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3.3 Air Quality

This section identifies and evaluates issues related to Air Quality in the context of the Project and alternatives. It includes information about the physical and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The information and analysis presented are based in part on emissions calculations presented in **Appendix B**, *Air Quality and Greenhouse Gas Emissions*.

The Shasta County Air Quality Management District (AQMD), consistent with its role as a Responsible Agency, provided initial input for the County's environmental review process shortly after the CUP application was filed for the Project (AQMD, 2018). Later, in response to the issuance of the notice of intention to prepare this Draft EIR, the County received scoping input from the AQMD and others raising concerns about the proximity of residential receptors to Project emissions from construction material delivery vehicles (including wide or "super" loads for turbine components) originating outside the County, secondary impacts resulting from increased emissions from other vehicle delays resulting from traffic controls and lane closures required for material deliveries, emissions from construction worker commute trips and construction vehicles, on-site vehicle and equipment emissions for site preparation-related timber harvesting, and dust. All scoping input received, including that regarding air quality, is provided in Section 4.1 of the Scoping Report, a copy of which is provided in **Appendix J**, *Scoping Report*.

3.3.1 Setting

3.3.1.1 Study Area

The Project Site is in Shasta County in the extreme northern end of the Sacramento Valley Air Basin (Air Basin), which is comprised of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, and Yuba counties, the western portion of Placer County, and the eastern portion of Solano County. The geographic area of analysis for purposes of this section is the Air Basin and a small portion of San Joaquin Valley Air Basin (SJVAB). The vast majority of Project emissions would occur in Shasta County except for a portion of truck trips that would be required to deliver turbine components that would originate at the Port of Stockton, which is in the extreme northwestern end of SJVAB.

3.3.1.2 Environmental Setting

Geography and Climate

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions, which influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The Air Basin is surrounded by the Klamath and Coastal Mountains to the northwest and the Cascade Mountains to the northeast and east. When winds are calm with fairly stable atmospheric conditions, the potential for substantial air pollution in the Air Basin is considered high (Shasta County, 2004).

The low elevation areas of Shasta County generally experience moderate to very poor capability to disperse pollutants nearly 80 percent of the time. This is primarily due to the relatively stable atmosphere that acts to suppress vertical air movement. Extremely stable atmospheric conditions referred to as "inversions" act as barriers to pollutants. Elevations within the Project Site range from 3,000 to 6,000 feet above sea level. In valley locations under 1,000 feet elevation, such as the Redding Metropolitan area approximately 30 miles to the southwest of the Project Site, create a "lid" under which pollutants become trapped. Dust and other pollutants can be trapped within these inversion layers and will not disperse until atmospheric conditions become more unstable. This situation creates concentrations of pollutants at or near the ground surface that can pose significant health risks for plants, animals, and people (Shasta County, 2004).

The climate in the vicinity of the Project Site provides average maximum and minimum winter (i.e., January) temperatures of 44 degrees Fahrenheit (ºF) and 19 ºF, respectively, while average summer (i.e., July) maximum and minimum temperatures are 88 ºF and 44 ºF, respectively (WRCC, 2020a). Rainfall averages approximately 67 inches per year and snowfall averages 79 inches per year, with an average winter snow depth of 2 inches (WRCC, 2020b). Average annual wind speeds in the vicinity of Round Mountain are approximately 19 miles per hour (mph), with average monthly peak wind speed at approximately 29 mph during October, and average monthly minimum average wind speed at 11 mph in June (USA, 2020). A scoping comment noted south-west prevailing summer winds. See Letter P117, provided in Appendix H of the Scoping Report included as Appendix J to this Draft EIR.

Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants and has set National Ambient Air Quality Standards (NAAQS) for widespread pollutants from numerous and diverse sources that are a threat to public health and welfare. The USEPA has set NAAQS for the following seven principal pollutants, which are called “criteria” pollutants:

- Carbon monoxide (CO);
- Lead;
- Nitrogen dioxide (NO_2);
- Ozone;
- Particulate matter less than or equal to 10 microns in diameter (PM_{10});
- Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$); and
- Sulfur dioxide (SO_2).

