin; wind flows southeasterly from the Salinas and San Benito Valleys, especially during the night and morning. Northwest winds are still dominant in winter, but easterly winds are more frequent in the winter than the summer. Air quality usually remains good in the winter and early spring due to the absence of deep, persistent regional subsidence inversions and the presence of occasional storms. Typically, year-round marine airflow allows coastal areas to maintain good air quality.

The Proposed Project area typically has average maximum and minimum winter (i.e., January) temperatures of 60 degrees Fahrenheit (°F) and 43 °F, respectively, while average summer (i.e., July) maximum and minimum temperatures are 68 °F and 52 °F, respectively. The warmest month is typically September, with an average maximum high of 72 °F. Because of the moderating marine influence, which decreases with distance from the ocean, monthly and annual temperature variations are greatest inland and smallest at the coast. The Proposed Project area is mostly along the coast with temperature variations that are relatively moderate. Precipitation in the Proposed Project area averages approximately 20 inches per year (Western Regional Climate Center, 2014).

#### 4.3.2.2 Criteria Air Pollutants and Ambient Air Quality Standards

Ambient air quality standards have been established at both the federal and state level. The Federal and California Clean Air Acts have established ambient air quality standards for common pollutants. The ambient air quality standards are intended to protect human health and welfare. National and state ambient air quality standards are shown in **Table 4.3-1, Ambient Air Quality Standards**.

The Federal Clean Air Act (FCAA) and its amendments establish the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for “criteria pollutants” that are regarded as the maximum levels of ambient (background) air pollutants considered to have an adequate margin of safety necessary to protect the public health and welfare. The criteria pollutants are ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur oxides (SO<sub>2</sub>), respirable particulate matter with a diameter less than 10 microns (PM<sub>10</sub>), fine particulate matter with a diameter less than 2.5 microns (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. The U.S. Environmental Protection Agency (EPA) Region IX office oversees compliance with the FCAA.

The California Air Resources Control Board (CARB), a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. Its responsibility lies with ensuring compliance with the California Clean Air Act (CCAA) and its amendments, as well as responding to the FCAA requirements and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions. CARB establishes the California Ambient Air Quality Standards – CAAQS, pursuant to the CCAA. These standards apply to the same criteria pollutants as the FCAA and also include sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The California Ambient Air Quality Standards are generally more stringent than the NAAQS. National and state ambient air quality standards are shown in **Table 4.3-1**.

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the MBUAPCD's attempt to reduce ozone levels. High ozone levels aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort. Particulate matter can be another problematic air pollutant. Elevated concentrations of PM<sub>10</sub> are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Table 4.3-1

**Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards (a)	
			Primary (b,c)	Secondary (b,d)
Ozone (O <sub>3</sub> )	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	—e	Same as primary
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	—
	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	—
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppmf (188 µg/m <sup>3</sup> )	—
Sulfur Dioxide (SO <sub>2</sub> )	Annual	—	—g	—
	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	—g	—
	3-hour	—	—	0.5 ppm (1300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (655 µg/m <sup>3</sup> )	0.075 ppmg (196 µg/m <sup>3</sup> )	—
PM <sub>10</sub>	Annual	20 µg/m <sup>3</sup>	—	Same as primary
	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as primary
PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup> h	
	24-hour	No Separate State Standard	35 µg/m <sup>3</sup>	
Lead	Calendar quarter	—	1.5 µg/m <sup>3</sup>	Same as primary
	30-day average	1.5 µg/m <sup>3</sup>	—	—

Notes: ppm = parts per million  
µg/m<sup>3</sup> = micrograms per cubic meter  
mg/m<sup>3</sup> = milligrams per cubic meter

(a) California standards for ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles), are not to be exceeded. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard.

Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation Plan is approved by the EPA.

Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The national 1-hour ozone standard was revoked by EPA on June 15, 2005. A new 8-hour standard was established in May 2008.

The form of the 1-hour NO<sub>2</sub> standard is the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration.

On June 2, 2010, the EPA established a new 1-hour SO<sub>2</sub> standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum. The EPA also revoked both the existing 24-hour and annual average SO<sub>2</sub> standards.

On December 14, 2012, the EPA strengthened the annual NAAQS for PM<sub>2.5</sub> to 12.0 µg/m<sup>3</sup>

### 4.3.2.3 Existing Air Quality and Basin Attainment Status

MBUAPCD operates a regional monitoring network that measures the ambient air quality in the Air Basin. Ambient air quality is monitored at nine stations within the Air Basin. Existing levels of air pollutants in the Proposed Project area can generally be inferred from ambient air quality measurements conducted by MBUAPCD at its closest station, the Salinas #3 monitoring station, located in the City of Salinas, east of East Laurel Drive and south of Constitution Boulevard. The Salinas #3 monitoring station measures concentrations of ozone, respirable particulate matter equal to or less than 10 microns (PM<sub>10</sub>), fine particulate matter less than 2.5 microns (PM<sub>2.5</sub>), carbon monoxide (CO), and nitrogen dioxide (NO<sub>2</sub>). **Table 4.3-2**, shows a three-year (2010-2012) summary of monitoring data collected at the Salinas #3 monitoring station.

The Air District's "Triennial Plan Revision" (Monterey Bay Unified Air Pollution Control District, 2013b) updates the District's adopted 2008 Air Quality Management Plan (Monterey Bay Unified Air Pollution Control District, 2008b). The primary elements from the 2008 AQMP that were updated in the 2013 revision include the air quality trends analysis, emission inventory, and mobile source programs. According to this report, data monitored in the most populated area of the Air Basin, Salinas, show that although the area currently does not meet state standards for ozone, the number of days per year in exceedance of ozone standards has been decreasing, and the region is on course to meet these standards in the future. The Triennial Plan Revision identifies a continued trend of declining ozone emissions in the Air Basin primarily related to lower vehicle miles traveled. Overall, based on monitoring data for 2009-2011, there were fewer exceedance days in the time period 2009-2011 compared to 2006-2008. Therefore, the control measures presented in the 2008 AQMP have not been implemented as the MBUAPCD determined progress was continuing to be made toward attaining the 8-hour ozone standard during the three-year period reviewed (2009-2011) (Monterey Bay Unified Air Pollution Control District, 2013b).

**Table 4.3-2**

**Highest Measured Air Pollutant Concentrations in Salinas (Monitoring Station #3)**

Pollutant	Average Time	Highest Measured Air Pollutant Levels		
		2010	2011	2012
Ozone (O <sub>3</sub> )	1-Hour	0.07 ppm	0.07 ppm	0.07 ppm
	8-Hour	0.06 ppm	0.06 ppm	0.06 ppm
Carbon Monoxide (CO)	8-Hour	0.76 ppm	0.99 ppm	1.39 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	1-Hour	0.04 ppm	0.04 ppm	0.04 ppm
Respirable Particulate Matter (PM <sub>10</sub> )	24-Hour	39 µg/m <sup>3</sup>	19 µg/m <sup>3</sup>	ND
	Annual	14.8µg/m <sup>3</sup>	4.9 µg/m <sup>3</sup>	ND
Fine Particulate Matter (PM <sub>2.5</sub> )	24-Hour	9.8 µg/m <sup>3</sup>	15.1 µg/m <sup>3</sup>	9.1 µg/m <sup>3</sup>
	Annual	4.5 µg/m <sup>3</sup>	4.9 µg/m <sup>3</sup>	ND
Source: CARB, iADAM Air Quality Statistics, see <a href="http://www.arb.ca.gov/adam/">http://www.arb.ca.gov/adam/</a> . Note: ppm = parts per million and µg/m <sup>3</sup> = micrograms per cubic meter ND = No Data available.				

Areas with air quality that exceed federal or state air quality standards are designated as “nonattainment” areas for the relevant air pollutants. Designations are made for each criteria pollutant according to the categories listed below. Designations in relation to state standards are made by the CARB, while designations in relation to national standards are made by the EPA. State designations are updated annually, while the national designations are updated either when the standards change or when an area requests re-designation due to changes in air quality. Nonattainment designations are of most concern because they indicate that unhealthy levels of the pollutant exist in the area, which typically triggers a need to develop a plan to achieve the applicable standards (Monterey Bay Unified Air Pollution Control District, 2008b).

Attainment – Air quality in the area meets the standard.

Nonattainment – Air quality in the area fails to meet the applicable standard.

Unclassified – Insufficient data to designate area, or designations have yet to be made.

Attainment/Unclassified – An EPA designation which, in terms of planning implications, is essentially the same as Attainment.

The Air Basin as a whole is considered by the EPA as attainment or unclassified for all regulated criteria pollutants under the NAAQS. At the State level, the region is designated as nonattainment for ozone and PM<sub>10</sub>. The region is attainment for all other pollutants regulated under the CAAQS.

#### **4.3.2.4 Toxic Air Contaminants**

In addition to “criteria” air pollutants, there is another group of substances found in ambient air referred to as Toxic Air Contaminants (TACs). These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse acute and chronic health effects including cancer. Sources of TACs include industrial processes such as petroleum refining and manufacturing, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. One of the TACs of greatest concern in California is diesel particulate matter, which is classified as a carcinogen (causes cancer). TACs are regulated at the local, state, and federal level.

#### **4.3.2.5 Greenhouse Gases**

Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by humankind) atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide (Intergovernmental Panel on Climate Change, 2007). Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Solar radiation enters the earth’s atmosphere from space, and a portion of the radiation is absorbed at the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth’s surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect helps maintain a habitable climate. Emissions of GHGs from human activities, such as electricity production, motor vehicle use, and agriculture, are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the earth’s natural climate, known as global warming or global climate change. The term “global climate change” is often used interchangeably with the term “global warming,” but “global climate change” is preferred because it accurately includes other consequences to the global

climate in addition to rising temperatures. Other than water vapor, the primary GHGs contributing to global climate change include the following gases:

Carbon dioxide (CO<sub>2</sub>), primarily a byproduct of fuel combustion;

Nitrous oxide (N<sub>2</sub>O), a byproduct of fuel combustion; also associated with agricultural operations such as the fertilization of crops;

Methane (CH<sub>4</sub>), commonly created by off-gassing from agricultural practices (e.g. livestock), wastewater treatment and landfill operations;

Chlorofluorocarbons (CFCs) were used as refrigerants, propellants and cleaning solvents, but their production has been mostly prohibited by international treaty;

Hydrofluorocarbons (HFCs) are now widely used as a substitute for chlorofluorocarbons in refrigeration and cooling; and

Perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>) emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

More information about climate change and greenhouse gases can be found at the California Air Resources Board's Climate Change website: <http://www.arb.ca.gov/cc/cc.htm>.

