4.10 Air Quality

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This section evaluates the potential impacts on regional and local air quality that would result from construction and operation of the Monterey Peninsula Water Supply Project (MPWSP or proposed project). The analysis is based on estimates of project-related air pollutant emissions, review of existing air quality conditions in the region, and applicable air quality regulations and guidelines. Impacts specific to greenhouse gas (GHG) emissions and climate change are evaluated in Section 4.11, Greenhouse Gas Emissions.

Comments received on the April 2015 Draft EIR expressed concerns regarding the potential for the project to release naturally occurring asbestos during construction; however, there are no areas in the project area that are likely to contain naturally occurring asbestos (CDC, 2000); therefore, this issue is not addressed further in this EIR/EIS. Some commenters suggested that indirect emissions of criteria pollutants associated with electricity use should be quantified and evaluated. This issue is addressed in Section 4.10.5.2, under Impact 4.10-4. Some comments suggested that the operational emissions associated with the periodic excavation and mechanical cleaning of the subsurface slant wells should be quantified. Subsequent to the release of the April 2015 Draft EIR, the layout of project facilities at the CEMEX active mining area was modified such that the well heads, valves, and other slant well facilities are now aboveground and readily accessible for maintenance, thereby reducing the disturbance area associated with periodic maintenance. See Impact 4.10-4 for quantification of emissions associated with slant well maintenance. Comments pertaining to regulatory guidance on health risk assessments are addressed in Impact 4.10-3. Comments associated with construction-related $PM_{2.5}$, NO_2, and ROG emissions are addressed in Impact 4.10-3.

4.10.1 Setting/Affected Environment

The study area for impacts on air quality is the North Central Coast Air Basin (Air Basin). Air quality is a function of both the amount and location of pollutant emissions under the influence of meteorological conditions and topographic features that affect pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, the presence of sunlight, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, all of which affects air quality.

4.10.1.1 Regional Topography, Meteorology, and Climate

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 of this portion of the Air Basin; westerly winds predominate in all seasons, but are strongest and most persistent during the spring and summer.

The Air Basin covers 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 project area typically has average maximum and minimum winter (i.e., January) temperatures of 60 degrees Fahrenheit (ºF) and 43 ºF, respectively, while average summer (i.e., July) maximum and minimum temperatures are 68 ºF and 52 ºF, respectively. The warmest month is typically September, with an average maximum high of 72 ºF. 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 project area is mostly along the coast with temperature variations that are relatively moderate. Precipitation in the project area averages approximately 20 inches per year (WRCC, 2016).

The presence and intensity of sunlight is another important factor that affects air pollution. Typically, ozone is formed at higher temperatures. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases (ROGs) and nitrogen oxides (NO_x) react to form secondary photochemical pollutants, including ozone. Since temperatures in many of the Air Basin inland valleys are so much higher than near the coast, these inland areas are much more prone to photochemical air pollution.

4.10.1.2 Criteria Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants that are a threat to public health and welfare. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria (see Section 4.10.2, Regulatory Setting, below). Below are descriptions of criteria pollutants that are a concern in the study area.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide

Carbon monoxide (CO) is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen

reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Particulate Matter

Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain absorbed gases (e.g., chlorides or ammonium) that can pose a health risk. Particulates can also damage materials and reduce visibility.

Other Criteria Pollutants

Sulfur dioxide (SO_2) is produced through combustion of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM_{10} and $PM_{2.5}$) and can contribute to sulfuric acid formation in the atmosphere that could precipitate downwind as acid rain. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead.

4.10.1.3 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including Diesel Particulate Matter (DPM) emissions from diesel-fueled engines (CARB, 2011).

4.10.1.4 Valley Fever

Valley Fever is an infectious disease caused by the fungus *Coccidioides immitis*. Valley Fever is also known as San Joaquin Valley Fever, Desert Fever, or Cocci. Infection is caused by inhalation of *Coccidioides immitis* spores that have become airborne when dry, dusty soil or dirt is disturbed by natural processes such as wind or earthquakes, or by human induced ground disturbing activities such as construction, farming, etc. There are about 100,000 new cases of Valley Fever per year in the southwestern United States. Incidences of Valley Fever appear to be decreasing locally in Monterey County. Cases of Valley Fever in Monterey County between 2011 through 2013 ranged between 68 and 73 cases per year, which equaled rates of 16.0 to 17.3 cases per populations of 100,000. In 2014, cases of Valley Fever dropped substantially to 19 cases, which were equal to a rate of 4.5 per population of 100,000 (CDPH, 2015).

4.10.1.5 Existing Air Quality

Monterey Bay Unified Air Pollution Control District (MBUAPCD) operates a regional monitoring network that measures the ambient air quality in the Air Basin. Existing levels of air pollutants in the project area can generally be inferred from ambient air quality measurements conducted by MBUAPCD at its closest stations. The closest station is the Salinas #3 Monitoring Station located approximately 7 miles to the east of the MPWSP Desalination Plant site. The Salinas #3 Monitoring Station measures concentrations of ozone, $PM_{2.5}$, CO, and nitrogen dioxide (NO_2). The only monitoring station in the Air Basin that measures concentrations of PM_{10} is the Hollister-Fairview Road Monitoring Station, which is located approximately 24 miles to the east-northeast of the MPWSP Desalination Plant site. In addition, PM_{10} monitoring at the Hollister-Fairview Road Monitoring Station uses only federal reference or equivalent methods, so the data can only be compared to the federal standard.

Ambient concentrations of air pollutants in a given area are determined by the quantity of pollutants emitted by local sources in the area and the atmosphere's ability to transport and dilute such emissions. Areas located close together and exposed to similar wind conditions typically have similar background pollutant concentrations. **Table 4.10-1** shows a five-year (2011–2015) summary of monitoring data for $PM_{2.5}$, CO, and NO_2 collected at the Salinas #3 Monitoring Station, and PM_{10} collected at the Hollister-Fairview Road Monitoring Station. The data are compared with the applicable California Ambient Air Quality Standards (state standards) and National Ambient Air Quality Standards (federal standards). As indicated in the table, there were no recorded violations of the state or federal standards from 2011 through 2015.

4.10.1.6 Sensitive Receptors

For the purposes of air quality and public health, sensitive receptors are generally defined as land uses with population concentrations that would be particularly susceptible to disturbance from air pollutants associated with project construction and/or operation. Sensitive receptor land uses generally include schools, day care centers, hospitals, and residential areas. Some sensitive receptors are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emission sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality.

Many locations along the various proposed pipeline segments would be adjacent to sensitive receptors, including residences. However, pipeline segments would be installed in a linear sequence and would progress at a rate of 150 feet to 250 feet per day, which would limit the duration of exposure for any given receptor to construction-related pollutants. In addition to the proposed pipelines, the MPWSP would include several facilities such as the MPWSP Desalination Plant, the aquifer storage and recovery (ASR) injection/extraction wells (ASR-5 and ASR-6 Wells), Terminal Reservoir, Carmel Valley Pump Station, Main System-Hidden Hills

TABLE 4.10-1
AMBIENT AIR QUALITY MONITORING SUMMARY (2011–2015)

Pollutant*	Standard	Monitoring Data by Year				
		2011	2012	2013	2014	2015
Ozone						
Maximum 1-hour concentration (ppm)	0.09 ppm	0.07	0.07	0.07	0.07	0.07
Days over State Standard		0	0	0	0	0
Maximum 8-Hour Average (ppm)	0.070 ppm	0.057	0.055	0.062	0.062	0.062
Days over State Standard		0	0	0	0	0
Respirable Particulate Matter (PM_{10})						
Maximum 24-Hour Average (µg/m^3)	150 µg/m^3	23	105	98	48	66
Estimated Days over National Standard		0	0	0	0	0
Fine Particulate Matter ($PM_{2.5}$)						
Maximum 24-Hour Average (µg/m^3)	35 µg/m^3	20	16	20	20	23
Estimated Days over National Standard Exceedances/Samples[e]		0	0	0	0	0
State Annual Average (µg/m^3)	12 µg/m^3	6	6	7	5	5
Nitrogen Dioxide (NO_2)						
Maximum Hourly Average (ppm) Highest 24-hour average, µg/m^3[c]	0.18 ppm	0.04	0.04	0.04	0.04	0.03
Days over State Standard Exceedances/Samples[e]		0	0	0	0	0
Carbon Monoxide (CO)						
Maximum 8-Hour Average (ppm)	9.0 ppm	0.99	1.39	-	-	-
Days over State Standard		0	0	-	-	-

NOTES:

"-" indicates that data were not collected for the year and are not available; ppm = parts per million; µg/m^3 = micrograms per cubic meter. Emissions data for ozone, $PM_{2.5}$, NO_2, and CO were collected at the Salinas No. 3 Monitoring Station, and the emissions data for PM_{10} were collected at the Hollister-Fairview Road Monitoring Station.