The State of California has established California Ambient Air Quality Standards (CAAQS) for these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide (H_2S), and vinyl chloride. NAAQS and CAAQS are summarized in Table 3.3-2, *NAAQS/CAAQS*

and Attainment Status for Shasta County. Criteria pollutants that would be generated by the Project are described below.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that 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 reactive organic gases (ROG) and nitrogen oxides (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 3 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 conditions, such as long sunny days and regional subsidence inversions, are conducive to the formation and accumulation of secondary photochemical compounds.

According to the USEPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath (USEPA, 2019). Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease (USEPA, 2019). Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children (USEPA, 2019).

Inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath (CARB, 2019a). People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers (USEPA, 2019). Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure (USEPA, 2019). Studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults (CARB, 2019a). Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures (CARB, 2019a).

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is an air quality pollutant of concern because it acts as a respiratory irritant. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as oxides of nitrogen (NO_x). A precursor to ozone formation, NO_x is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NO_x emitted from fuel combustion is in the form of nitric oxide (NO) and NO_2. NO is converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere. NO_2 can potentially irritate airways in the human respiratory system (USEPA, 2016). Short-term exposures can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms and longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections.

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

Particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) 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. Particulates can damage materials and reduce visibility. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. According to a study by the California Air Resources Board (CARB), the estimated number of annual $PM_{2.5}$-related premature deaths in California is 9,200 (CARB, 2010). A large body of scientific evidence indicates that both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths) (CARB, 2020a).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion

of sulfur-containing fuels, such as oil, coal, and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

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 nearly 200 compounds, including Diesel Particulate Matter (DPM) emissions from diesel-fueled engines (CARB, 2011).

Existing Air Quality

The AQMD is the local air district responsible for air quality within Shasta County. The AQMD maintains a regional monitoring network that measures the ambient concentrations of criteria pollutants in the County. Ambient air quality measurements from air monitoring stations maintained by the AQMD help to determine the level of air quality in the local area. The closest air quality monitoring stations to the Project Site are the Shasta Lake monitoring station, located approximately 27 miles west-southwest of the southwestern Project Site boundary, and the Redding monitoring station, located approximately 30 miles southwest of the southern Project Site boundary. **Table 3.3-1** shows a 5-year (2014 through 2018) summary of ozone and PM_{10}, data collected at the Shasta Lake monitoring station, and $PM_{2.5}$ data collected at the Redding monitoring station. The data are compared to the CAAQS and NAAQS.

TABLE 3.3-1
AIR QUALITY DATA SUMMARY (2014–2018) FOR THE STUDY AREA

Pollutant	Standard	Monitoring Data by Year				
		2014	2015	2016	2017	2018
Ozone – Shasta Lake						
Highest 1 Hour Average (ppm)		0.067	0.091	0.093	0.096	0.111
Days over State Standard	0.09	0	0	0	1	1
Highest 8 Hour Average (ppm)		0.062	0.082	0.082	0.088	0.088
Days over National Standard*	0.070	0	12	13	13	11
Particulate Matter (PM_{10}) – Shasta Lake						
Highest 24 Hour Average (µg/m^3)		77	84	32	84	142
Measured Days over State Standard	50	1	1	0	1	8
State Annual Average (µg/m^3)	20	*	14	12	*	*
Particulate Matter ($PM_{2.5}$) - Redding						
Highest 24 Hour Average (µg/m^3)		22	65	13	67	131
Measured Days over National Standard	35	0	1	0	1	5
State Annual Average (µg/m^3)	12	5	*	*	8	*

NOTES: ppm = parts per million; µg/m^3 = micrograms per cubic meter; * = insufficient data.

SOURCE: CARB, 2020b

As shown in Table 3.3-1, measured ozone levels exceeded the State 1-hour ozone standard once per year during 2017 and 2018. The national 8-hour ozone standard was not exceeded in 2014, but exceeded between 11 and 13 times per year during the rest of the 5-year period. PM_{10} was measured to exceed the 24-hour State PM_{10} standard once per year during 2014, 2015, and 2017, but was measured to exceed the standard eight times in 2018. $PM_{2.5}$ was measured to exceed the national 24-hour $PM_{2.5}$ standard once per year in 2015 and 2017, and was measured to exceed the standard five times in 2018. The relatively high PM_{10} and $PM_{2.5}$ measurements in 2018 are likely attributed to the Camp Fire that occurred in Paradise, approximately 75 miles south-southeast of Shasta Lake. The Camp Fire impacted regional air quality in the late Fall of 2018, throughout northern and central California (Quartz, 2018).