### 4.3.3 Regulatory Framework

Federal, state, and regional agencies regulate air quality in the North Central Coast Air Basin. At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for overseeing implementation of the Federal Clean Air Act (FCAA). The California Air Resources Board (CARB) is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The primary agency that regulates air quality in the Proposed Project area is the MBUAPCD. The MBUAPCD has permit authority over stationary sources, acts as a reviewing agency for environmental documents, and develops regulations that must be consistent with or more stringent than, federal and state air quality laws and regulations.

#### 4.3.3.1 Federal

The Federal CAA requires CARB, based on air quality monitoring data, to designate portions of the state where the national ambient air quality standards are not met as "nonattainment areas." Because of the differences between the national and state ambient air quality standards, the designation of nonattainment areas is different under the federal and state legislation. Areas that meet the air quality standards are considered to be in attainment of the standards.

The EPA requires states that have areas that are not in compliance with the national ambient air quality standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan. Federal action required to approve or fund a project triggers the Federal Clean Air Act conformity requirements. As part of the State Implementation Plan, California has incorporated the federal General Conformity Rule. The EPA's Conformity Rule, as promulgated in 40 CFR Part 93 Subpart B, and 40 CFR Part 51, Subpart W, implements the conformity requirements of Section 176(c) of the 1990 Amendments to the Federal Clean Air Act. Conformity to the State Implementation Plan is defined in the CAA as

requiring all federal agencies to ensure that any federal agency activity conforms to an approved State Implementation Plan in nonattainment or maintenance areas. Compliance with the State Implementation Plan assists in eliminating or reducing the number of violations of the national ambient air quality standards, which expedites attainment of the standards. Because the Air Basin is considered attainment or unclassified for all federally-regulated criteria pollutants, the project would not be subject to General Conformity compliance. In addition, the area is not subject to a maintenance plan with conformity requirements.<sup>1</sup>

On April 17, 2009, the EPA Administrator signed Proposed Endangerment and Cause or Contribute Findings for GHGs under Section 202(a) of the Clean Air Act. EPA found that six GHGs taken in combination endanger both the public health and the public welfare of current and future generations. EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse effect and, under Section 202(a) of the Clean Air Act, result in air pollution that endangers public health and welfare. The specific GHG regulations EPA has adopted to date are as follows:

*Mandatory Reporting of Greenhouse Gases Rule (40 CFR Part 98).* This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) emissions per year (EPA 2009). Additionally, the reporting of emissions is required for owners of SF<sub>6</sub>- and PFC-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds.

*Proposed Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule (40 CFR Part 52).* EPA recently mandated that Prevention of Significant Deterioration requirements be applied to facilities that have stationary-source CO<sub>2</sub>e emissions exceeding 100,000 tons per year if they otherwise would not be subject to PSD requirements, and 75,000 tons per year if they otherwise would be subject to PSD requirements. On June 23, 2014, the United States Supreme Court struck down the requirement as to sources that would not otherwise be subject to PSD requirements. The Court upheld the EPA Greenhouse Gas Tailoring Rule as to sources otherwise subject to PSD requirements.

#### 4.3.3.2 State

The California Clean Air Act outlines a program for areas in the state to attain the California ambient air quality standards by the earliest practical date. The CARB oversees regional air district activities and regulates air quality at the State level. If an area does not meet the California ambient air quality standards, the CARB designates the area as a nonattainment area. The California Clean Air Act requires local air pollution control districts to prepare air quality attainment plans for pollutants, except for particulate matter, that are not in attainment with the state standards. These plans must provide for district-wide emission

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<sup>1</sup> The Phase 1 final rule to implement the 8-hour ozone standard was published on April 30, 2004. The anti-backsliding provisions in that rule set forth specific requirements for areas that are designated attainment for the 8-hour ozone standard and that were at the time of the 8-hour designations (generally June 15, 2004) either attainment areas with maintenance plans for the 1-hour standard, such as the Air Basin; or nonattainment for the 1-hour standard. Specifically, 40 CFR part 51, section 51.905(a)(3) and (4) requires these areas to submit a maintenance plan under section 110(a)(1) of the Clean Air Act. That maintenance plan must demonstrate maintenance for 10 years post designation; however, this maintenance plan does not carry with it any conformity obligations (unlike maintenance plans required under section 175A of the Act).



reductions of 5% per year averaged over consecutive three-year periods or if not, provide for adoption of “all feasible measures on an expeditious schedule.”

CARB has numerous rules and regulations that would affect the Proposed Project. For example, Title 13, Section 2485 of the California Code of Regulations (CCR) limits idling time of diesel powered equipment to 5 minutes. CARB adopted a regulation, Title 13, Section 2449 of the CCR, to reduce diesel particulate matter NOx emissions from in-use (existing) off-road heavy-duty diesel vehicles in California, which includes construction equipment. This regulation requires operators of construction fleets to replace or retrofit equipment as necessary to meet overall fleet emission requirements.

The CARB is the lead agency for implementing climate change regulations in the state. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California’s air pollution problems.

### **Assembly Bill (AB) 32 (2006), California Global Warming Solutions Act**

California’s major initiative for reducing GHG emissions was passed by the California State legislature in 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of carbon dioxide equivalent (CO<sub>2</sub>e). The CARB also projected future CO<sub>2</sub>e emissions in 2020 that would be expected to occur if no new regulations were adopted (business-as-usual 2020 emissions). The CARB determined that the AB 32 emissions target of 427 MMT requires the reduction of 169 MMT from the State’s projected business-as-usual 2020 emissions of 596 MMT. Following the law, CARB approved a Scoping Plan on December 11, 2008 that includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste (California Air Resources Board, 2008). The Scoping Plan must be updated every five years. CARB approved its Updated Scoping Plan in May 2014 (California Air Resources Board, 2014).

### **Senate Bill (SB) 375 (2008)**

SB 375, signed into law on October 1, 2008, enhances the CARB’s ability to reach AB 32 goals by developing regional GHG emissions reduction targets for the automobile and light truck sectors. The CARB is working with California’s 18 metropolitan planning organizations to align their regional transportation, housing, and land use plans and prepare a “Sustainable Communities Strategy” to reduce the number of vehicle miles and demonstrate the region’s ability to attain its greenhouse gas reduction targets.

#### **4.3.3.3 Regional and Local**

##### **Monterey Bay Unified Air Pollution Control District**

The MBUAPCD is the regional agency responsible for air quality regulation within the Air Basin. The MBUAPCD regulates air quality through its planning and review activities. The MBUAPCD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, impose emission limits, set fuel or material specifications, and establish operational limits to reduce air emissions. The MBUAPCD regulates new or expanding stationary sources of criteria pollutants and toxic air contaminants.

State law assigns local air districts the primary responsibility for control of air pollution from stationary sources, under CARB’s oversight. The MBUAPCD is responsible for developing regulations governing emissions of air pollution, permitting and inspecting stationary sources

of air pollution, monitoring of ambient air quality, and air quality planning activities, including implementation of transportation control measures.

The MBUAPCD does not regulate the emissions of dust and other construction emissions, except to require that each project's relevant CEQA document quantify the emissions of particulate matter and provide mitigation, if the relevant threshold of significance is exceeded.

### **Air Quality Management Plan for the Monterey Bay Region**

In 1991, the MBUAPCD adopted the *Air Quality Management Plan* for the Monterey Bay Region in response to the California Clean Air Act of 1988, which established specific planning requirements to meet the ozone standards. The California Clean Air Act requires that air quality management plans be updated every 3 years. The MBUAPCD has updated the air quality management plan five times. The most recent update, the Triennial Plan Revision 2009-2011 was adopted in 2013. The Triennial Plan Revision relies on a multilevel partnership of federal, State, regional, and local governmental agencies. These agencies, including EPA, CARB, local governments, Association of Monterey Bay Area Governments [AMBAG] and the MBUAPCD, are the primary agencies that implement the air quality management plan programs. The Triennial Plan revision documents the MBUAPCD's progress toward attaining the state 8-hour ozone standard, which is more stringent than the state 1-hour ozone standard. The Triennial Plan Revision builds on information developed in past air quality management plans and includes a review and update to the 2008 Air Quality Management Plan. The primary elements from the 2008 Air Quality Management Plan that were updated in the Triennial Plan Revision include the air quality trends analysis, emission inventory, and mobile source programs.

### **Rules for Stationary Sources**

The MBUAPCD regulates new and modified stationary sources through its Rule 207, which incorporates State and federal requirements for new and modified stationary sources as well as MBUAPCD-specific regulations. When net emissions from a new or modified facility exceed State offset thresholds, the increase must be offset by emissions reductions from an existing source, with certain exceptions. One type of source that is excepted from offset requirements is emergency internal combustion engines used during power outages or operated less than 60 hours per year for emergency pumping of water. The rule also requires application of Best Available Control Technology when a source would emit 25 pounds per day or more of reactive organic gases (ROG) or NO<sub>x</sub> emissions. Any proposed stationary diesel engines larger than 50 horsepower (hp) would be subject to the MBUAPCD's air toxic control measures, which require emission controls and limits on testing and maintenance. In addition, pursuant to Rule 1010, the MBUAPCD requires permits for all emergency standby engines. Rule 1010, Subsection 3.2.1.3.1, requires the following operating requirements and diesel particulate emission standards for new stationary emergency standby diesel engines over 50 hp (Monterey Bay Unified Air Pollution Control District, 2010):

Diesel particulate matter limit of less than 0.15 grams per brake horsepower-hour, or  
Off-road Engine Certification Standard for an off-road engine of the same hp rating; and  
Less than 50 hours per year for non-emergency operation.

## Wastewater Treatment Facilities Permits

District Rule 216, Permit Requirements for Wastewater and Sewage Treatment Facilities, requires that new or modified wastewater treatment facilities be consistent with the adopted air quality management plan. Consistency of wastewater treatment facilities with the air quality management plan is determined by comparing projected forecasts for the proposed service area with the applicable air quality management plan forecasts. AMBAG maintains forecasts for geographic areas as small as Traffic Analysis Zones which enables it to forecast population for service areas that differ from city and county boundaries and cross jurisdictional boundaries. District Rule 216 requires that affected projects also remain consistent with the plan. This is accomplished by requiring establishment of a system to track and report hook-ups for new or modified wastewater treatment facilities. Because the Proposed Project would not accommodate any new population growth and would not expand the wastewater treatments system to accommodate any new population growth, it would be consistent with the requirements of this rule.

## Plans and Policies Consistency Analysis

**Table 4.3-3, Applicable State, Regional, and Local Land Use Plans, and Policies - Air Quality and Greenhouse Gas** describes the state, regional, and local land use plans, policies, and regulations pertaining to air quality and greenhouse gas emissions that are relevant to the Proposed Project and that were adopted for the purpose of avoiding or mitigating an environmental effect. Also included in **Table 4.3-3** is an analysis of project consistency with these plans, policies, and regulations. In some cases, policies contain requirements that are included within enforceable regulations of the relevant jurisdiction. Where the analysis concludes the project would not conflict with the applicable plan, policy, or regulations, the finding and rationale are provided. Where the analysis concludes the project may conflict with the applicable plan, policy, or regulation, the reader is referred to **Section 4.3.4, Environmental Impacts and Mitigation Measures**, for additional discussion, including the relevant impact determination and mitigation measures.