SOURCE: CARB, 2016a.

Interconnection Improvements, and the Ryan Ranch-Bishop Interconnection Improvements. Several of the proposed facilities are located in close proximity to sensitive receptors. The following paragraphs provide summary descriptions of the sensitive receptors in the vicinity of the proposed project components.

Subsurface Slant Wells

The closest sensitive receptors to the proposed slant wells in the CEMEX active mining area are residences at the Marina Dunes RV Park on Dunes Drive located approximately 0.4 mile (2,100 feet) south-southeast of the southern-most slant well site, and residences on Drew Street located approximately 0.5 mile (2,600 feet) south-southeast of the southern-most slant well site.

Source Water Pipeline

The section of the proposed Source Water Pipeline located along Charles Benson Road and Del Monte Boulevard would be between 0.1 mile (600 feet) and approximately 0.2 mile (1,100 feet) south of a rural residence on Neponset Road.

MPWSP Desalination Plant

The closest sensitive receptors to the proposed MPWSP Desalination Plant site are the two rural residences on Neponset Road located approximately 0.4 mile (2,200 feet) and 0.75 mile (3,900 feet) west of the site, respectively. Residences off Monte Road on the north bank of the Salinas River, the second closest set of sensitive receptors, are approximately 0.95 mile (5,000 feet) from the MPWSP Desalination Plant site.

New Desalinated Water Pipeline

The new Desalinated Water Pipeline would pass within 0.1 mile (600 feet) to 0.2 mile (1,100 feet) of two residences on Neponset Road. The southern 0.65 mile (3,500 feet) of the new Desalinated Water Pipeline alignment would be within 100 feet of residences and within 0.25 mile (1,350 feet) of Miss Barbara's Child Care Center at 266 Beach Road and the Marina Children's Center at 261 Beach Road.

New Transmission Main

The northernmost 0.5 mile (2,650 feet) of the new Transmission Main is within 100 feet of residences in Marina. The Crescita Early Education Center/Marina Child Development Center at 3066 Lake Drive in Marina is within 0.25 mile (1,300 feet) of the new Transmission Main alignment. South of the Highway 1 overpass where the new Transmission Main parallels the west side of the highway, the pipeline is 500 feet or more from the nearest sensitive land uses. Along Lightfighter Drive, the new Transmission Main would pass within 200 feet of a baseball field at California State University, Monterey Bay. Along General Jim Moore Boulevard, the pipeline would pass within 250 of residences along 4th Army Road, within 150 feet of Marshall West Elementary School, within 100 feet of residences in the Fitch Park military housing area, and within 300 feet of Seaside Middle School.

ASR Pipelines

The ASR Conveyance Pipeline, ASR Recirculation Pipeline, and the ASR Pump-to-Waste Pipeline would be within 250 feet of Seaside Middle School, and within 50 to 100 feet of residences in the Fitch Park military housing area along Hatten Road and Ardennes Circle.

ASR-5 and ASR-6 Wells

The ASR-5 and ASR-6 Wells would each be within 50 feet of residences in the Fitch Park military housing area on Ardennes Circle.

Terminal Reservoir

The Terminal Reservoir site is approximately 1,400 feet from the nearest residence along Mescal Street.

Castroville Pipeline

The section of the proposed Castroville Pipeline along Charles Benson Road would be approximately 0.2 mile (1,100 feet) south of a residence on Neponset Road and a part of the pipeline in the Monterey TAMC right-of-ways would be approximately 250 feet from a residence along Neponset Road. On the east side of Salinas River, the Castroville Pipeline would pass adjacent to about a dozen residences. The pipeline would pass about 200 feet south of a residence along Nashua Road, approximately 300 west of a residence at Castroville Road, and would terminate approximately 700 feet southeast of residences in Cypress Court.

Carmel Valley Pump Station

Carmel Valley Pump Station would be within 150 of two residences along Rancho San Carlos Road.

Interconnections with Highway 68 Satellite Systems

The Ryan Ranch-Bishop Interconnection Improvements would be located in a business park area with few sensitive receptors, with the exception of the Ryan Ranch Children's Center and York School, both of which are located approximately 0.2 mile (1,000 feet) from the proposed improvements.

The proposed Main System-Hidden Hills Interconnection Improvements are located in a residential neighborhood, with residences located as close as 50 feet to the proposed pipeline route.

4.10.2 Regulatory Framework

This section provides an overview of federal, state, and local environmental laws, policies, plans, and regulations relevant to air quality. A brief summary of each is provided, along with a finding regarding the proposed project's consistency with those regulatory requirements. The consistency findings concern the proposed project, without mitigation. Where the project, as proposed, would be consistent with the applicable regulatory requirement, no further discussion of project consistency with that regulatory requirement is provided. Where the project, as proposed, would be potentially inconsistent with the applicable regulatory requirement, the reader is referred to a specific impact discussion in Section 4.10.4, Direct and Indirect Effects of the Proposed Project, below, where the potential inconsistency is discussed in more detail. Where applicable, the discussion in Section 4.10.4 identifies feasible mitigation that would resolve or minimize the potential inconsistency.

Federal, state, and regional regulations provide the framework for analyzing and controlling air pollutant emissions and thus general air quality. The United States Environmental Protection

Agency (USEPA) is responsible for implementing the programs established under the federal Clean Air Act, such as establishing and reviewing the federal ambient air quality standards and reviewing State Implementation Plans (SIPs), described further below. However, the USEPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

In California, the California Air Resources Board (CARB) is responsible for establishing and reviewing the state ambient air quality standards, developing and managing the California SIP, securing approval of this plan from the USEPA, and identifying TACs. CARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level. The MBUAPCD is the regional agency primarily responsible for regulating stationary emission sources at facilities within its geographic area (i.e., Monterey, Santa Cruz, and San Benito counties) and for preparing the air quality plans that are required under the federal Clean Air Act and the 1988 California Clean Air Act.

4.10.2.1 Federal and State Regulations

The federal Clean Air Act Amendments of 1977 established federal ambient air quality standards, and individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there are considerable differences between some of the state and federal standards. As shown in **Table 4.10-2**, the state standards tend to be at least as protective as federal standards, and are often more stringent.

Federal ambient air quality standards (federal standards) exist for seven criteria air pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. In addition, California has established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The ambient air quality standards are intended to protect public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, referred to as sensitive receptors, including people with asthma, the very young, elderly, people weak from other illness or disease, or people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above the ambient air quality standards before adverse health effects are observed.

Federal Clean Air Act

The 1977 Clean Air Act (last amended in 1990; Title 42 United States Code Section 7401 et seq.) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled to achieve all standards within the deadlines specified in the Clean Air Act.

TABLE 4.10-2
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR NORTH CENTRAL COAST AIR BASIN

Pollutant	Averaging Time	State Standards		Federal Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hour	0.070 ppm	N-T	0.070 ppm	U*
	1 Hour	0.09 ppm	N-T	N/A	N/A
Carbon Monoxide	8 Hour	9.0 ppm	U	9 ppm	U
Nitrogen Dioxide	Annual Average	0.030 ppm	A	0.053 ppm	U
	1 Hour	0.18 ppm	A	0.100 ppm	U
Sulfur Dioxide	24 Hour	0.04 ppm	A	N/A	N/A
	3 Hour	N/A	N/A	0.5 µg/m^3	A
	1 Hour	0.25 ppm	A	0.075 ppm	A
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N	N/A	N/A
	24 Hour	50 µg/m^3	N	150 µg/m^3	U
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	A	12.0 µg/m^3	U
	24 Hour	N/A	N/A	35 µg/m^3	U
Sulfates	24 Hour	25 µg/m^3	A	N/A	N/A
Lead	30-Day Average	1.5 µg/m^3	A	N/A	N/A
	3-Month Rolling Average	N/A	N/A	0.15 µg/m^3	U
Hydrogen Sulfide	1 Hour	0.03 ppm	U	N/A	N/A
Vinyl Chloride	24 Hour	0.01 ppm	U	N/A	N/A
Visibility Reducing Particles	8 Hour	Extinction of 0.23/km; visibility of 10 miles or more	U	N/A	N/A

NOTES: A = attainment; N = nonattainment; N-T = nonattainment-transitional; U = unclassified but attainment can be assumed; N/A = not applicable or no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter.

* On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. Attainment status is relative to the previous 0.075 ppm standard. USEPA will make recommendations on attainment designations for 2015 standard by October 1, 2016, and issue final designations October 1, 2017.

SOURCES: CARB, 2015 and CARB, 2016b

The USEPA is responsible for implementing programs developed under the federal Clean Air Act, such as establishing and reviewing the federal standards for CO, ozone, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The federal Clean Air Act also requires the USEPA to designate areas (counties or air basins) as attainment or non-attainment with respect to each criteria pollutant, depending on whether the area meets the federal standards. If an area is designated as non-attainment, it does

not meet a federal standard and is required to create and maintain a SIP for achieving compliance with the applicable federal standard. Conformity to the SIP is defined under the 1990 Clean Air Act amendments as conformity with the plan's purpose in eliminating or reducing the severity and number of violations of the federal standards and achieving expeditious attainment of these standards.