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions 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 greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. The AQMD considers sensitive receptors to be facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants (AQMD, 2003a).

The closest sensitive receptors to the Project Site are residences. The nearest residence to any of the work areas on the Project Site are off Sycamore Road, approximately 1,900 feet to a construction staging area. The closest residence to any of the access roads on the Project Site are along Moose Avenue, at a distance of approximately 400 feet.

3.3.1.3 Regulatory Setting

Air quality within the Air Basin is addressed through the efforts of various federal, State, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The air pollutants of concern and agencies primarily responsible for improving the air quality within the Air Basin and the pertinent regulations are discussed below.

Criteria Air Pollutants

Regulation of air pollution is achieved through both CAAQS and NAAQS as well as emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for ozone, CO, NO_2, PM_{10}, $PM_{2.5}$, and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set "primary" and "secondary" maximum ambient thresholds for all six criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals that suffer from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded, more than once per year. California has adopted more stringent ambient air quality standards (i.e., CAAQS) for most of the criteria air pollutants, which also are designed to protect human health. Emission levels above the NAAQS and/or CAAQS are levels that could create adverse effects on human health.

Table 3.3-2 presents both sets of ambient air quality standards (i.e., national and State) and provides the attainment status in Shasta County for each. California also has established State ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected under the Project or alternatives and are not further discussed in this EIR.

Shasta County is classified as a non-attainment area for the State 1-hour and 8-hour ozone standards. For all other criteria pollutants, the County is classified as either unclassified or as attainment with respect to State and federal standards; however, the rest of the Air Basin is classified as non-attainment of the State PM_{10} standards (CARB, 2016). The NAAQS and CAAQS are applicable to this analysis because the Project could impact the attainment status of ozone or PM_{10} in the Air Basin.

Federal

The USEPA is responsible for implementing programs established under the federal Clean Air Act (CAA), such as establishing and reviewing the NAAQS and judging the adequacy of State Implementation Plans (SIPs), but 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.

State

CARB is responsible for establishing and reviewing the State standards, compiling the California SIP and securing approval of that plan from USEPA, conducting research and planning, and identifying TACs. CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality districts, which are organized at the county or regional level. County or regional air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal CAA and California CAA.

TABLE 3.3-2
NAAQS/CAAQS AND ATTAINMENT STATUS FOR SHASTA COUNTY

Criteria Pollutant	Averaging Time	State Standard	Shasta County Attainment Status for California Standard	Federal Primary Standard	Shasta County Attainment Status for Federal Standard
Ozone	8 Hour	0.070 ppm	Non-Attainment	0.070 ppm	Attainment
	1 Hour	0.09 ppm	Non-Attainment	---	---
Carbon Monoxide	8 Hour	9.0 ppm	Unclassified	9 ppm	Attainment
	1 Hour	20 ppm	Unclassified	35 ppm	Attainment
Nitrogen Dioxide	Annual Average	0.030 ppm	Attainment	0.053 ppm	Attainment
	1 Hour	0.18 ppm	Attainment	0.100 ppm	Attainment
Sulfur Dioxide	Annual Average	---	---	0.030 ppm	Attainment
	24 Hour	---	---	0.14 ppm	Attainment
	1 Hour	---	---	0.075 ppm	Attainment
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 mg/m^3	Attainment*	---	---
	24 Hour	50 mg/m^3	Attainment*	150 mg/m^3	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 mg/m^3	Attainment	12.0 mg/m^3	Attainment
	24 Hour	---	---	35 mg/m^3	Attainment
Lead	3-Month Rolling Average	---	---	0.15 mg/m^3	Attainment
Hydrogen Sulfide	1 Hour	0.03 ppm/ 42 $\mu g/m^3$	Unclassified	---	---
Sulfates	24 Hour	25 mg/m^3	Attainment	---	---
Vinyl Chloride	24 Hour	0.01 ppm/ 26 $\mu g/m^3$	Attainment	---	---

NOTES:

* Although Shasta County is in attainment of State PM_{10} standards, the rest of the Air Basin in non-attainment of State PM_{10} standards; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; --- = no applicable standard; PM_{10} = particulates of 10 microns or less; $PM_{2.5}$ = particulates of 2.5 microns or less.