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Table 4.3-3  
Applicable State, Regional, and Local Land Use Plans, and Policies - Air Quality and Greenhouse Gas

Project Planning Region	Applicable Plan	Plan Element/Section	Project Component	Specific Policy or Program	Project Consistency with Policies and Programs
Cities of Marina and Monterey (coastal zone)	California Coastal Act	Article 6, Development	Product Water Conveyance: Coastal Alignment; Monterey Pipeline	<b>Section 30253:</b> Minimization of adverse impacts. New development shall do all of the following: (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.	<b>Consistent with mitigation:</b> Proposed short-term construction activities in the cities of Marina and Monterey would result in emissions of fugitive dust that could exceed MBUAPCD's daily threshold for PM <sub>10</sub> . This issue is addressed by requiring mitigation measure AQ-1 whose implementation would avoid this potential inconsistency. Proposed Project emissions of diesel particulate matter would not exceed health-based thresholds or standards. Ozone precursor and criteria pollutant emissions from non-typical construction equipment would not exceed the MBUAPCD threshold for preventing ambient air quality standard exceedances and adverse health effects.
Monterey County	Monterey County General Plan	Conservation and Open Space	Reclamation Ditch Diversion Tembladero Slough Diversion Salinas Treatment Facility Blanco Drain Diversion Treatment Facilities at Regional Treatment Plant RUWAP Alignment Option Coastal Alignment Option	<b>Policy OS-10.6:</b> The Monterey Bay Unified Air Pollution Control District's air pollution control strategies, air quality monitoring, and enforcement activities shall be supported.	<b>Consistent with mitigation:</b> Proposed short-term construction activities in Monterey County would result in emissions of fugitive dust that could exceed MBUAPCD's daily threshold for PM <sub>10</sub> . This issue is addressed by requiring mitigation measure AQ-1 whose implementation would avoid this potential inconsistency. Proposed Project emissions of diesel particulate matter would not exceed health-based thresholds or standards. Ozone precursor and criteria pollutant emissions from non-typical construction equipment would not exceed the MBUAPCD threshold for preventing ambient air quality standard exceedances and adverse health effects.
Monterey County	Monterey County General Plan	Conservation and Open Space	Tembladero Slough Diversion Treatment Facilities RUWAP Alignment Option Coastal Alignment Option Reclamation Ditch Diversion Salinas Treatment Facility Blanco Drain Diversion	<b>Policy OS-10.7:</b> Use of the best available technology for reducing air pollution emissions shall be encouraged.	<b>Consistent:</b> New pumps used at Proposed Project facilities would be designed to reduce energy use and associated emissions. See Impacts AQ-5, AQ-7, and AQ-10 for discussion on the Proposed Project's less-than significant impact due to air pollution emissions.
Monterey County	Monterey County General Plan	Conservation and Open Space	Tembladero Slough Diversion Treatment Facilities RUWAP Alignment Option Coastal Alignment Option Reclamation Ditch Diversion Salinas Treatment Facility Blanco Drain Diversion	<b>Policy OS-10.8:</b> Air quality shall be protected from naturally occurring asbestos by requiring mitigation measures to control dust and emissions during construction, grading, quarrying, or surface mining operations. This policy shall not apply to Routine and Ongoing Agricultural Activities except as required by state and federal law.	<b>Consistent:</b> Short-term construction activities associated with project components proposed for Monterey County would result in the generation of fugitive dust emissions that could include naturally occurring asbestos. See Impact AQ-2, Construction-Related Emissions of Criteria Pollutants for a discussion of less-than significant impacts.
Monterey County	Monterey County General Plan	Conservation and Open Space	Tembladero Slough Diversion Treatment Facilities RUWAP Alignment Option Coastal Alignment Option Reclamation Ditch Diversion Salinas Treatment Facility Storage and Recovery Blanco Drain Diversion	<b>Policy OS-10.9:</b> The County of Monterey shall require that future development implement applicable Monterey Bay Unified Air Pollution Control District control measures. Applicants for discretionary projects shall work with the Monterey Bay Unified Air Pollution Control District to incorporate feasible measures that assure that health-based standards for diesel particulate emissions are met. The County of Monterey will require that future construction operate and implement MBUAPCD PM10 control measures to ensure that construction-related PM10 emissions do not exceed the MBUAPCD's daily threshold for PM10. The County shall implement MBUAPCD measures to address off-road mobile source and heavy duty equipment emissions as conditions of approval for future development to ensure that construction-related NOx emissions from non-typical construction equipment do not exceed the MBUAPCD's daily threshold for NOx.	<b>Consistent with mitigation:</b> Short-term construction activities in Monterey County that would be associated with the Proposed Project would result in the generation of fugitive dust emissions that could exceed MBUAPCD's daily threshold for PM <sub>10</sub> . This issue is addressed by requiring mitigation measure AQ-1 whose implementation would avoid this potential inconsistency. Proposed project-related emissions of diesel particulate matter would not exceed-health based standards and NO <sub>x</sub> emissions from non-typical construction equipment would not exceed the MBUAPCD's daily threshold for NO <sub>x</sub> .
City of Seaside	Seaside General Plan (and Municipal Code)	Safety Element	RUWAP Alignment Coastal Alignment Coastal Booster Pump Station Injection Well Facilities Transfer Pipeline Monterey Pipeline	<b>S-2.1:</b> Reduce the risks posed by air pollution. (See also implementing municipal code Section 8.40.030 Prohibited Discharges and 8.40.040 Nuisance Declared - Abatement)	<b>Consistent:</b> Construction and operations would result in emissions of criteria pollutants, but would not violate air quality standards, or contribute substantially to an air quality violation. See Impact AQ-1 and AQ-6.
City of Monterey	Monterey Harbor Land Use Plan	Development	Monterey Pipeline	<b>Section 30253:</b> Minimization of adverse impacts. New development shall do all of the following: (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development. Minimization of Adverse Impacts.	<b>Consistent with mitigation:</b> Construction would result in emissions of criteria pollutants, and may contribute substantially to an air quality violation. PM <sub>10</sub> emissions would be more than 82 pounds per average day, which would not exceed the MBUAPCD's threshold. Operations would result in criteria pollutants but would also not violate air quality standards, nor contribute substantially to an existing or projected air quality violation. Proposed project-related emissions of diesel particulate matter would not exceed-health based standards and NO <sub>x</sub> emissions from non-typical construction equipment would not exceed the MBUAPCD's daily threshold for NO <sub>x</sub> .

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## 4.3.4 Impacts and Mitigation Measures

### 4.3.4.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the project would have a significant air quality impact if it would:

- a. Conflict with or obstruct implementation of the applicable air quality plan;
- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- d. Expose sensitive receptors to substantial pollutant concentrations;
- e. Create objectionable odors affecting a substantial number of people;
- f. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- g. Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gas emissions.

The MBUAPCD provides guidance in assessing air quality impacts related to proposed projects. In 2008, MBUAPCD adopted new CEQA Air Quality Guidelines that included thresholds of significance to assist in the review of projects under CEQA. The significance thresholds, all of which except GHG emissions are adopted thresholds of the MBUAPCD and used in this analysis, are summarized in **Table 4.3-4, Air Quality Significance Thresholds**.

As of March 2015, MBUAPCD has not adopted significance thresholds for GHG emissions. In February 2013, MBUAPCD staff presented threshold options to the MBUAPCD Board and an analysis of the options evaluated. In February 2014, MBUAPCD staff proposed the following options for operational significance thresholds for land use projects: (1) a bright-line threshold of 2,000 metric tons CO<sub>2</sub>e per year, (2) incorporation of mitigation measures to reduce GHG emissions by 16%, or (3) compliance with an applicable adopted GHG reduction plan/climate action plan (Monterey Bay Unified Air Pollution Control District, 2014). There are no adopted GHG reduction plans or climate action plans that would apply to the Proposed Project; therefore the third option would not be applicable to the Proposed Project. A threshold of 10,000 metric tons CO<sub>2</sub>e per year was recommended for stationary source projects that are subject to MBUAPCD permitting requirements; however, the Proposed Project is not considered a stationary source project so this threshold would not be applicable to this analysis.

The evidence supporting the MBUAPCD staff recommendations in February 2013 and February 2014 is considered by MRWPCA to constitute substantial evidence. Based on the evidence provided by the MBUAPCD staff recommendation, this EIR first considers whether the Proposed Project's GHG emissions would be below 2,000 MT of CO<sub>2</sub>e per year including amortized construction emissions. If the Proposed Project's GHG emissions are determined to be above 2,000 MT of CO<sub>2</sub>e per year, this EIR would then consider whether GHG emissions have been reduced at least 16% below business as usual emissions due to alternative energy use and energy efficiency measures. If project GHG emissions are below 2,000 MT of CO<sub>2</sub>e per year, or if GHG emissions have been reduced at least 16% below business as usual emissions,

the project would be considered to have less-than-significant GHG emissions. A less-than-significant impact would mean that the Proposed Project would not make a cumulatively considerable contribution to the environmental effects related to emitting GHGs (i.e., climate change and the associated adverse effects of climate change).

**Table 4.3-4**  
**Air Quality Significance Thresholds**

Criteria Pollutant	Construction Thresholds	Operational Thresholds
	Maximum Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)
Criteria Air Pollutants		
Volatile organic compound (VOC) or Reactive Organic Gases (ROG)	Not applicable <sup>1</sup>	137
Nitrogen oxides (NOx)	Not applicable <sup>1</sup>	137
Carbon monoxide (CO)	Not applicable	5502
Particulate matter with aerodynamic diameter < 10 micrometers (PM10)	82 (on-site) <sup>2</sup>	82 (on-site) <sup>2</sup>
Sulfur dioxide (SO2)	Not applicable	150
Greenhouse Gas Emissions		
Quantified GHG Annual Emissions	2,000 metric tons of Co2eq per year or failure to reduce GHG emissions by 16% using alternative energy, energy efficiency, or other GHG reduction measures <sup>3</sup>	
Toxic Air Contaminants		
Increased cancer risk due to exposure to toxic air contaminants	Greater than one incident per 100,000 population	

<sup>1</sup> MBUAPCD applies the emission threshold of 137 pounds per day of ROG or NOx to construction activities that involve non-typical equipment (i.e., grinders, and portable equipment). The District specifies examples of typical equipment as scrapers, tractors, dozers, graders, loaders, and rollers (MBUAPCD, 2008; see page 5-3 at: [http://mbuapcd.org/pdf/CEQA\\_full%20%281%29.pdf](http://mbuapcd.org/pdf/CEQA_full%20%281%29.pdf)). For this project, well construction was the only construction activity assumed to use non-typical equipment not normally used in the District (e.g., drilling rigs).