The Clean Air Act General Conformity Rule helps states improve air quality in areas that do not attain the federal standards by ensuring that federal actions conform to the SIP. The MPWSP is not subject to the General Conformity Rule because it would be located in an area that meets federal standards and the area is not subject to a maintenance plan with conformity requirements.[1]

California Clean Air Act

The California Clean Air Act was approved in 1988 and requires each local air district in the state to prepare an air quality plan to achieve compliance with the state standards. CARB is the agency delegated responsibility for preparing and submitting the SIP to the USEPA. CARB also oversees air quality policies in California and has established state standards for NO_2, CO, PM_{10}, $PM_{2.5}$, SO_2, ozone, lead, sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Similar to the USEPA, CARB designates counties or air basins in California as attainment or non-attainment with respect to the state standards.

Regulations for Mobile Sources of Air Pollutants

The following air quality regulations apply to mobile sources and are directly relevant to the project. On road vehicles with a gross vehicular weight rating of 10,000 pounds or greater shall not idle for longer than 5 minutes at any location (Title 13 California Code of Regulations (CCR) Section 2485). This restriction does not apply when vehicles remain motionless during traffic or when vehicles are queuing. Off-road equipment engines shall not idle for longer than 5 minutes (Title 13 CCR Section 2449(d)(3). Exceptions to this rule include: idling when queuing; idling to verify that the vehicle is in safe operating condition; idling for testing, servicing, repairing or diagnostic purposes; idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); and idling required to bring the machine to operating temperature as specified by the manufacturer.

Attainment Status

Under amendments to the federal Clean Air Act, USEPA has classified air basins or portions thereof as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the federal standards have been achieved. The California Clean Air Act, which is

[1] 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).

patterned after the federal Clean Air Act, also requires areas to be designated as "attainment" or "non-attainment" for the state standards. Thus, areas in California have two sets of attainment/ non-attainment designations: one set with respect to the federal standards and one set with respect to the state standards. **Table 4.10-2** shows the attainment status of the Air Basin with respect to the federal and state ambient air quality standards for different criteria pollutants. As indicated in the table, the Air Basin is designated as attainment for all federal standards and is designated non-attainment for ozone and PM_{10} under the state standards.

California Coastal Act

The California Coastal Act (Public Resources Code Section 30000 et seq.) provides for the long-term management of lands within California's coastal zone boundary. Of primary relevance to air quality is a Coastal Act policy requiring that new development be consistent with applicable air pollution control district or the State Air Resources Board requirements. A preliminary assessment of project consistency with this priority is provided here. Final determinations regarding project consistency are reserved for the Coastal Commission. The MPWSP subsurface slant wells would use electricity from PG&E's electrical power grid; therefore, these facilities would not be subject to air district or State requirements. As such, the project would be consistent with Coastal Act policies related to air quality.

4.10.2.2 Regional Agencies and Regulations

Monterey Bay Unified Air Pollution Control District

The MBUAPCD is the regional agency responsible for air quality regulation within the North Central Coast Air Basin (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 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 (MBUAPCD, 2008).

Air Quality Management Plan for the Monterey Bay Region

In 1991, the MBUAPCD adopted the *Air Quality Management Plan for the Monterey Bay Region* (AQMP) 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 AQMPs be updated every 3 years. The MBUAPCD has updated the AQMP five times. The most recent update, the *Triennial Plan Revision 2009-2011* (2012 AQMP), was adopted in 2013 (MBUAPCD, 2013). The 2012 AQMP relies on a multilevel partnership of federal, State, regional, and local governmental agencies. These agencies (USEPA, CARB, local governments,

Association of Monterey Bay Area Governments [AMBAG]), and the MBUAPCD are the primary agencies that implement the AQMP programs. The 2012 AQMP 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 2012 AQMP builds on information developed in past AQMPs and includes a review and update to the 2008 AQMP. The primary elements from the 2008 AQMP that were updated in the 2012 revision include the air quality trends analysis, emission inventory, and mobile source programs. The MPWSP would be potentially inconsistent with the 2012 AQMP because it would contribute to a temporary exceedance of an ozone ambient air quality standard. This issue is addressed in Impact 4.10-1.

Stationary emission sources continue to be the smallest portion of both the ROG and NO_x emissions inventories. Mobile sources are the main contributor to ROG and NO_x emissions in the region. The 2012 AQMP identifies a continued trend of declining ozone emissions in the Air Basin primarily related to lower vehicle miles traveled. 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 because the MBUAPCD determined progress was continuing to be made toward attaining the 8-hour ozone standard (MBUAPCD, 2013).

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 (i.e., 10 tons per year for any criteria pollutant), the increase must be offset from an existing source, with certain exceptions, such as emergency internal combustion engines used during power outages or operated less than 60 hours per year for emergency pumping of water. Rule 207 also requires application of Best Available Control Technology when a source would emit 25 pounds per day or more of ROG or NO_x emissions. All proposed stationary diesel engines 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 horsepower (hp) (MBUAPCD, 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.

Permits to operate each of the proposed emergency generators would be secured by CalAm from MBUAPCD. Therefore, the MPWSP would be consistent with MBUAPCD Rules 207 and 1010.

4.10.2.3 Applicable Land Use Plans, Policies, and Regulations

Table 4.10-3 presents the regional and local land use plans, policies, and regulations pertaining to air quality relevant to the MPWSP that were adopted for the purpose of avoiding or mitigating an environmental effect and indicates project consistency with such plans, policies, and regulations. Where the analysis concludes the proposed project would not conflict with the applicable plan, policy, or regulation, the finding is noted and no further discussion is provided. Where the analysis concludes the project would be potentially inconsistent with the applicable plan, policy, or regulation, the reader is referred to the specific impact in Section 4.10.5, Direct and Indirect Effects of the Project (Proposed Action). In that subsection, the significance of the potential conflict is evaluated. Where the effect of the potential conflict would be significant, feasible mitigation is identified to resolve or minimize that conflict.

TABLE 4.10-3
APPLICABLE REGIONAL AND LOCAL LAND USE PLANS AND POLICIES RELEVANT TO AIR QUALITY

Project Planning Region	Applicable Plan	Plan Element/ Section	Project Component(s)	Specific Plan, Policy, or Ordinance	Relationship to Avoiding or Mitigating a Significant Environmental Impact	Project Consistency with Plan, Policy, or Ordinance
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Conservation and Open Space	Source Water Pipeline, MPWSP Desalination Plant, new Desalinated Water Pipeline, Brine Discharge Pipeline, Pipeline to CSIP Pond, Castroville Pipeline, Carmel Valley Pump Station, Main System–Hidden Hills Interconnection Improvements, and Ryan Ranch–Bishop Interconnection Improvements	***Policy OS-10.6:*** The Monterey Bay Unified Air Pollution Control District's air pollution control strategies, air quality monitoring, and enforcement activities shall be supported.	This policy is intended to protect and enhance Monterey County's air quality.	Potentially Inconsistent: Construction activities in unincorporated Monterey County would generate emissions in the air basin that could conflict with implementation of the applicable air quality plan. This is addressed in Impact 4.10-1.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Conservation and Open Space		***Policy OS-10.8:*** 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.	This policy is intended to protect and enhance Monterey County's air quality with respect to naturally occurring asbestos.	Consistent: The components of the MPWSP are not proposed in areas that are likely to contain naturally occurring asbestos.
County of Monterey (coastal zone and inland areas)	Monterey County General Plan	Conservation and Open Space		***Policy OS-10.9:*** 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 PM_{10} control measures to ensure that construction-related PM_{10} emissions do not exceed the MBUAPCD's daily threshold for PM_{10}. 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 NO_x emissions from non-typical construction equipment do not exceed the MBUAPCD's daily threshold for NO_x.	This policy is intended to protect and enhance Monterey County's air quality with respect to criteria pollutants.	Consistent: Pursuant to Rule 1010, Subsection 3.2.1.3.1, emergency generators would be required to follow operating requirements and diesel particulate emission standards for new stationary emergency standby diesel engines over 50 hp (see Section 4.10.2.2). Construction-related PM_{10} emissions would be mitigated to ensure that emissions would not exceed the MBUAPCD's daily threshold for PM_{10}. Although NO_x emissions from all construction equipment would exceed the MBUAPCD's significance threshold, it is unlikely that emissions from only non-typical construction equipment would exceed the MBUAPCD's daily threshold for NO_x.
City of Seaside (coastal zone and inland areas)	Seaside Municipal Code	Chapter 8.40 Air Pollution	New Transmission Main, ASR Conveyance Pipeline, ASR Pump-to-Waste Pipeline, ASR Recirculation Pipeline, Terminal Reservoir	***Section 8.40.030 Prohibited Discharges.*** A. No person shall discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is: 1. As dark or darker in shade as that designated as No. 2 on the Ringlemann Chart, as published by the United States Bureau of Mines; or 2. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subdivision 1 of this subsection. B. No person shall discharge into the atmosphere from any single source particulate matter in excess of 0.4 grains per cubic foot of gas at a gas temperature of sixty degrees Fahrenheit and a gas pressure of 14.7 pounds per square inch absolute. C. No person shall discharge into the atmosphere from any single source of emission whatsoever sulfur compounds exceeding 0.2 percent by volume calculated as sulfur dioxide (SO_2) at the point of discharge.	This section is intended to protect the people of the city from undesirable air contaminants.	Potentially Inconsistent: Short-term construction activities in the city of Seaside would generate fugitive dust emissions that could conflict with this municipal code. This issue is addressed in Impact 4.10-1, which identifies mitigation measures that would minimize or avoid this potential inconsistency.
City of Seaside (coastal zone and inland areas)	Seaside Municipal Code	Chapter 8.40 Air Pollution	New Transmission Main, ASR Conveyance Pipeline, ASR Recirculation Pipeline, ASR Pump-to-Waste Pipeline, and Terminal Reservoir	***Section 8.40.040: Nuisance declared – Abatement.*** No person shall discharge from any source whatsoever such quantities of air contaminants or other material as will: A. Cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or B. Endanger the comfort, repose, health, or safety of any such persons or public; or C. Cause or have a natural tendency to cause injury or damage to business or property. Such discharge is declared to be a public nuisance and shall be abated.	This section is intended to protect the people of the city from undesirable air contaminants.	Potentially Inconsistent: Short-term construction activities in the city of Seaside would generate fugitive dust and fuel exhaust emissions that could conflict with this municipal code. This issue is addressed in Impact 4.10-1, which identifies mitigation measures that would minimize or avoid this potential inconsistency.