<sup>2</sup> Emissions exceeding these thresholds are considered significant if dispersion modeling shows that the ambient air quality standard for that pollutant would be exceeded. Since air pollutant dispersion modeling was not conducted for this project, the emissions thresholds are used to judge the significance.

<sup>3</sup> See discussion above in Section 4.3.4.1. Based on the substantial evidence developed and presented by the MBUAPCD staff in February 2013 and 2014, MRWPCA, as lead agency for this EIR, has elected to use these thresholds to determine if the Proposed Project would make a considerable contribution to significant cumulative global climate change impacts. The Proposed Project would not have any direct, stationary sources of greenhouse gas emissions during operations.

#### 4.3.4.2 Impact Analysis Overview

##### Approach to Analysis

The primary source of air pollutant emissions associated with the Proposed Project would be construction activities for the various project components. The California Emissions Estimator Model, Version 2013.2.2 or CalEEMod (ENVIRON, 2013) is typically used to predict project construction, operational, and greenhouse gas emissions<sup>2</sup> for land use development projects.

<sup>2</sup> CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for lead agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operation from a variety of land use projects.



Since the GWR Project is not a typical land use project, use of CalEEMod was found to be inappropriate, because the model does not predict fugitive emissions from trenching/pipeline construction and well drilling. Therefore, the analysis in this EIR used a spreadsheet analysis using project-specific construction assumptions and applying the most appropriate published emissions factors for the different types of emission-generating activities. The different emission factors used in the analysis were specific to the proposed construction equipment, vehicle emissions (worker and truck trips), and fugitive dust from ground disturbances. For the purposes of this assessment, ROG were assumed to be equivalent for VOC in accordance with MBUAPCD guidance. Due to the low ambient concentrations of CO, SO<sub>2</sub>, and lead in the Air Basin and the low potential for these emissions from the Proposed Project, these emissions were considered to not have a significant impact during construction and operation of the project.

### *Construction Analysis*

Construction of the Proposed Project would generate emissions of criteria pollutants (ROG, NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>) that would result in short-term effects on ambient air quality in the air quality study area and GHGs (primarily CO<sub>2</sub> and CH<sub>4</sub>) that would add to the existing global GHG emissions that cause climate change. Emissions would originate from mobile and portable construction equipment exhaust, construction worker vehicle exhaust, dust from ground disturbances, and electrical transmission. Most of these emissions would be temporary (i.e., limited to the construction period) and would cease when construction activities are completed. The Proposed Project includes the construction of several project components at various locations lasting approximately 18 months, with some activities occurring concurrently. In addition, there would be three months at the end of the construction period for some painting, paving, testing and start-up activities, so the total construction period is assumed to take place over 21 months (including three months of testing and start-up). Assuming an average of 21 workdays per month, there would be 378 workdays of construction activity.

Construction equipment emissions were computed based on the quantity, types, size, and duration of equipment usage. A worksheet for each project construction component was developed that provided the type of equipment, quantity, size, load factor, number of days in use and average hours of usage. This inventory of construction activity was combined with the equipment emissions factors that are used in the CalEEMod Version 2013.2.2 model. These emissions factors are based on CARB's latest OFFROAD model that is used to develop statewide emissions inventories (by county) for various types of construction-type equipment. The emission factors were obtained from the CalEEMod technical appendix (see Appendix D of the CalEEMod User's Guide at [www.caleemod.com](http://www.caleemod.com)). Unless specifically known, the horsepower and load factor for each type of equipment was based on the statewide average used in CalEEMod. Construction equipment exhaust emissions were computed for each construction phase of each project component.

Emissions from construction-related vehicle traffic were computed using emission factors produced by CalEEMod. The CalEEMod emission factors are based on CARB's EMFAC2011 mobile emissions model. These factors were modeled in the spreadsheet to represent annual conditions in Monterey County. Emission factors, which were generated in terms of grams per mile and vehicle trip end emissions, were applied to projected vehicle travel activity for each project component. In the case of ROG, emission factors also included running losses that account for emissions from evaporating fuel and oil while the vehicle is operating. PM<sub>10</sub> and PM<sub>2.5</sub> emission factors also include those from brake and tire wear. Emission rates were developed for light-duty trucks (assumed to be worker trips), light-heavy heavy duty trucks (assumed to be vendor trips), and heavy-heavy duty truck trips assumed to be soil hauling, equipment delivery and cement truck trips. The average distances used by CalEEMod were

applied to these trips to estimate vehicle miles traveled. The vehicle activity in terms of trips and miles traveled for each project component were used with the CalEEMod mobile emission factors to generate emissions.

Emissions associated with ground disturbance were developed for area disturbance (e.g., grading and vehicle activity), trenching for pipeline construction, and vehicle travel on unpaved surfaces. These emissions were computed for the maximum daily projected activity. This maximum day was estimated to occur the peak month of overlapping construction (specifically, when the greatest number of sites involving earth moving activities were anticipated to be occurring simultaneously).

Area disturbance emissions are those from general ground disturbance at construction sites. This factor was developed by Midwest Research Institute based on an emission factor of 0.11 tons of PM<sub>10</sub> per acre of disturbance per day. (CARB, 2013) Since this emission factor assumed some level of construction area watering for dust management, the unmitigated emission factor was computed as twice that factor (i.e., watering was assumed to provide 50% control of emissions). This unmitigated area source emission factor was computed at 20 pounds of PM<sub>10</sub> emitted per disturbed acre per day.

Emissions for pipeline trenching were based on EPA's AP 42, Fifth Edition Compilation of Air Pollutant Emission Factors (EPA, 2006a). The emission factor is based on the amount of material moved (i.e., excavated and then replaced) in cubic yards, mean wind speed, and material moisture content. The amount of material moved was computed based on the length of pipeline that would be constructed in one day times the assumed width of 6 feet and depth of 6 feet. This amount was then doubled to assume soil would be moved twice, once to excavate, and then to either backfill or load in a truck to export. The wind speed was based on that used by CalEEMod of 7.1 miles per hour. While CalEEMod uses a soil moisture content of 7.9%, a drier moisture content of 2.5% was used since the equation was developed for a range of soil conditions from 0.25% to 4.8%. This is a conservative assumption, since soil excavated for pipeline construction is anticipated to be moist (i.e., probably greater than 4.8%) and drier soil would be more likely to become airborne.

Unpaved roadway travel emissions were computed assuming worker and truck travel at all sites of 0.1 miles. The traffic projections for the maximum daily activity construction period were used to compute daily vehicles miles traveled for worker and truck trips. Emission factors were based on the EPA's Unpaved Roadway Emission Factor that is based on silt content and vehicle weight (EPA, 2006b). The silt content of 6.9% used by CalEEMod was applied. The average assumed vehicle weight was 16.4 tons for trucks (i.e., 80% weigh 20 tons and 20% weigh 2 tons).

The construction schedule and equipment usage assumptions were provided by MRWPCA for each component. For detailed information on the construction schedule, see **Figure 2-40, Proposed Project Construction Schedule** in **Chapter 2, Project Description**. Construction equipment, disturbed ground surface area, duration, proposed new building square footage, and soil and demolition hauling volumes for each project component are provided in **Appendix E**. The emission factors used for the analysis, along with the construction emission analysis results, are also included in **Appendix E**.

### *Operational Analysis*

Operation of the Proposed Project would generate emissions of criteria pollutants (ROG, NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>) that would result in short-term effects on ambient air quality in the air quality study area and GHGs (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O) that would add to the existing global GHG emissions that cause climate change. Operational emissions would include vehicle trips

associated with commuting workers and truck deliveries and increased electrical demand of the Proposed Project facilities and changes to electricity demand due to modifications to existing facilities (such as the wastewater collection system pump stations and the existing Regional Treatment Plant facilities). There would be no new direct, stationary source emissions due to the Proposed Project; in the unlikely event that emergency back-up power supplies would be needed for the Advanced Water Treatment Facility or pump stations, the existing emergency generators owned by MRWPCA would be used and these are already tested by MRWPCA as part of treatment plant operations. Because the Proposed Project would not require continual (24 hour per day, 7 days per week) operation for environmental protection or public health and safety, new back-up power supplies are not proposed to be provided or used for the Proposed Project.

Mobile emission factors generated by CalEEMod for Monterey County in the year 2018 were applied to the projected operational vehicle activity. The Proposed Project is anticipated to generate, on average, 22 worker one-way trips per day. Worker trips are estimated to be 10 miles in length. There would be approximately 12 one-way heavy-duty truck trips per week, 52 weeks per year. These truck trips are estimated to be 25 miles in length.

GHG emissions from changes in electricity demand were computed based on electrical demand of the new and modified facilities and emission factors for electricity generation. Emissions rates associated with electricity consumption were based on Pacific Gas & Electric utilities (PG&E) projected 2018 CO<sub>2</sub> intensity rate (PG&E, 2013). These rates are based, in part, on the requirement of a renewable energy portfolio standard of 33% by the year 2020. The derived 2018 rate for PG&E was estimated at 328 pounds of CO<sub>2</sub> per megawatt of electricity delivered and is based on the California Public Utilities Commission (CPUC) GHG Calculator. Electricity demand for each component of the project was estimated. This included changes to electricity demand at each of the existing facilities whose use would be modified by the Proposed Project.

## Areas of No Impact

Some of the significance criteria outlined above (a and g) are not applicable to the Proposed Project, or the Proposed Project would not result in impacts related to these criteria, as explained below. The impact analyses related to the other criteria (b, c, d, e, and f) are addressed below under **subsections 4.3.4.4 (construction impacts), 4.3.4.5 (operational impacts) and 4.3.4.5 (cumulative impacts)**.

*(a) Conflict with or obstruct implementation of the applicable air quality plan.* Emissions during construction and operation associated with the Proposed Project could conflict with or obstruct implementation of the most recent Air Quality Management Plan (called the Triennial Plan Revision that was adopted in 2013) if emissions are not accounted for in the air quality management plan based on the following information:

- Pursuant to MBUAPCD policy, construction projects that use typical construction equipment such as dump trucks, scrapers, bulldozers, and front-end loaders that temporarily emit precursors of ozone (i.e., ROG and NO<sub>x</sub>), are already accounted for in the emission inventories of state- and federally-required air quality plans. In addition to typical construction equipment, the Proposed Project would also require some less common construction equipment such as cranes, jack-and-bore rigs, and other various augers and drill rigs. However, emissions associated with these equipment types would be minimal (see the discussion under Impact AQ-1, below). Overall, emissions generated during construction of the Proposed Project would be consistent with the Triennial Plan Revisions to the Air Quality Management Plan.