SOURCE: Monterey County, 2010.

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4.10.3 Evaluation Criteria

Implementation of the proposed project would have a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 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);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

This EIR/EIS relies on the significance criteria established by MBUAPCD to assess the impacts of the proposed project on air quality. Because the MBUAPCD is a responsible agency under CEQA, the criteria pollutant thresholds and analytical guidelines developed by the MBUAPCD are framed in the context of CEQA; however, given that the MPWSP is not subject to the federal General Conformity Rule because it would be located in an area that meets federal standards and the area is not subject to a maintenance plan with conformity requirements, a separate discussion of air quality analysis requirements for NEPA is not provided.

The MBUAPCD has adopted two different sets of CEQA guidelines: Guidelines for Implementing the California Environmental Quality Act (2016 guidelines) for the MBUAPCD's implementation of CEQA as a lead or responsible agency (MBUAPCD, 2016a), and CEQA Air Quality Guidelines (2008 guidelines) that provide guidance for lead agencies that prepare project-specific CEQA and NEPA documentation for projects within the air district (MBUAPCD, 2008). The 2016 guidelines establish criteria pollutant significance thresholds for construction emissions, which were not included in the 2008 guidelines. Although the purpose of the 2016 guidelines is to describe the MBUAPCD's procedures for enforcing CEQA, the MBUAPCD recommends that lead agencies use the new criteria pollutant mass emissions thresholds identified in the 2016 guidelines for projects that would include a large construction effort (MBUAPCD, 2016b).

Due to the substantial amount of project-related construction activities that would occur within the Air Basin, the CPUC and Sanctuary have determined that the criteria pollutant mass emissions significance thresholds identified in the MBUAPCD's 2016 guidelines are appropriate to evaluate the regional air quality impacts that would be associated with the project. The 2016 guidelines state that a project would not have a significant air quality effect on the environment if construction or operation of the project would emit less than 137 pounds per day of NO_x or ROG, 82 pounds per day of PM_{10}, 55 pounds per day of $PM_{2.5}$, or 550 pounds per day of CO.

For the purpose of this EIR/EIS analysis, the MBUAPCD considers temporary emissions of a carcinogenic TAC that can result in a hazard index greater than 1 for acute or chronic impacts

and/or a cancer risk greater than 10 incidents per population of 1,000,000 to be significant (MBUAPCD, 2016a).

4.10.4 Approach to Analysis

Evaluation of potential impacts on air quality from construction and operation of the proposed project included reviewing relevant regulatory guidelines, characterizing the existing air quality environment throughout the project area, and estimating pollutant emissions from construction and operation of project facilities. Individual and cumulative impacts were assessed by comparing the MBUAPCD significance thresholds to estimated levels of pollutant emissions. The following discussions provide an overview of the approach to analysis for air quality impacts.

4.10.4.1 Consistency with Air Quality Plans

Any project that could conflict with the MBUAPCD's goal of attaining the state 8-hour ozone standard would be considered to conflict with the intent of the 2012 AQMP. The measures for determining whether a project would conflict with the intent of the 2012 AQMP is consistency with the CEQA mass emissions thresholds of significance for NO_x and ROG, and/or whether a project would contribute to population growth not accounted for in the 2012 AQMP. If the CEQA thresholds of significance are exceeded, or if the project would result in population growth not accounted for the 2012 AQMP, then the project would be considered to conflict with the intent of the 2012 AQMP and the associated impact would be significant.

4.10.4.2 Violate a Standard or Contribute to a Violation

Construction Emissions

For the purposes of this evaluation, the NO_x significance threshold represents emissions of all oxides of nitrogen, including NO_2. Given the low ambient levels of SO_2 and lead in the Air Basin, short-term construction-related SO_2 and lead emissions associated with the proposed project are not expected to result in significant effects and were not calculated.

For off-road equipment, emissions were estimated using the California Emissions Estimator Model version 2013.2.2 (CalEEMod v2013.2.2), with assumptions for construction equipment inventories, equipment horsepower ratings, and construction phasing developed by the CPUC and the Sanctuary in coordination with CalAm for this EIR/EIS analysis. It is assumed that each piece of equipment associated with construction of the proposed MPWSP Desalination Plant would operate for up to 12 hours per day, the drill rigs required to excavate the slant wells and ASR injection/extraction wells would operate for up to 24 hours per day, the other equipment required to construct the slant wells and associated facilities would operate for up to 12 hours per day, and construction equipment associated with all other proposed components (e.g., pipelines, pump stations, ASR facilities) would operate up to 8 hours per day. Emission factors for on-road trucks and worker vehicles were derived using CARB's EMFAC2014 Burden Model. The worst-case daily trip rates for each project component are presented in **Table 4.9-4** of Section 4.9, Traffic and Transportation.

Emission factors and process information from *AP-42, Compilation of Air Pollutant Emission Factors* (USEPA, 2006) and the CalEEMod emissions model results were used to calculate fugitive dust emissions from project-related construction activities. Maximum daily fugitive dust emissions were evaluated for the following activities: general site preparation and earthmoving for the MPWSP Desalination Plant, subsurface slant wells, ASR-5 and ASR-6 Wells, Carmel Valley Pump Station, and Terminal Reservoir; soil handling associated with 1,250 feet of trenching for seven pipeline segments (assuming pipeline installation rates of 150 to 250 feet per day); and travel on unpaved roads. For general site preparation and earth-moving activities, an emission rate of 20 pounds of PM_{10} per acre graded per day was used (CARB, 2002). Fugitive dust that would be associated with pipeline trench excavation activities was estimated using emission factors of 0.001 pound PM_{10} and 0.0002 pound per $PM_{2.5}$ per cubic yard material handled based on the truck loading emission factor formula used by CalEEMod (CAPCOA, 2013). $PM_{2.5}$ fractions for soil disturbance activities developed by the South Coast Air Quality Management District (SCAQMD) were used to estimate $PM_{2.5}$ fugitive dust emissions that would be associated with site preparation activities (SCAQMD, 2006). Fugitive dust in the form of PM_{10} and $PM_{2.5}$ resulting from travel on unpaved roads was estimated using USEPA methodology identified in *AP-42, Compilation of Air Pollutant Emission Factors* (USEPA, 2006). The MBUAPCD does not recommend quantification of entrained road dust from travel on paved roads (MBUAPCD, 2008).

ROG off-gassing that would be associated with project-related asphalt paving activities was estimated using the CalEEMod emission factor of 2.62 pounds ROG per acre paved per day (CAPCOA, 2013).

Operational Emissions

Long-term emissions estimates for the proposed project were based on the proposed emergency generators at the MPWSP Desalination Plant site, and the Carmel Valley Pump Station, vehicle trips associated with commuting workers and truck deliveries, and off-road equipment use associated with periodic maintenance at the slant well sites. Although the emergency generators would be relatively large (between 68 hp and 1,000 hp), it is anticipated that operation of the generators would be limited to 50 hours per year per generator and less than 5 hours per month for testing per generator based on MBUAPCD requirements. Emission factors for the emergency generators were obtained from the dealer specifications of standby diesel generator sets similar to the size of the proposed emergency generators, with an adjustment to particulate emissions limits per MBUAPCD Rule 1010. Emissions associated with vehicle trips were estimated using emission factors derived from CARB's EMFAC2014 Burden Model. Vehicle trips associated with operation of the proposed facilities were estimated as part of the impact analysis presented in Section 4.9, Traffic and Transportation (see **Table 4.9-4**). For off-road equipment associated with operational maintenance of the slant wells that would be required every five years, emissions were estimated using CalEEMod v2013.2.2, under the assumption that four pieces of heavy-duty off-road equipment would operate between five and eight hours per day for periods of up to 18 weeks.

4.10.4.3 Impacts on Sensitive Receptors

Construction of the proposed project would result in short-term diesel exhaust emissions from onsite heavy duty equipment and from material deliveries and hauling of excess spoils and debris. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by CARB in 1998. Construction of the project would pose a potential cancer and chronic health risk. These risks would primarily result when construction would be located in close proximity to sensitive receptors for an extended duration.

Construction of several components of the proposed project would occur in the immediate vicinity (i.e., within 1,000 feet) of sensitive receptor locations for durations ranging from several days to 6 months. Pipeline construction activities would proceed linearly at a rate of 150 feet to 250 feet per day, which would limit the duration of exposure for any given receptor. The three construction sites that pose the highest health risks include the Carmel Valley Pump Station and the ASR-5 and ASR-6 Wells. A health risk assessment was conducted for each of these three construction sites. The assessment includes estimations of DPM emissions based on PM_{10} exhaust emissions estimates made using the CalEEMod model that were then converted to maximum emissions concentrations, which were used to generate the maximum concentrations to estimate health risks. DPM concentrations for the three sites were modeled using the USEPA's AERMOD dispersion model (version 12060). The AERMOD modeling used several technical assumptions and inputs, including:

- rural dispersion coefficients;
- five years of meteorological data collected at the Monterey Airport from 2009 through 2013;
- PM10 emission rates for onsite construction exhaust estimated using CalEEMod;
- an area source (or sources) representing the construction area; and
- x, y, and z coordinates for sensitive receptors located in the project vicinity.

The maximum concentrations were converted to cancer and chronic health risks using the health risk assessment guidance issued by the California Office of Environmental Health Hazard Assessment (OEHHA, 2015) and the anticipated construction durations for each of the project facilities. The cancer risk estimate assumed a six-month exposure for sensitive receptors near the two pump station sites, with three months of exposure in the third trimester of pregnancy and three months in the 0 to 2 year age category. For the ASR-5 and ASR-6 Wells, a one-year DPM exposure period was used, with three months of exposure in the third trimester of pregnancy and nine months in the 0 to 2 year age category. For these three facilities the cancer risks for the third trimester assumed a daily breathing rate of 361 liters of air per kilogram of body weight-day, a child risk factor of 10, and 85 percent of the time spent at home. The health risk for the 0 to 2 year age category assumed a daily breathing rate of 1,090 liters of air per kilogram of body weight-day, a child risk factor of 10, and 85 percent of the time spent at home.

Operation of the proposed project would result in negligible long-term onsite TAC emissions, which would not be in the vicinity of any sensitive receptors that could pose a public health risk; therefore, the health risk analysis in this EIR/EIS relative to long-term project operations is qualitative.

4.10.5 Direct and Indirect Effects of the Proposed Project

Table 4.10-4 provides a summary of air quality impacts for the MPWSP.

TABLE 4.10-4
SUMMARY OF IMPACTS – AIR QUALITY

Impacts	Significance Determinations
Impact 4.10-1: Generate emissions of criteria air pollutants and contribute to a violation of an ambient air quality standard during construction.	SU
Impact 4.10-2: Construction activities could conflict with implementation of the applicable air quality plan.	SU
Impact 4.10-3: Expose sensitive receptors to substantial pollutant concentrations and/or *Coccidioides immitis* spores or create objectionable odors affecting a substantial number of people during construction.	LS
Impact 4.10-4: Long-term increase of criteria pollutant emissions that could contribute to a violation of an ambient air quality standard during operations.	LS
Impact 4.10-5: Expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people during operations.	LS
Impact 4.10-C: Cumulative impacts related to air quality.	SU

NOTES:

LS = Less than Significant impact, no mitigation required
LSM = Less than Significant impact with Mitigation
SU = Significant and Unavoidable, even with implementation of mitigation

4.10.5.1 Construction Impacts

Impact 4.10-1: Generate emissions of criteria air pollutants that could contribute to a violation of an ambient air quality standard during construction. (*Significant and Unavoidable, even with implementation of mitigation*)

Project construction would involve the use of a variety of off-road diesel-fueled equipment, including graders, backhoes, excavators, loaders, etc., that would emit exhaust containing air pollutants at the construction sites. In addition, construction vehicles and workers' vehicles would generate exhaust emissions offsite, and fugitive dust would be generated by onsite ground disturbing and material handling activities as well as by truck travel on unpaved roads. Average daily emissions associated with the construction components that could occur simultaneously were combined to determine the "worst-case" scenario for daily emissions. The worst-case daily emissions scenario is estimated to occur in May and June of 2019 and includes simultaneous construction of the proposed subsurface slant wells, MPWSP Desalination Plant, Source Water Pipeline, Brine Discharge Pipeline, Castroville Pipeline, Pipeline to CSIP, new Transmission Main, Terminal Reservoir, ASR Pipelines, ASR Injection and Extraction Wells, and Carmel Valley Pump Station. Emissions summaries are presented below for off-road (e.g., tractors, graders, backhoes) and on-road (i.e., light duty trucks and heavy haul trucks) exhaust sources as well as for sources of fugitive dust (e.g., dust entrainment from travel on unpaved roads and earth moving activities such as grading and excavation) and ROG off-gassing from paving.

Assumptions used to estimate construction emissions are summarized in Section 4.10.4, above, and are presented in detail in **Appendix G1**. A summary of the estimated maximum daily construction emissions is presented in **Table 4.10-5**.

TABLE 4.10-5
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (pounds/day)

Emission Source	ROG	NOx	CO	PM_{10}	$PM_{2.5}$
Off-road Construction Equipment and On-road Vehicle Exhaust*					
Desalination Plant	6.39	90.11	48.47	3.36	2.71
Subsurface Slant Wells	3.57	48.28	23.09	1.84	1.56
Source Water Pipeline	2.51	31.10	19.34	1.31	1.12
Brine Discharge Pipeline	2.34	26.99	17.21	1.18	1.04
Castroville Pipeline	2.39	27.59	17.61	1.19	1.06
Pipeline to CSIP	2.34	26.99	17.21	1.18	1.04
New Transmission Main	2.54	31.52	19.62	1.32	1.13
Terminal Reservoir	2.40	36.30	16.99	1.29	1.01
ASR Pipelines	2.47	30.74	19.10	1.30	1.10
ASR Injection and Extraction Wells	1.45	20.36	10.73	0.70	0.55
Carmel Valley Pump Station	1.09	13.62	7.56	0.51	0.44
Subtotal	**29.48**	**383.59**	**216.91**	**15.16**	**12.76**
Fugitive Dust	N/A	N/A	N/A	263.92	36.04
Off-gassing from Paving	4.53	N/A	N/A	N/A	N/A
Total	**34.01**	**383.59**	**216.91**	**279.08**	**48.80**
MBUAPCD CEQA Significance Threshold	137	137	550	82	55
Exceeds Threshold Without Mitigation?	No	Yes	No	Yes	No
Exceeds Threshold With Mitigation?	No	Yes	No	No	No

NOTE: N/A = not applicable.

* The on-road vehicle emissions of PM_{10} and $PM_{2.5}$ identified in this table include emissions associated with break and tire wear.

SOURCE: ESA, 2016. See **Appendix G1**.

Gaseous Criteria Pollutant Emissions

As shown in Table 4.10-5, maximum daily construction equipment and vehicle exhaust emissions of NO_x would be approximately 384 pounds per day, which would exceed the MBUAPCD's significance threshold of 137 pounds per day, resulting in a significant impact. Emissions of ROG and CO would not exceed the MBUAPCD's respective significance criteria; therefore, impacts associated with these pollutants would be less than significant. Implementation of **Mitigation Measures 4.10-1a (Equipment with High-Tiered Engine Standards)** and **4.10-1b (Idling Restrictions)** would reduce NO_x emissions by requiring CalAm and/or its construction contractor(s) to make a good faith effort to use construction equipment that meets the highest USEPA-certified tiered emission standards as well as to ensure on-road and off-road equipment

idling is minimized. For the purpose of estimating mitigated construction emissions of NO_x, it is assumed that compliance with Mitigation Measure 4.10-1a would result in equipment emissions that would be equivalent to those that would be associated with use of engines that comply with Tier 3 engine standards. Implementation of this mitigation measure would decrease maximum daily construction emissions of NO_x to approximately 324 pounds per day, which would continue to result in a significant impact with respect to contributing to an exceedance of an ozone and/or NO_2 ambient air quality standard. With regard to the emission reductions that would be associated with Mitigation Measure 4.10-1b, because the emission estimates summarized in Table 4.10-5 do not include emissions associated with idling vehicles, implementation of this measure would not reduce NO_x exhaust emissions calculated for the proposed project.