- The Proposed Project would not create any new operational stationary sources of emissions and indirect emissions from the Proposed Project would not conflict with any applicable air quality management plan because these emissions are accounted for within the air quality management plan according to MBUAPCD staff (Clymo, 2014).
- The Proposed Project would not result in population growth through development of new residential or commercial uses, and would not induce population growth due to a substantial increase in demand for new permanent employees or extension of roads or public services to unserved locations. Although the Proposed Project would provide a new source of drinking water; the drinking water provided by the Proposed Project would replace other existing sources that must be curtailed. Implementation of the Proposed Project would provide replacement water for CalAm's withdrawals from the Carmel River system, but would not provide new water to serve population growth. The Proposed Project also would provide additional recycled water for crop irrigation; however this also would not serve population growth. Therefore, the project would not induce population growth. For these reasons, the Proposed Project would not conflict with or obstruct implementation of the 2012 AQMP (Clymo, 2014).
- It is also noted that projects that include federal action located in areas that do not meet the NAAQS or areas that are subject to a NAAQS maintenance plan must not conflict with the federal State Implementation Plan. General Conformity is a process followed to determine if a federal action would conflict with the State Implementation Plan. However, the Air Basin meets all federal standards and is not subject to a maintenance plan; therefore, the General Conformity Rule would not apply to the Proposed Project and no further evaluation of this impact is provided.

### Summary of Impact Analysis

**Table 4.3-5, Summary of Impacts – Air Quality and Greenhouse Gas**, provides a summary of potential air quality and greenhouse gas impacts and significance determinations at each Proposed Project component site and the project overall.

Table 4.3-5

Impact Summary Table - Air Quality and Greenhouse Gas

Impact Title	Source Water Diversion and Storage Sites						Treatment Facilities at Regional Treatment Plant	Product Water Conveyance		Injection Well Facilities	CalAm Distribution Facilities		Project Overall
	Salinas Pump Station Diversion	Salinas Treatment Facility Storage and Recovery	Reclamation Ditch	Tembladero Slough	Blanco Drain (Pump Station and Pipeline)	Lake El Estero		RUWAP Alignment Option	Coastal Alignment Option		Transfer Pipeline	Monterey Pipeline	
AQ-1: Construction Criteria Pollutant Emissions	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LSM*
AQ-2: Construction Exposure of Sensitive Receptors to Pollutants	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-3: Construction Odors	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-4C: Construction Greenhouse Gas Emissions (Cumulative Impact)	LS: The Proposed Project construction would not make a considerable contribution to significant cumulative impacts due to greenhouse gas emissions and the related global climate change impacts.												
AQ-5: Operational Air Quality Violation	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-6: Operational Criteria Pollutant Emissions	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-7: Operational Exposure of Sensitive Receptors to Pollutants	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-8: Operational Odors	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
AQ-9C: Operational Greenhouse Gas Emissions (Cumulative Impact)	LS: The Proposed Project would not make a considerable contribution to significant cumulative impacts of greenhouse gas emissions and the related global climate change impacts.												
Cumulative Impact – Criteria Pollutant Emissions (PM <sub>10</sub> )	LSM: The Proposed Project would potentially make a considerable contribution to significant cumulative regional emissions of PM <sub>10</sub> ; however, with implementation of Mitigation Measure AQ-1, the impact would be reduced to less than significant.												
NI – No Impact LS – Less than Significant LSM – Less than Significant with Mitigation SU – Significant Unavoidable BI – Beneficial Impact													
* The implementaio of each component when looked at individually would not a have a significant impact; it is only when all components are implemented together (with overlapping construction schedules) that a significant impact would occur triggering Mitigation Measures to reduce to LS.													

#### 4.3.4.3 Construction Impacts and Mitigation Measures

**Impact AQ-1: Construction Criteria Pollutant Emissions.** Construction of the Proposed Project would result in emissions of criteria pollutants, specifically PM<sub>10</sub>, that may conflict with or obstruct implementation of the applicable air quality plan and may violate an air quality standard or contribute substantially to an existing or projected air quality violation in a region that is non-attainment under State ambient air quality standards. (Criteria a, b, and c) (Less-than-significant with Mitigation)

##### *All Project Components*

Carbon monoxide (CO) emissions from traffic generated by the Proposed Project would only be of concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) for years. As a result, the region has been designated as attainment/unclassified for the CO standards. There is an ambient air quality monitoring station in Salinas that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is 1.4 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. During construction, the Proposed Project would generate traffic throughout the Proposed Project vicinity, but the quantity of traffic generated by the Proposed Project would not affect these carbon monoxide levels near any roadways or intersections such that an air quality violation would not occur. Nor would a sensitive receptor be adversely effected. Therefore, the Proposed Project does not have the potential to cause a CO violation at affected intersections and this impact would be less than significant.

The Air Basin is considered a non-attainment area for the State Ambient Air Quality standards for ground-level ozone and particulate matter with a diameter of less than 10 micrometers (PM<sub>10</sub>). The area has attained both State and federal ambient air quality standards for carbon monoxide and federal standards for ozone and PM<sub>10</sub>. As part of an effort to attain and maintain ambient air quality standards for ozone and PM<sub>10</sub>, MBUAPCD has established thresholds of significance for air pollutant emissions.

Total emissions for construction of each Proposed Project component were computed on an annual basis for the calendar year in which construction of that component is expected to occur. Daily emissions were then compared against MBUAPCD thresholds. **Table 4.3-6, Construction Emissions by Project Component and Total (in tons)** provides a summary of the total criteria pollutant emissions from construction activities by Proposed Project component.

**Table 4.3-6**  
**Construction Emissions by Project Component and Total (in tons)**

Construction Component	Emissions (tons)			
	ROG	NOX	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Source Water Diversion and Storage Sites</b>				
Salinas Pump Station	0.17	1.27	0.09	0.08
Salinas Treatment Facility (on-site improvements)	0.10	0.73	0.05	0.05
Salinas Treatment Facility (slip-lining 33-inch pipeline)	0.39	3.06	0.21	0.20
Reclamation Ditch Diversion	0.09	0.67	0.05	0.05
Tembladero Slough Diversion	0.10	0.73	0.05	0.05
Blanco Drain Diversion Pump Station and Pipeline	0.18	1.42	0.09	0.09
Lake El Estero Diversion	0.01	0.07	<0.01	<0.01
<b>Treatment Facilities at the Regional Treatment Plant</b>				
AWT Facility/Salinas Valley Reclamation Plant modifications	0.76	6.31	0.38	0.35
<b>Product Water Conveyance System</b>				
Product Water Alignment: RUWAP and Booster Station	0.81	7.19	0.42	0.39
Product Water Alignment: Coastal and Booster Station	0.72	6.28	0.37	0.35
<b>Injection Well Facilities</b>				
Construction of Well Facilities	1.18	11.57	0.56	0.53
<b>Total</b>	<b>3.79</b>	<b>33.01</b>	<b>1.89</b>	<b>1.79</b>

A credible worst-case scenario was evaluated by modeling maximum emissions for the period with the highest construction emissions, when there would be the most earthmoving activities. These emissions would occur when concurrent activities include the following activities:

Site Preparation for Reclamation Ditch Diversion

Site Preparation for Tembladero Slough Diversion

Trenching/Pipeline Construction for Blanco Drain Diversion and Pipeline

Construction (grading, pipelines, building) for the Advanced Water Treatment Facility

Building Construction for the Salinas Valley Reclamation Plant Modification

Trenching/Pipeline Construction for Product Water Conveyance (RUWAP alignment)<sup>3</sup>

Building/Facility Construction for the AWT and Booster Pump Stations

Trenching/Pipeline and Building/Facility Construction for the Injection Well Facilities

<sup>3</sup> The Coastal alignment would result in less emissions on its worst-case day than the RUWAP alignment.

## Construction of the Vadose Wells

## Construction of the Monitoring Wells

## Trenching/Pipeline for the CalAm Distribution System: Monterey and Transfer Pipeline

The daily emissions associated with construction are reported in **Table 4.3-7, Estimated Daily Construction Emissions**, along with a comparison to the MBUAPCD significance thresholds. Emissions for PM<sub>10</sub> and PM<sub>2.5</sub> were computed for on-site activities that include fugitive dust from ground disturbance and construction equipment exhaust. Maximum daily emissions of on-site PM<sub>10</sub> were computed using a conservative estimate of construction activities for all sites (including the Monterey and Transfer Pipelines) that could be under construction at one time based on the Proposed Project construction schedule.

**Table 4.3-7****Estimated Daily Construction Emissions**

Scenario	Daily Emissions (lbs/day)			
	ROG	NOX	PM <sub>10</sub>	PM <sub>2.5</sub>
Average Daily (lbs/day)				
Average Daily Emissions (based on 378 construction days)	24	225	12	11
Maximum Daily (lbs/day)				
Maximum Daily Emissions (with RUWAP alignment)	66	547	28	24
Maximum Daily Exhaust Emissions for Well Sites	10	104	5	5
Maximum Daily On-Site Particulate Matter Emissions	--	-	145	41
MBUAPCD Thresholds	137*	137*	82	-
Exceed Threshold?	No	No	Yes	No

\* Applies to non-typical construction equipment (i.e., well site construction)

As shown in **Table 4.3-7**, maximum daily on-site construction PM<sub>10</sub> emissions were estimated to be 145 pounds per day, which would exceed the MBUAPCD's threshold of 82 pounds per day, and thus, would result in a potentially significant impact. On-site emissions of PM<sub>10</sub> would not exceed the thresholds at any individual site.

Estimated average and maximum daily emissions of other criteria pollutants (i.e., ROG, NOx, and PM<sub>2.5</sub>) due to the Proposed Project are also shown in **Table 4.3-7**. The North Central Coast Air Basin is designated as attainment for CO and PM<sub>2.5</sub> standards, but non-attainment for the state standards for ozone; therefore, ozone precursor emissions (i.e., ROG and NOx) are the criteria pollutants that must be addressed in environmental documents in the Air Basin. MBUAPCD has not identified construction significance criteria for ozone precursors because the emission inventories of State and federally-required air plans account for ROG and NOx emissions associated with typical construction equipment, such as graders, bulldozers, and loaders. According to MBUAPCD, temporary operation of typical construction equipment would not have a significant impact on the attainment and maintenance of ozone standards and thus, there is no significance threshold specific to emissions of ozone precursors from typical construction equipment.

Construction of the Proposed Project would include the use of non-typical construction equipment (i.e., cranes, jack-and-bore rigs, and other various augurs and drill rigs); therefore, maximum daily construction ROG and NOx emissions from these sources were compared to



the MBUAPCD's ROG and NO<sub>x</sub> operational significance thresholds of 137 pounds per day. These non-typical types of equipment would be used only during construction of the proposed wells at the Injection Well Facilities. As shown in **Table 4.3-7**, daily ROG and NO<sub>x</sub> emissions from well construction activities at the Injection Well Facilities site, which would also involve typical construction equipment in addition to non-typical augers and drills, would be less than the maximum daily emissions scenario. Thus, these emissions would be less than the MBUAPCD significance thresholds; therefore, it can be concluded that short-term emissions associated with construction of the Proposed Project would not contribute to an exceedance of a state or federal standard for ozone. Construction impacts due to the proposed use of non-typical construction equipment would be less than significant.