Particulate Matter

The majority of PM_{10} construction emissions would result from fugitive dust associated with earth moving activities and vehicle travel on unpaved roadways. The worst-case scenario assumes that a total of up to approximately 4.3 acres would be disturbed on the maximum emissions day by grading and other earthmoving site preparation activities at the proposed MPWSP Desalination Plant (2 acres per day), slant wells (1 acre), ASR facilities (0.25 acre), Carmel Valley Pump Station (0.08 acre), and Terminal Reservoir (1 acre) sites. Regarding pipeline installation activities, it is assumed that a maximum of 3,556 cubic yards of soil material would be handled each day to excavate and backfill the pipeline trenches. For motor vehicle travel on unpaved roads, it is assumed that there would be a maximum of approximately 92 miles of vehicle travel on unpaved roads associated with construction of the subsurface slant wells, Castroville Pipeline, and the Terminal Reservoir.

As identified in **Table 4.10-5**, estimated maximum daily construction emissions of PM_{10} would be approximately 279 pounds per day, which would exceed the MBUAPCD's significance threshold of 82 pounds per day, resulting in a significant impact. Emissions of $PM_{2.5}$ would not exceed the MBUAPCD's respective significance criterion; therefore, impacts associated with this pollutant would be less than significant. Implementation of **Mitigation Measures 4.10-1a** and **4.10-1b** would reduce PM_{10} exhaust emissions by requiring CalAm and/or its construction contractor(s) to make a good faith effort to use construction equipment that meets the highest USEPA-certified tiered emission standards as well as to ensure on-road and off-road equipment idling is minimized. Implementation of Mitigation Measure 4.10-1a would decrease the maximum daily construction exhaust emissions of PM_{10} identified in Table 4.10-5 by approximately 2 pounds per day, while the decrease that would be associated with implementation of Mitigation Measure 4.10-1b cannot be quantified (see above).

With regard to reducing PM_{10} emissions of fugitive dust, **Mitigation Measure 4.10-1c (Construction Fugitive Dust Control Plan)**, would require CalAm to implement a comprehensive construction dust control plan. It is estimated that implementation of the Construction Fugitive Dust Control Plan would decrease fugitive dust emissions during earth disturbance activities by 65 percent, and would decrease unpaved road travel fugitive dust emissions in the vicinity of the subsurface slant wells at the CEMEX active mining area and the access road to the Castroville Pipeline by as much as 75 percent based on mitigation control

efficiency factors published by SCAQMD (SCAQMD, 2007; see **Appendix G1** for all mitigation reduction assumptions).

In addition, **Mitigation Measure 4.10-1d (Pave Terminal Reservoir Access Road)** would provide a substantial reduction in fugitive dust PM_{10} emissions by requiring the construction contractor to stabilize the unpaved access road to Terminal Reservoir. This measure would decrease unpaved road travel dust emissions along this access road by 100 percent. It should be noted that implementation of Mitigation Measure 4.10-1d would in itself result in minor short-term emissions of criteria pollutants associated with equipment that would be used to stabilize the road; however, these emissions would occur prior to the start of construction activities at the Terminal Reservoir site. Therefore, implementation of this measure would not change the worst-case daily emissions scenario presented in Table 4.10-5.

It is estimated that implementation of Mitigation Measures 4.10-1a through 4.10-1d (see below) would reduce maximum daily construction emissions of PM_{10} to approximately 75 pounds per day, which would be below the MBUAPCD PM_{10} significance threshold of 82 pounds per day. It should be noted that if CalAm is unsuccessful securing all equipment with Tier 3 engine standards, the PM_{10} emissions would continue to be less than significant, given the relatively low potential emission reductions that would be associated with Mitigation Measure 4.10-1a compared to Mitigation Measures 4.10-1c and 4.10-1d. Therefore, with implementation of mitigation, it can be concluded that short-term emissions associated with construction of the MPWSP would not contribute to an exceedance of a PM_{10} state or federal standard. Therefore, this impact would be mitigated to a less-than-significant level.

Consistency with Regulatory Requirements

As noted in Section 4.10.2, Regulatory Framework, the MPWSP would be potentially inconsistent with City of Seaside Municipal Code Sections 8.40.030 and 8.40.040. **Mitigation Measures 4.10-1a** through **2.10-1d** would reduce pollutant emissions, but project-related construction emissions could still be inconsistent with these municipal code sections.

Impact Conclusion

Short-term emissions associated with construction of the proposed project could contribute to an exceedance of a state and/or federal standard for ozone, NO_2, and, PM_{10} based on the estimated maximum daily mass emissions levels presented in Table 4.10-5, which would exceed the MBUAPCD significance threshold for PM_{10}. However, this impact with respect to the ozone and NO_2 standards would be significant and unavoidable even with implementation of Mitigation Measures 4.10-1a and 4.10-1b. This significant impact could increase the susceptibility of sensitive individuals to respiratory infections. With respect to the PM_{10} standards, this impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 4.10-1a through 4.10-1d. Short-term construction emissions associated with other criteria pollutants, including ROG, CO, and $PM_{2.5}$, would not be expected to contribute to an exceedance of an ambient air quality standard and the associated impact for all other criteria pollutants would be less than significant.

Mitigation Measures

Mitigation Measure 4.10-1a applies to all of the proposed project components.

Mitigation Measure 4.10-1a: Equipment with High-Tiered Engine Standards.

For diesel-fueled off-road construction equipment of more than 50 horsepower, CalAm and/or its construction contractor shall make a good faith effort to use available construction equipment that meets the highest USEPA-certified tiered emission standards. For all pieces of equipment that would not meet at least Tier 3 emission standards, CalAm or its construction contractor shall provide to the CPUC documentation from two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment. Such documentation shall be provided to the CPUC at least two weeks prior to the anticipated use of those pieces of equipment.

Mitigation Measure 4.10-1b applies to all proposed project components.

Mitigation Measure 4.10-1b: Idling Restrictions.

On road vehicle idling time shall be minimized and shall not exceed a five minute maximum. Additionally, off-road engines shall not idle for longer than five minutes per Section 2449(d)(3) of Title 13, Article 4.10, Chapter 9 of the California Code of Regulations. Clear signage of this requirement shall be provided for construction workers at all access points to construction areas.

Mitigation Measure 4.10-1c applies to all of the proposed project components.

Mitigation Measure 4.10-1c: Construction Fugitive Dust Control Plan.

CalAm shall require its construction contractor(s) to implement a dust control plan that includes, at minimum, the following dust control measures:

- Water all active construction areas at least twice daily;
- Cover all trucks hauling soil, sand, and other loose materials and require trucks to maintain at least 2 feet of freeboard;
- Apply water three times daily, or apply (non-toxic) soil stabilizers, on unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more);
- Enclose, cover, or water twice daily exposed stockpiles (dirt, sand, etc.);
- Limit traffic speeds on unpaved roads to 15 miles per hour;

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Wheel washers shall be installed and used by truck operators at the exits of the construction sites to the MPWSP Desalination Plant, the slant wells, the ASR well facilities, and the Terminal Reservoir; and
- 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 Monterey Bay Unified Air Pollution Control District (MBUAPCD) shall also be visible to ensure compliance with MBUAPCD rules.

Mitigation Measure 4.10-1d applies to the Terminal Reservoir access road.

Mitigation Measure 4.10-1d: Pave Terminal Reservoir Access Road.

CalAm shall require its construction contractor(s) to pave the existing access road to the Terminal Reservoir site. This access road shall be paved prior to the commencement of construction activities at the Terminal Reservoir site.

Impact 4.10-2: Construction activities could conflict with implementation of the applicable air quality plan. (*Significant and Unavoidable, even with implementation of mitigation*)

The most recently adopted air quality plan for the project area is the 2012 AQMP. The 2012 AQMP documents the MBUAPCD's progress toward attaining the state 8-hour ozone standard. Any project that could conflict with the MBUAPCD's goal of attaining the state 8-hour ozone standard would be considered to conflict with the intent of the 2012 AQMP. To determine whether construction of the proposed project would conflict with the intent of the 2012 AQMP, construction emissions were compared to the MBUAPCD thresholds for the ozone precursors NO_x and ROG.

As presented in the previous impact discussion, the project-related short-term construction emissions with mitigation measures incorporated would exceed the significance threshold for NO_X (see Impact 4.10-1, above); therefore, the project would not support the primary goal of the 2012 AQMP, and the impact associated with conflicting or obstructing implementation of the applicable air quality plan would be significant.

Consistency with Regulatory Requirements

As noted in Section 4.10.2, Regulatory Framework, the MPWSP would be potentially inconsistent with the 2012 AQMP, which was established to reduce ozone emissions to below ambient air quality standards, because it could contribute to a temporary exceedance of an ozone ambient air quality standard. As discussed in the preceding paragraphs, **Mitigation Measures 4.10-1a** and

4.10-1b would reduce ozone precursor emissions, but not to the extent that impacts contributing to ozone standard exceedances would be avoided.

Impact Conclusion

As identified under Impact 4.10-1, implementation of **Mitigation Measures 4.10-1a** and **4.10-1b** would not reduce project-related NO_X emissions to below the significance threshold. Therefore, this impact is considered to be significant and unavoidable, even with implementation of mitigation.

Mitigation Measures

Mitigation Measure 4.10-1a applies to the project as a whole.

> **Mitigation Measure 4.10-1a: Equipment with High-Tiered Engine Standards.**
>
> (See Impact 4.10-1, above, for description.)

Mitigation Measure 4.10-1b applies to all project components.

> **Mitigation Measure 4.10-1b: Idling Restrictions.**
>
> (See Impact 4.10-1, above, for description.)

Impact 4.10-3: Expose sensitive receptors to substantial pollutant concentrations and/or *coccidioides immitis* spores or create objectionable odors affecting a substantial number of people during construction. (*Less than Significant*)

Sensitive Receptor Exposure to TACs

Construction of the proposed project would result in the short-term generation of DPM emissions from the use of off-road diesel equipment. These emissions could result in the short-term exposure of local sensitive receptors to TACs (i.e., DPM). The dose to which receptors are exposed is the primary factor affecting health risk from TACs. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance.

As discussed in Section 4.10.4, the two construction sites that pose the greatest health risks include the Carmel Valley Pump Station and the ASR Injection/Extraction Wells site. PM_{10} exhaust emissions are conservatively used here as a surrogate for DPM. AERMOD, as described in Section 4.10.4, was used to estimate maximum annual PM_{10} concentrations at sensitive receptors in the vicinity of these sites and those concentrations were then converted to health risks. **Table 4.10-6** shows the maximum estimated DPM concentrations for each construction site as well as the associated estimated cancer risks and chronic health hazards. Construction of the Carmel Valley Pump Station would pose a cancer risk of 5.2 per million and a chronic health hazard of 0.027. Construction of the ASR Injection/Extraction Wells would pose a maximum cancer risk of 6.4 per million and a chronic health hazard of 0.034. For both sites, all values are

less than the cancer risk and health hazard index significance thresholds established by the MBUPACD (i.e., the proposed project would not result in a hazard index greater than 1 for acute or chronic impacts and/or cancer risk greater than 10 incident per 1,000,000 population). Therefore, impacts associated with the proposed project's potential to expose sensitive receptors to substantial pollutant concentrations would be less than significant.

TABLE 4.10-6
MAXIMUM DPM CONCENTRATIONS, CANCER RISKS, AND CHRONIC HEALTH INDICES

Construction Site	Maximum DPM Concentration (µg/m^3)	Cancer Risk (per million)	Chronic Health Index
Carmel Valley Pump Station	0.137	5.2	0.027
ASR Injection/Extraction Wells Site	0.168	6.4	0.034
Significance Threshold	---	10	1

SOURCE: ESA, 2016. See **Appendix G1**.

Sensitive Receptor Exposure to Coccidioides Immitis Spores

Construction activities that include ground disturbance would have the potential to release coccidioides immitis spores. However, it is likely that much of the population of Monterey County has already been exposed to Valley Fever and would continue to be exposed because of the various earthmoving activities that have historically occurred and continue to occur as a result of agricultural and construction activities throughout the region. As a result of the endemic nature of the disease and the number of earthmoving activities in the County (e.g., grading and excavation for agriculture, as well as new residential, commercial, and industrial development, and surface mining operations), there are new cases of Valley Fever documented in the County each year; however, many people who are exposed do not develop symptoms.

Valley Fever-related impacts associated with the project would not be considered significant because ongoing ground-disturbing activities in the County currently represent a continual source of spores that contribute to the low number of Valley Fever cases reported each year. Construction activities associated with the project would result in similar localized ground disturbing activities to those that occur continually within the County and the project would not result in a substantial increase in spore release. Therefore, construction of the project would not represent an increased risk to public health. In addition, implementation of Mitigation Measure 4.10-1c (see above), which requires implementation of fugitive dust control measures, would ensure that fugitive dust that could contain coccidioides immitis spores would be controlled to the maximum extent feasible. Valley Fever-related impacts would be less than significant.

Sensitive Receptor Exposure to Odors

Construction activities that would be associated with the proposed project could result in temporary odors from use of diesel-fueled equipment. These odors would be temporary and would dissipate quickly, and would be unlikely to create objectionable odors that would affect a substantial number of people.

Impact Conclusion

Short-term construction activities that would be associated with the MPWSP would not expose sensitive receptors to substantial pollutant concentrations or substantial increased risk associated with coccidioides immitis spores, and would not create objectionable odors that would affect a substantial number of people. The associated impact would be less than significant.

Mitigation Measures

None required.

4.10.5.2 Operational and Facility Siting Impacts

The proposed project would not conflict with or obstruct implementation of the applicable air quality plan during project operations. With regard to long-term operations, there would be no permanent stationary sources of air pollutant emissions associated with the proposed project, with the exception of emergency generator testing, and mobile sources would be limited. In addition, any additional growth that could be served by the proposed project would be consistent with the levels of growth anticipated in the adopted land use plans of jurisdiction in CalAm's Monterey District service area (see Section 6.3, Growth-Inducement). For these reasons, long-term operation of the proposed project would not conflict with or obstruct implementation of the 2012 AQMP and this issue is not addressed further in this EIR/EIS.

Impact 4.10-4: Long-term increase of criteria pollutant emissions that could contribute to a violation of an ambient air quality standard during operations. (*Less than Significant*)

Operation of the proposed project would rely on electrical power supplied from Pacific Gas and Electric Company (PG&E)'s existing regional power grid. It is generally not possible to determine the exact generation source(s) of electricity on the power grid that would supply the proposed project, or whether or not the electricity would even be generated within the Air Basin. Therefore, indirect emissions of criteria pollutants associated with electricity use from the regional power grid are not addressed in this air quality analysis because it would be impractical/impossible to do so.

MPWSP Desalination Plant, Carmel Valley Pump Station, and ASR Pump Station

Direct emission sources that would be associated with the proposed project include on-road vehicles, emergency generators at the MPWSP Desalination Plant, and the Carmel Valley Pump Station, and off-road equipment required for period maintenance of the slant wells. Mobile emission sources would include the daily commute trips of up to 30 facility operators and support personnel and three daily delivery truck trips that would be required to operate the desalination facilities. It is estimated that these activities would result in approximately 60 light-duty one-way truck trips and 6 heavy-duty one-way truck trips each day. Estimated mobile source emissions associated with the operations of the proposed project are presented below in **Table 4.10-7**. Refer

to **Appendix G1** for the calculation sheets that were used to estimate the operational emissions that would be associated with the proposed project.

TABLE 4.10-7
PROPOSED PROJECT OPERATIONAL EMISSIONS (pounds/day)

Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
On-road Vehicle Exhaust	0.09	1.46	2.36	0.10	0.04
Emergency Generator Testing	0.32	16.92	1.93	1.10	1.02
Slant Well Maintenance (off-road equipment)	0.94	8.28	6.30	0.31	0.29
Total	**1.35**	**26.66**	**10.59**	**1.51**	**1.35**
MBUAPCD CEQA Significance Threshold	137	137	550	82	55
Exceeds Threshold Without Mitigation?	No	No	No	No	No

NOTE: N/A = no applicable threshold.

SOURCE: ESA, 2016. See **Appendix G1**.

The only onsite emission sources that would be associated with the proposed project would be stand-by emergency diesel generators that would be installed at the MPWSP Desalination Plant and the Carmel Valley Pump Station to provide emergency back-up power, as well as off-road equipment that would be required every five years to maintain the slant wells. Securing permits from the MBUAPCD for the emergency standby generators would ensure less-than-significant operational impacts related to the use of such generators through adherence to MBUAPCD Rule 1010. Estimated emissions that would be associated with emergency generator testing and off-road equipment are presented above in **Table 4.10-7**.

All Other Proposed Project Components

None of the other proposed project components would result in the direct emission of criteria pollutants during operations and maintenance. Therefore, no impact would result.