### ***Impact Conclusion***

The Proposed Project construction would not result in a significant impact due to regional emissions of ozone precursors. Maximum daily on-site construction PM<sub>10</sub> emissions were estimated to be 145 pounds per day, which would exceed the MBUAPCD's threshold of 82 pounds per day, and thus, would result in a potentially significant impact. On-site emissions of PM<sub>10</sub> would not exceed the thresholds at any individual site. With implementation of Mitigation Measure AQ-1 (Construction Fugitive Dust Control Plan), this impact would be reduced to a less-than-significant level. Implementation of this mitigation measure is anticipated to reduce on-site fugitive dust emissions by 65%. As a result, emissions of PM<sub>10</sub> would be reduced to 64 pounds per day. The mitigated emissions would be below the MBUAPCD emission thresholds for on-site PM<sub>10</sub> emissions. As a result, this mitigation measure would reduce the impact to a less-than-significant level.

### ***Mitigation Measure***

#### **Mitigation Measure AQ-1: Construction Fugitive Dust Control Plan. (Applies to all Project Component Sites where ground disturbance would occur.)**

The following standard Dust Control Measures shall be implemented during construction to help prevent potential nuisances to nearby receptors due to fugitive dust and to reduce contributions to exceedances of the state ambient air quality standards for PM<sub>10</sub>, in accordance with MBUAPCD's CEQA Guidelines.

- a. Water all active construction areas at least twice daily with water (preferably from non-potable sources); frequency should be based on the type of operation, soil, and wind exposure.
- b. Prohibit grading activities during periods of high wind (over 15 mph).
- c. Cover all trucks hauling soil, sand, and other loose materials and require trucks to maintain at least 2 feet of freeboard.
- d. Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- e. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- f. Enclose, cover, or water daily exposed stockpiles (dirt, sand, etc.);
- g. Replant vegetation in disturbed areas as quickly as possible.

- h. Wheel washers shall be installed and used by truck operators at the exits of the construction sites to the AWT Facility site, the Injection Well Facilities, and the Booster Pump Station.
- i. Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the MBUAPCD shall also be visible to ensure compliance with MBUAPCD rules.

Indirect impacts of this mitigation may include increased use of MRWPCA's recycled water for construction dust control that could otherwise be used for irrigation of cropland. See **Section 4.18, Water and Wastewater** for a discussion of this issue.

**Impact AQ-2. Construction Exposure of Sensitive Receptors to Pollutant Emissions. Construction of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. (Criterion d) (Less than Significant)**

Sensitive receptors are locations where an identifiable subset of the general population (such as children, asthmatics, the elderly, and the chronically ill) that are at greater risk than the general population may be exposed to the effects of air pollutants. These locations include residences, schools, playgrounds, childcare centers, retirement homes, hospitals, and medical clinics. **Table 4.3-8, Nearest Sensitive Receptors and Approximate Distances** summarizes the nearest sensitive receptors and approximate distances to each of the Proposed Project component sites.

**Table 4.3-8**  
**Nearest Sensitive Receptors and Approximate Distances**

Project Component	Type of Receptor	Distance from Project
<b>Source Water Diversion and Storage Sites</b>		
Salinas Pump Station	Farmhouse on Blanco Road	1,400 – 2,000 feet
Salinas Treatment Facility Storage and Recovery	Residences across Davis Road (southeast)	2,500 feet
Reclamation Ditch Diversion	Residences to the west and south	1,000 feet
Tembladero Slough Diversion	Residences to the north and east	740 feet and 850 feet, respectively
Blanco Drain Diversion	Residences northeast of the new pump station and southeast of the new pipeline	2,400 feet and 3,000 feet, respectively
Lake El Estero Diversion Facilities	Residences on Camino Aguajito	500 feet
Treatment Facilities at RTP	Farmhouse on Monte Road	One mile
<b>Product Water Conveyance</b>		
Booster Pump Station (RUWAP)	CSU Monterey housing	650 feet
	CSU Monterey classrooms	450 feet
	Residences (Non-CSU)	>1,000 feet
Booster Pump Station (Coastal)	Child development center	875 feet
	Residences (Non-CSU)	>1,000 feet
Product Water Conveyance Pipeline (RUWAP Alignment)	Residences (e.g., along Crescent Avenue, California Drive, General Jim Moore Boulevard)	≥25 feet
	Los Arboles Middle School	150 feet (playfields) 600 feet (school buildings)
	Seaside Middle School at the corner of General Jim Moore and Coe Ave	235 feet (playfields) 280 feet (school buildings)
Product Water Conveyance Pipeline (Coastal Alignment)	Residences (e.g., Del Monte Boulevard and Marina Drive)	50-100 feet
	Seaside Middle School at the corner of General Jim Moore and Coe Ave	235 feet (playfields) 280 feet (school buildings)
	Marina Del Mar Elementary School	100 feet (playfields) 350 (school buildings)
<b>Injection Well Facilities</b>	Residences to the west	500 feet or more
<b>CalAm Distribution System</b>	Residences (e.g., Del Monte Boulevard and Marina Drive) and Schools	50-100 feet

The Proposed Project would expose sensitive receptors to temporary emissions of toxic air contaminants while construction takes place in the vicinity of these receptors. The primary concern for nearby sensitive receptors would be exposure to diesel particulate matter emissions from diesel-powered construction equipment and diesel trucks associated with Project construction activities. Diesel particulate matter is classified as a toxic air contaminant by CARB for the cancer risk associated with long-term (i.e., 70 years) exposure. As shown in **Table 4.3-8**, the nearest receptors to non-pipeline work would be 450 feet or greater. While receptors would

be located as close as approximately 25 feet from pipeline work, pipeline construction in residential areas would progress at a rate of about 150 to 250 feet per day, thus limiting nearby receptors' exposure to diesel particulate matter to several days. Construction at the Booster Pump Station (RUWAP Alignment) would be within approximately 450 feet of CSU Monterey Bay classrooms. However, heavy equipment work at this site is anticipated to occur for a relatively short period of 2-3 months. At other Proposed Project component sites, receptors would be located at distances of 500 feet or greater.

Localized exposure to diesel particulate matter would be minimal for the following reasons:

Pipeline construction would occur for a limited amount of time within the vicinity of any single sensitive receptor;

Construction activities would be spread out over a large geographic area; and

Facility improvements and new facility sites with intensive construction equipment use (including some with over one year of construction) would be 450 feet or farther from any sensitive receptors.

The Bay Area Air Quality Management District, the adjacent air district immediately north of the jurisdiction of the MBUAPCD, developed screening tables for evaluating TAC impacts from construction projects (Bay Area Air Quality Management District, 2010). These screening tables conservatively identified significant TAC exposures for intensive construction of industrial projects of 4.6 acres (or 100,000 square feet) at distances as close as 578 feet. For projects of 2.8 acres (or 60,000 square feet) or smaller, the screening distance was estimated at 330 feet. These screening distances are based on continuous exposures to the most sensitive populations (i.e., residential infants). Since sensitive receptors that would experience continuous exposures of more than several days would not be located within these screening distances, construction activities are not anticipated to result in significant exposures of TACs to sensitive receptors.

Therefore, a significant cancer risk based on lifetime exposure would not occur due to Proposed Project construction. Specifically, the cancer risk from the Proposed Project-associated diesel emissions over a 70-year lifetime would be small and below significance thresholds (10 in one million). Therefore, the impacts related to diesel particulate matter exposure and construction health risk would be less than significant and no mitigation measures would be required.

**Impact AQ-3: Construction Odors. Construction of the Proposed Project would not create objectionable odors affecting a substantial number of people. (Criterion e) (Less than Significant)**

There may be intermittent odors from construction associated with diesel exhaust that could be noticeable at times to residences in close proximity. However, given the distance of receptors from most construction sites and the limited construction duration at any one location for pipeline installation, potential odors from construction equipment are not anticipated to result in odor complaints and would not affect a substantial number of people. Odor impacts during construction would be less than significant and no mitigation measures would be required.

**Impact AQ-4C: Construction Greenhouse Gas Emissions. Construction of the Proposed Project would generate greenhouse gas emissions, either directly or indirectly, but would not make a considerable contribution to significant cumulative impacts due to greenhouse gas emissions and the related global climate change impacts. (Criterion f) (Less than Significant)**

Construction GHG emissions in units of metric tons (MT) of carbon dioxide equivalent (CO<sub>2</sub>e) per year were estimated (see modeling worksheets included in **Appendix E**). Construction of the Proposed Project would result in a one-time emission total of up to 6,039 MT of CO<sub>2</sub>e during the 18 month construction period. The MBUAPCD does not have adopted nor recommended quantified thresholds for assessing the significance of GHG emissions during construction. MBUAPCD staff recommended including construction emissions within operational totals based on the 30-year amortization to provide a full analysis of construction and operational GHG emissions (Clymo, 2014). Accordingly, the total construction period emissions from the Proposed Project were amortized over a 30-year life and the resulting average annual emissions were added to the annual operational emissions and compared to the GHG significance threshold. The annual amortized GHG emissions are 201 MT/year. The combined impacts are addressed under Impact AQ-9C. As explained under Impact AQ-9C, the Proposed Project would not make a cumulatively considerable contribution to significant cumulative impacts associated with GHG emissions and the effects of climate change.

#### **4.3.4.4 Operation Impacts and Mitigation Measures**

**Impact AQ-5: Operational Air Quality Violation. Operation of the Proposed Project would result in criteria pollutant emissions, but would not violate air quality standards or contribute substantially to an existing or projected air quality violation. (Criterion b) (Less than Significant)**

Operation of the Proposed Project would generate small amounts of vehicular and truck traffic. The project is anticipated to generate, on average, 22 worker one-way trips per day. Worker trips are estimated to be 10 miles in length. There would be approximately 12 one-way heavy-duty truck trips per week, 52 weeks per year. These truck trips are estimated to be 25 miles in length. The Proposed Project would not require emergency back-up generators because the new facilities can be shut down during temporary power outages. The Proposed Project would not result in any new stationary sources of air pollutant emissions. The Proposed Project's operational traffic would result in emissions of criteria pollutants that would be less than the significance thresholds adopted by MBUAPCD for evaluating impacts to ozone and particulate matter, as discussed further in Impact AQ-6 below and summarized in **Table 4.3-8**. Therefore, the Proposed Project would not contribute considerably to existing or projected violations of air quality standards pertaining to particulate matter and ozone.

Congested intersections with a large volume of traffic have the greatest potential to cause high localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) for years. As a result, the region is designated as attainment/unclassified for the standard. There is an ambient air quality monitoring station in Salinas that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is 1.4 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. The small amount of project-related traffic would not substantially affect these carbon monoxide levels.

Therefore, the Proposed Project does not have the potential to cause a carbon monoxide violation at affected intersections.

The potential for air quality violations due to Proposed Project operations would be a less-than-significant impact and no mitigation measures would be required.

**Impact AQ-6: Operational Criteria Pollutant Emissions. Operation of the Proposed Project would result in a net increase of criteria pollutants in a region that is non-attainment under State ambient air quality standards, but the increase would not be cumulatively considerable. (Criterion c) (Less than Significant)**

The Proposed Project would not result in a new stationary source of emissions. Operational emissions due to maintenance truck trips and employee trips were calculated using CalEEMod. Future anticipated vehicle volumes provided by MRWPCA were used in the model. Default commute trip lengths were used. Emission calculations are included in **Appendix E. Table 4.3-9, Estimated Annual Operational Criteria Pollutant Emissions** summarizes estimated Proposed Project operational emissions. As shown in **Table 4.3-9**, operation of the Project would have a less-than-significant operational air emissions impact.

In the unlikely event of failure of all power supplies at the Regional Treatment Plant, there are provisions to hook up the existing primary and secondary treatment processes to mobile, stand-by diesel generators that are currently used at the RTP in emergencies and are permitted and tested regularly. However, these generators are not new generators and would be not be used for the new AWT Facility. The Proposed Project would not include any new fixed or stationary generators, nor increased testing of generators. No significant impact would occur due to emissions of criteria pollutants and therefore, no mitigation measures would be required.

**Table 4.3-9**

**Estimated Annual Operational Criteria Pollutant Emissions**

Project Emissions	Emissions (pounds per day)			
	ROG	NOX	PM10	PM2.5
Mobile (Truck and Employee)	<1	1.1	<1	<1
MBUAPCD Thresholds	137	137	82	-
Exceed Threshold?	No	No	No	No

**Impact AQ-7: Operational Exposure of Sensitive Receptors to Pollutants. Operation of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. (Criterion d) (Less than Significant)**

**Table 4.3-7**, (under AQ-3, above) summarizes the nearest sensitive receptors and approximate distances to each of the various Proposed Project components. Operation of the Proposed Project is not anticipated to result in emissions of TACs that could affect sensitive receptors. The Proposed Project would have no direct sources of operational TAC emissions, and vehicular and truck traffic generated by the project would be less than 30 new trips per day spread across the region. Health risks in terms of excess cancer risk or hazards would be less than significant and no mitigation measures would be required.

**Impact AQ-8: Operational Odors. Operation of the Proposed Project would not create objectionable odors affecting a substantial number of people. (Criterion e) (Less than Significant)**

The Proposed Project would include a new Advanced Water Treatment (AWT) Facility at the existing Regional Treatment Plant where treatment-related odors may already be produced.

However, the Proposed Project would add AWT Facility processes that are not anticipated to result in generation of any additional odors. The existing odors at the Regional Treatment Plant occur primarily in the head works and the initial part of the secondary treatment facilities. After trickling filter treatment, enough of the decomposable organic material has been removed to essentially eliminate the remaining odors. The AWT Facility process would begin after the full secondary treatment; accordingly, odors should not be present at the AWT Facility. One of the first treatment processes of the Proposed Project, ozone, would be expected to eliminate any remaining wastewater constituents with odors, if they should occur. The Proposed Project would not affect processes or control features at the Regional Treatment Plant that would affect odors generated by the plant. The Salinas Pump Station would divert new surface waters and wastewater to the Regional Treatment Plant. Currently, treatment chemicals are added to the wastewater stream at the Salinas Pump Station to reduce sulfides, thereby reducing the odor. The addition of this new supply of agricultural wash and surface waters would not result in strong odors. In addition, the closest receptors to the Salinas Pump Station are 1,400 feet or further. Frequent objectionable odors are not anticipated from the pump station and this is a less-than-significant impact. No significant odor impacts would be associated with the operation of the other Proposed Project facilities. No mitigation measures would be required for operational odor impacts.

**Impact AQ-9C: Operational Greenhouse Gas Emissions. Operation of the Proposed Project would generate greenhouse gas emissions, either directly or indirectly. These emissions would not exceed significance thresholds such that they would result in a considerable contribution to significant cumulative impacts of greenhouse gas emissions and the related global climate change impacts. In addition, the Proposed Project would not conflict with applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions. (Criteria f and g) (Less than Significant)**

Once installed, the Proposed Project facilities would require new maintenance and employee vehicle trips that would generate relatively small amounts of GHG emissions. The CalEEMod vehicle emission factors were used to estimate operational criteria pollutant emissions from vehicle trips associated with the Proposed Project. Mobile emissions from the Proposed Project would be associated with maintenance truck and employee vehicle trips. In addition, indirect GHG emissions from energy usage at the proposed facilities would occur. Anticipated electricity demand (mWh/year) was provided by the MRWPCA and used to calculate annual GHG emissions using emissions rates published for PG&E's projected 2018 (the first possible full year of Proposed Project operation) CO<sub>2</sub> intensity rate. This 2018 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33% by the year 2020.

The Proposed Project is anticipated to generate, on average, 22 worker one-way trips per day. Worker trips are estimated to be 10 miles in length. There would be approximately 12 one-way heavy-duty truck trips per week, 52 weeks per year. These truck trips are estimated to be 25 miles in length. This vehicle activity was applied to emission factors produced by CalEEMod for Monterey County in 2018.

The increase in project electricity demand, without incorporation of new energy-saving features, was computed as 14,489 mega-watt hours per year (mWh/year). This was considered as the "Business as Usual" emissions. The Proposed Project facilities would include numerous energy saving features in the design and operation that would reduce energy demand, which in turn would reduce GHG emissions. These include electricity production from cogeneration at the

Regional Treatment Plant. The cogeneration plant receives biogas from the anaerobic digesters and produces power using internal combustion engines that run on the biogas. Power from the cogeneration plant is used at the treatment plant. The cogeneration plant produces enough power to operate the secondary treatment process and also produces heat which is used in the digestion process. This is expected to reduce electricity demand of the Proposed Project by 2,726 mWh/year. The use of variable flow drivers (VFD motors) on AWT and product water pumps are estimated to reduce electricity demand by an additional 811 mWh/year. There are other features indirectly associated with the project that would reduce overall electricity demand and facility operating costs that were not included in this analysis. For example, the Salinas Valley Reclamation Plant obtains about half of its electricity from on-site solar panels that were constructed after the AB32 greenhouse gas emission reduction requirements went into effect. With incorporation of the Proposed Project's energy saving features, the net increase in electricity demand for the Proposed Project is estimated to be 10,952 mWh/year. Additional discussion about electricity demand is provided in **Section 4.7, Energy and Minerals**.

As described above under Impact AQ-4C, construction emissions of GHG were also included in the assessment. Total project-related construction GHG emissions of 6,039 MT were amortized over 30 years and that annual amount was added to the annual Proposed Project operational emissions.

**Table 4.3-10, Annual GHG Emissions from Operation (metric tons/year CO<sub>2</sub>)** summarizes computed annual GHG emissions due to operation of the Proposed Project. As shown in **Table 4.3-10**, annual GHG emissions would be below the project-specific GHG significance threshold of 2,000 MT CO<sub>2</sub>e per year (maximum of 1,900 MT/year). Therefore, the Proposed Project would not make a cumulatively considerable contribution to any significant global climate change impacts and, thus, would have a less-than-significant impact due to GHG emissions. No mitigation measures would be required to reduce GHG emissions; however, the Proposed Project would include energy efficient pumps and treatment processes, and would be required to comply with any applicable parts of the California Green Building Code that help to minimize GHG emissions.

**Table 4.3-10**

**Annual GHG Emissions from Operation (metric tons/year CO<sub>2</sub>)**

Project Component	Electricity Demand (mWh/year)	CO <sub>2</sub> e MT/yr
Total Construction Emissions (2016-2017) = 201 MT amortized over 30 years		
Total Net New Proposed Project Electricity Demand	10,952	1,642
Mobile Emissions	-	57
Total Net New Proposed Project GHG Emissions	-	1,900
Project-Specific Significance Threshold	2,000 MT/year or 16% below Business as Usual	
Exceed Threshold?	No	

There are no locally adopted Greenhouse Gas Emissions Reduction Plans. The State's AB 32 Scoping Plan includes strategies for transportation, energy, water and other sectors that may be applicable to the Proposed Project. In particular, the following Scoping Plan action items are relevant to the Proposed Project (California Air Resources Board, 2008, at page 66).

- **W-2 Water Recycling.** This measure proposes a requirement for development and implementation of water recycling plans by wastewater management agencies working with water supply agencies. This requirement would apply where the recycling of treated effluent is not maximized at wastewater treatment plants located in areas of imported water supply and where water recycling could require less



energy than current water sources. Implementation of water recycling plans would be prioritized for those plants that discharge to water bodies from which the wastewater cannot otherwise be easily recovered, such as the ocean and brackish water bodies.

- **W-3 Water System Energy Efficiency.** Consistent with the recommendations of the California Water Plan Update 2005 and the 2005 Integrated Energy Policy Report, this measure seeks to the magnitude and intensity of energy use in California's water systems through further implementation of energy efficiency measures such as more efficient pumps and wastewater treatment.
- **W-4 Reuse Urban Runoff.** GHG emission reductions can be achieved when any water supply or treatment process is replaced with an alternative supply or process that requires less energy. Capture or infiltration of urban stormwater to increase groundwater and/or stored supplies has the potential to achieve energy and emission reductions by reducing the need to obtain water from more energy intensive sources or processes

The Proposed Project would not conflict with provisions or implementation of the State Scoping Plan. In fact, the Proposed Project would increase the use of water recycling, thereby implementing Action Item W-2. The Proposed Project would also reuse urban runoff, thereby implementing Action Item W-4. The Proposed Project's use of new, efficient (variable frequency drive) pumps would result in compliance with Action Item W-3, because pumping of water to convey it from source, to treatment to injection to user would constitute the majority of electricity use of the Proposed Project. Therefore, the Proposed Project would not conflict with existing plans or regulations regarding reduction of greenhouse gas emissions.

#### 4.3.4.5 Cumulative Impacts and Mitigation Measures

##### Geographic Scope

For localized air quality effects (such as exposure of nearby sensitive receptors to emissions from construction activities, such as diesel vehicle and equipment exhaust), the geographic scope is the vicinity of the Proposed Project component sites.