Impact Conclusion

As identified in **Table 4.10-7**, combined operational emissions that would be associated with the MPWSP Desalination Plant, Carmel Valley Pump Station, and the slant wells would not exceed any of the significance thresholds; therefore, operational emissions would not be expected to result in or contribute to an exceedance of an ambient air quality standard and the associated impact would be considered to be less than significant. No impact would result from operation and maintenance of all other project components.

Mitigation Measures

None required.

Impact 4.10-5: Expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people during operations. (*Less than Significant*)

Sensitive Receptor Exposure to TACs

MPWSP Desalination Plant and Carmel Valley Pump Station. The only onsite DPM emissions sources that would be associated with the MPWSP would be the emergency generators at the MPWSP Desalination Plant and the Carmel Valley Pump Station. DPM emissions (in the form of $PM_{2.5}$) from routine testing and maintenance of these emergency generators would be less than 1 pound per day and would average up to 0.03 pound per day on an annual basis. Given the negligible amount of emissions that would be generated, long-term operations of the emergency generators would not exceed the MBUAPCD TAC significance threshold (i.e., the proposed project would not result in a hazard index greater than 1 for acute or chronic impacts and/or cancer risk greater than 10 incident per 1,000,000 population). Therefore, overall, the increased health risk from long-term project DPM emissions would be negligible and this impact would be less than significant.

All Other Proposed Facilities. None of the other proposed project facilities would include onsite DPM emissions sources, or emission sources of other TACs. Therefore, no impact related to the exposure of sensitive receptors to substantial pollutant concentrations would result from operation of all other project facilities.

Objectionable Odors

MPWSP Desalination Plant and ASR Wells. The chemical storage and chemical feed facilities at the MPWSP Desalination Plant and ASR-5 and ASR-6 wells would be closed systems. For open-air facilities, such as the backwash treatment facilities and residuals handling systems, including the sludge drying beds, odors would generally be managed through operational controls, such as to reduce detention times in basins. Operators could also use chemical stabilization techniques to control odor. For example, they could apply chemicals such as lime directly to the sludge drying bed and prevent odors from releasing to the atmosphere. Additionally, the MPWSP Desalination Plant would be co-located with the MRWPCA Regional Treatment Plant and the Monterey Regional Environmental Park, which are currently sources of odors in the area.

While operation of the MPWSP Desalination Plant could result in limited onsite odors associated with sludge management, due to the lack of nearby sensitive receptors in the immediate vicinity and the location of the site within an industrialized area that is an existing source of odor, the proposed project would not be expected to create objectionable odors that would affect a substantial number of people.

All Other Proposed Facilities. None of the other proposed project facilities would include onsite odor sources. Therefore, no impact related to the objectionable odors affecting a substantial number of people would result from operation of all other project facilities.

Impact Conclusion

Long-term operations that would be associated with the MPWSP would not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors that would affect a substantial number of people. The impact would be less than significant.

Mitigation Measures

None required.

4.10.6 Cumulative Effects of the Proposed Project

The cumulative scenario and cumulative impacts methodology are described in Section 4.1.7. Table 4.1-2 lists potential cumulative projects.

Impact 4.10-C: Cumulative impacts related to air quality (*Significant and Unavoidable, even with implementation of mitigation*)

The geographic scope of analysis for potential cumulative air quality impacts is the North Central Coast Air Basin. As indicated in **Table 4.10-2**, the air basin does not attain the state standards for ozone or PM_{10}; however, it attains (or is unclassified for) all federal standards. Therefore, existing conditions in the air basin are considered to be cumulatively significant with respect to attaining the state standards for ozone and PM_{10}. The timeframe during which the MPWSP could contribute to cumulative air quality effects includes the construction phase, as well as the anticipated approximately 40-year operations phase.

In developing thresholds of significance for air pollutants, MBUAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. Based on MBUAPCD thresholds and CEQA guidance, if individual project emissions would exceed the identified significance thresholds, a significant cumulative air quality impact would occur and the project's contribution to the cumulative impact would be considered cumulatively considerable. If project emissions would not exceed the significance thresholds, the project's incremental contribution to any potential cumulative impact would not be cumulatively considerable.

Cumulative Construction Impacts

As described in the Impact 4.10-1 discussion, MPWSP construction activities would generate short-term NO_x emissions in quantities that would exceed the MBUAPCD threshold, even with implementation of **Mitigation Measures 4.10-1a (Equipment with High-Tiered Engine Standards)** and **4.10-1b (Idling Restrictions)**. Therefore, the cumulative impact of project construction emissions associated with the potential to contribute to a violation of an ambient air quality standard and conflict with implementation of the applicable air quality plan and would be significant when combined with the emissions associated with the cumulative projects in Table 4.1-2 would be significant, and the MPWSP's incremental contribution to the cumulative impact would be cumulatively considerable. No further feasible mitigation measures are available

that would reduce the project's incremental contribution to less than cumulatively considerable *(significant and unavoidable)*.

With regard to emissions of PM_{10}, proposed project emissions would be significant and would therefore have a cumulatively considerable contribution to a significant cumulative impact. However, **Mitigation Measures 4.10-1a** and **4.10-1b**, and **Mitigation Measures 4.10-1c (Construction Fugitive Dust Control Plan)** and **4.10-1d (Pave Terminal Reservoir Access Road)** would reduce emissions of PM_{10} during MPWSP construction activities to a level that would be below the MBUAPCD threshold. The air quality construction thresholds established by MBUAPCD were designed for the North Central Coast Air Basin and are intended to address the incremental contributions of individual projects on the quality of the air basin as a whole. Therefore, conformance with the MBUAPCD threshold ensures that an individual project would not have a cumulatively considerable impact with respect to overall air quality within the air basin. As a result, the MPWSP's incremental contribution of construction-related PM_{10} emissions would not be cumulatively considerable (*less than significant with mitigation*).

With regard to impacts on sensitive receptors, the total diesel particulate matter (DPM) and fugitive dust emissions exposure periods from onsite equipment that would be required to construct MPWSP components would be limited to between several days and 24 months depending on the specific facility (see Impact 4.10-3 discussion relative to sensitive receptor exposure to TACs and coccidioides immitis spores). Nearby cumulative projects with construction schedules that overlap with the MPWSP would also be expected to expose sensitive receptors to DPM emissions and coccidioides immitis spores. While these emissions could be substantial, they would be temporary and generally limited to a period of a couple years or less for a given project. In addition, the project would not result in a substantial increase in spore release relative to localized ground disturbing activities associated with the cumulative projects. Also, none of the cumulative project locations illustrated in Figure 4-1, *Cumulative Projects*, would be located within 0.5 mile of the ASR Injection/Extraction or Carmel Valley Pump Station construction sites. The effects of MPWSP construction and cumulative projects would not be expected to result in long-term exposure of sensitive receptors to TAC emissions. As a result, no significant cumulative impact would occur as a result of the identified projects (*less than significant*).

In addition, construction of the MPWSP would result in diesel emissions-based odors, which would result in a negligible and short-term effect on nearby sensitive receptors (see Impact 4.10-3 discussion relative to sensitive receptor exposure to odors). Cumulative projects could also contribute to increases in diesel emissions-based odors. However, as noted previously, such increases would be limited in duration and extent. As a result, no significant cumulative effect related to odors would occur as a result of the proposed project (*less than significant*).

Cumulative Operational Impacts

Noted previously, pursuant to MBUAPCD CEQA Guidelines, a project's operational emissions would have a cumulatively considerable contribution to a significant cumulative impact if they exceed adopted significance thresholds. As discussed in Impacts 4.10-4 and 4.10-5, MPWSP operations would not cause emissions that would exceed the MBUAPCD significance thresholds.

Therefore, the MPWSP would not have a cumulatively considerable incremental contribution to a significant cumulative impact related to emissions of criteria pollutants (*less than significant*).

With regard to impacts on sensitive receptors, onsite DPM emissions from project operation would be limited to emergency generators at the MPWSP Desalination Plant and the Carmel Valley Pump Station. DPM emissions (in the form of $PM_{2.5}$) from routine testing and maintenance of these emergency generators would be less than 1 pound per day and would average up to 0.03 pound per day on an annual basis. As discussed in Impact 4.10-5, such emissions would be negligible and would not result in a cumulatively considerable contribution to a significant cumulative impact (*less than significant*).

Also discussed in Impact 4.10-5, MPWSP operation would not contribute substantially to offsite exposure of sensitive receptors to objectionable odors. To the extent the MPWSP would result in any objectionable odors, they would likely result from MPWSP Desalination Plant operation. The MPWSP Desalination Plant site is located within an industrial area with no sensitive receptors in the immediate vicinity. As a result, the MPWSP would not result in a cumulatively considerable contribution to a significant cumulative impact with respect to TACs or odors (*less than significant*).

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