The geographic scope for cumulative analysis of regional criteria pollutant air quality impacts is the air basin in which the facilities would be constructed and operated, and any downwind air basins that may be affected by emissions from the Proposed Project. In this case, due to the locations of the Proposed Project component sites and the predominantly west-northwest winds in the project region, the Proposed Project would not affect other air basins; therefore, only projects and plans applicable to the jurisdiction of the MBUAPCD (i.e., the North Central Coast Air Basin) would apply. Projects throughout this region could have adverse effects on the regional air quality and the same sensitive receptors within the region.

Because greenhouse gas (GHG) emissions affect global climate change, the evaluation of GHG emissions is inherently a cumulative impact analysis. The geographic scope for cumulative impact analysis of GHG emissions includes the North Central Coast Air Basin, as well as the State of California.

##### Localized, Combined Exposures to Air Pollutants

##### *Cumulative Projects Contributing to Localized Impacts*

Localized air pollutant emissions from cumulative projects may potentially impact sensitive receptors if intense construction activities (i.e., those activities with high air pollutant emissions)

from two or more construction projects would occur in close proximity to each other (i.e., within 1 mile). Certain projects listed in **Table 4.1-2, Project Considered for Cumulative Analysis** of the Draft EIR would be in close proximity to each other and to the Proposed Project, and some may be expected to be under construction during the same worst-case and overlapping construction periods. The exact sequence of other projects' construction are outside the control of the Proposed Project partners; but as currently envisioned, the construction periods would potentially overlap. Known overlapping construction projects are listed below:

- Monterey Peninsula Water Supply Project (MPWSP) with 6.4 mgd desalination plant (CalAm) (#1)
- The Dunes on Monterey Bay (Marina Community Partners) (#10)
- City of Salinas Solar Project (#34)

A figure showing the Proposed Project plus the MPWSP with 6.4 mgd Desalination Plant is provided in **Appendix Y**. Cumulative project locations are shown on **Figure 4.1-1, Cumulative Projects Location Map**.

### *Proposed Project Localized Air Pollutants Impacts*

**Table 4.3-5**, provides a summary of potential impacts related to air quality and greenhouse gas emissions and significance determinations at each GWR Proposed Project component site. As detailed in **Sections 4.3.4.3** and **4.3.4.4**, the following four impacts are relevant to the cumulative localized air pollutant analysis and the Proposed Project would have a less-than-significant impact related to all of them:

- AQ-2: Construction Exposure of Sensitive Receptors to Pollutants
- AQ-3: Construction Odors
- AQ-7: Operational Exposure of Sensitive Receptors to Pollutants
- AQ-8: Operational Odors

The discussion of localized cumulative impacts is organized to address the combined impacts of the Proposed Project plus the MPWSP, with the 6.4 mgd desalination plant, and then to address the overall combined impacts of the Proposed Project and all relevant projects identified on **Table 4.1-2** for the cumulative analysis:

- *Combined Impacts of Proposed Project Plus MPWSP (with 6.4 mgd Desalination Plant)* (referred to as the MPWSP Variant).<sup>4</sup> The CalAm MPWSP includes: a seawater intake system; a source water pipeline; a desalination plant and appurtenant facilities; desalinated water conveyance facilities, including pipelines, pump stations, a terminal reservoir; and an expanded ASR system, including two additional injection/extraction wells (ASR-5 and ASR-6 Wells), a new ASR Pump Station, and conveyance pipelines to convey between the well. The CalAm Distribution Pipelines (Transfer and Monterey) would be constructed for either the MPWSP or GWR project. The estimated construction schedule would be from June 2016 through March 2019 for the combined projects, during which

<sup>4</sup> The October 2012 Notice of Preparation of an EIR for the MPWSP describes an alternative to the MPWSP that would include a small desalination plant combined with the Proposed GWR Project (CPUC, 2012). Based on ongoing coordination with the CPUC's EIR consultants, this alternative is referenced as the "Variant" and includes a 6.4 mgd desalination plant that was proposed by CalAm in amended application materials, submitted in 2013 to the CPUC (CPUC 2013).

the construction schedules could overlap for approximately 18 months (mid-summer 2016 through December 2017). The cumulative impact analysis in this EIR anticipates that the Proposed Project could be combined with a version of the MPSWP that includes a 6.4 mgd desalination plant. Similarly, the MPSWP EIR is evaluating a “Variant” project that includes the proposed CalAm Facilities (with the 6.4 mgd desalination plant) and the Proposed Project. The impacts of the Variant are considered to be cumulative impacts in this EIR. The MPWSP with 6.4 mgd Desalination and the GWR Facilities that comprise the MPSWP Variant are shown in **Appendix Y**.

- *Overall Cumulative Projects:* This impact analysis is based on the list of cumulative projects provided on **Table 4.1-2**, (see **Section 4.1, Introduction**)
- The overall cumulative impacts analysis considers the degree to which all relevant past, present and probable future projects (including the MPSWP with the 6.4 mgd desalination plant) could result in impacts that combine with the impacts of the Proposed Project.

*Combined Impacts of Proposed Project Plus MPSWP (with 6.4 mgd Desalination Plant).* Construction of the MPSWP Transmission Main and the Proposed Project Product Water Conveyance (Coastal Alignment) could occur in close proximity, with overlapping schedules. However, construction of pipelines would not occur in any one location for a substantial period of time, and the combined construction activities would not be expected to result in significant cumulative impacts due to localized air pollutant exposures or odors. The MPWSP with 6.4 mgd desalination plant and the Proposed Project Treatment Facilities at the Regional Treatment Plant would not be located close enough to one another to result in significant combined impact from exposure of sensitive receptors to substantial pollutant emissions or odors from project operation. The combined impact of the MPSWP (with 6.4 mgd Desalination Plant) and the Proposed Project due to localized air pollutant exposures or odor impacts would be less than significant.

*Overall Cumulative Impacts.* Cumulative projects are shown on **Table 4.1-2** (see **Section 4.1**), and cumulative project locations are shown on **Figure 4.1-1**. The cumulative projects are cross-referenced (in parentheses) to the project number on **Table 4.1-2**. The overall cumulative impact analysis considers impacts of the proposed project along with the potential impacts of “related projects” or other projects that are reasonably foreseeable to take place near the Proposed Project. The Proposed Project would have less-than-significant impacts due to emissions impacts on nearby sensitive receptors. Other than the MPSWP with a 6.4 mgd desalination plant, the only other cumulative projects with construction schedules known to overlap with the Proposed Project are the City of Salinas Solar Project and the Dunes on Monterey Bay. The City of Salinas Solar Project would be constructed starting in 2015 and ending in 2016, which would not completely coincide with construction at the Salinas Pump Station Diversion site, which is planned to begin in the summer of 2016. Most of the construction using heavy equipment that would generate construction emissions would be completed at the Salinas Pump Station site before construction of the Proposed Project begins in this location; accordingly, the two projects would not result in significant cumulative impacts due to localized concentrations of pollutants or odors. The Dunes on Monterey Bay is being constructed adjacent to a segment of the Proposed Project’s Product Water Conveyance pipeline (RUWAP and Coastal Alignments). However, construction of pipelines would not occur in any one location for a substantial period of time (i.e., less than two weeks typically), and the combined construction activities would not be expected to result in significant cumulative impacts due to localized air pollutant exposures or odors. There would be no significant cumulative impacts due to localized air pollutant exposures or odors.

## Cumulative Regional, Criteria Air Pollutant Emissions

*Combined and Overall Contributions to Regional Air Pollutant Exceedances.* For regional criteria air pollutants, the cumulative analysis is based on review of consistency with the Air District's Air Quality Management Plan (AQMP), as well as prediction of emissions. Consistency determinations with the AQMP are used by the District to address a project's contribution to regional air quality (i.e., ozone levels). The MBUAPCD prepares air quality plans which address attainment of the State ozone AAQS and maintenance of federal AAQS. These plans accommodate growth by projecting growth in emissions based on different indicators. For example, population forecasts adopted by AMBAG are used to forecast population-related emissions. Through the planning process, emission growth is offset by basinwide controls on stationary, area, and transportation sources of air pollution (Monterey Bay Unified Air Pollution Control District, 2008a). In developing emission-based thresholds, MBUAPCD also considered the levels for which a project's individual contribution would be cumulatively considerable to the region. Since the Proposed Project would be consistent with the AQMP and Proposed Project emissions are not predicted to exceed the Air District's significance thresholds, the Proposed Project's incremental increase in emissions would not result in a cumulatively considerable contribution to existing or future regional air quality violations. The Proposed Project would not make a considerable contribution to any significant cumulative regional air quality impacts.

The region is in non-attainment for the state ambient air quality standard for PM<sub>10</sub>. Construction of one or more of these projects at one time could result in potentially significant PM<sub>10</sub> emissions if compared to the significance threshold. Therefore, this analysis assumes that construction of multiple projects would result in a potentially significant cumulative impact. The significance thresholds used in the project-level analysis above measures whether the project would make a cumulatively considerable contribution to a cumulatively significant impact. The analysis above regarding whether the Proposed Project would exceed the MBUAPCD emissions thresholds provides a measure of whether the project would considerably contribute to significant air quality cumulative impacts, including exceedances/violations of air quality standards, exposure of sensitive receptors to substantial pollutants, or conflicts with air quality management plans. If the threshold is not exceeded, then one should conclude that the project would not contribute to any violation, regardless of what additional PM<sub>10</sub> emissions these cumulative projects contribute.

Although the Proposed Project would exceed the PM<sub>10</sub> significance thresholds for construction emissions, implementation of Mitigation Measure AQ-1 would reduce the project's contribution to this potentially significant cumulative impact to a level that would not be cumulatively considerable (i.e., less than the MBUAPCD's threshold).

## Cumulative Greenhouse Gas Emissions

GHG emissions contribute to the environmental effect of global climate change. The impacts of cumulative projects worldwide have been acknowledged to result in significant cumulative impacts (rising sea levels, species extinction, increased hydrologic and climate changes resulting in greater numbers and more severe storms and droughts, increased and more severe human illnesses, etc.) The Proposed Project would not result in a cumulatively considerable contribution to GHG emissions and global climate change because the Proposed Project greenhouse gas emissions would be below the significance threshold as discussed above in the Impact AQ-9C analysis.

### *Cumulative Impact Conclusions*

As described under Impact AQ-4C (Construction Greenhouse Gas Emissions), the Proposed Project construction would not make a considerable contribution to significant cumulative impacts due to greenhouse gas emissions and the related global climate change impacts and this is a less than significant cumulative impact.

As described under Impact AQ-9C (Operational Greenhouse Gas Emissions), the Proposed Project (including operational plus amortized construction greenhouse gas emissions) would not make a considerable contribution to significant cumulative impacts of greenhouse gas emissions and the related global climate change impacts and this is a less than significant cumulative impact..

The Proposed Project would potentially make a considerable contribution to significant cumulative regional emissions of PM<sub>10</sub>; however, with implementation of Mitigation Measure AQ-1, the impact would be reduced to less than significant.

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