SOURCES: CARB, 2016, 2019b; USEPA, 2020.

California's Diesel Risk Reduction Plan / Diesel Fuel Regulations

As part of California's Diesel Risk Reduction Plan, CARB has passed numerous regulations to reduce diesel emissions from vehicles and equipment that are already in use. Combining these retrofit regulations with new engine standards for diesel fueled vehicles and equipment, CARB intends to reduce DPM emissions by 85 percent from year 2000 levels by 2020. California Diesel Fuel Regulations (13 Cal. Code Regs. §§2281–2285; 17 Cal. Code Regs. §93114) provide standards for diesel motor vehicle fuel and non-vehicular diesel fuel.

CARB also has adopted regulations for 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 (13 Cal. Code Regs. §2485). This restriction does not apply when vehicles remain motionless during traffic or

when vehicles are queuing. Off-road equipment regulations adopted by CARB require that all engines shall not idle for longer than 5 minutes (13 Cal. Code Regs. §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. The Diesel Risk Reduction Plan and diesel fuel regulations are applicable because the Project would generate diesel fuel exhaust emissions during construction.

Local

Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan

The air districts for the counties of Shasta, Tehama, Butte, Glenn, Colusa, Sutter, and Yuba have established the Northern Sacramento Valley Planning Area (NSVPA). The NSVPA air districts were designated as non-attainment for the ozone CAAQS and have jointly prepared an air quality attainment plan to attain the ozone CAAQS standard by the earliest practicable date. The NSVPA air districts jointly prepared the original 1991 Air Quality Attainment Plan, and have since prepared triennial updates to the plan. The latest update is referred to as the 2018 Triennial Air Quality Attainment Plan (2018 Plan). The 2018 Plan includes an assessment of progress towards achieving the control measure commitments in the previous plan, a summary of ozone data, emission reductions for measures committed to in the previous plan, updated control measure commitments, and updated growth rates. The NSVPA air districts also administer several grant programs that achieve emission reductions in addition to stationary and area-wide control measures. These incentive programs are voluntary and often target mobile sources, of which comprise the majority of the NO_x emission inventory, yet the districts have no regulatory authority over. There are no control measures or grant programs that would be directly applicable to the Project (SVAQEEP, 2018).

Shasta County General Plan

The Air Quality Element of the Shasta County General Plan includes the following policies designed to reduce air pollutant emissions in the County (Shasta County, 2004):

> **Policy AQ-1e:** The County shall require new air pollution point sources such as, but not limited to, industrial, manufacturing, and processing facilities to be located an adequate distance from residential areas and other sensitive receptors.
>
> **Policy AQ-2a:** The County will cooperate with the AQMD, CARB, and the Regional Transportation Planning Agency in implementing programs designed to comply with provisions of Federal and State Clean Air Acts and the County's Air Quality Attainment Plan.
>
> **Policy AQ-2b:** The County will work to accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the unincorporated portions of Shasta County.
>
> **Policy AQ-2c:** Land use decisions, where feasible, should contribute to the improvement of air quality. New projects shall be required to reduce their respective air quality impacts to below levels of significance, or proceed as indicated in Policy AQ-2e.

Policy AQ-2d: Shasta County shall ensure that air quality impacts identified during CEQA review are: (1) consistently and fairly mitigated, and (2) mitigation measures are feasible.

Policy AQ-2e: Shasta County will cooperate with the AQMD in assuring that new projects with stationary sources of emissions of non-attainment pollutants or their precursors that exceed 25 tons per year shall provide appropriate emission offsets. A comparable program which offsets indirect emissions of these pollutants exceeding 25 tons per year from development projects shall also be utilized to mitigate air pollution impacts. An Environmental Impact Report will be required for all projects that have unmitigated emissions of non-attainment pollutants exceeding 25 tons per year.

Policy AQ-2f: Shasta County shall require appropriate Standard Mitigation Measures and Best Available Mitigation Measures on all discretionary land use applications as recommended by the AQMD in order to mitigate both direct and indirect emissions of non-attainment pollutants.

Policy AQ-2g: Significance thresholds as proposed by the AQMD for emissions shall be utilized when appropriate for: (1) ROG and NO_x, both of which are precursors of ozone, and (2) PM_{10} in determining mitigation of air quality impacts.

Policy AQ-2h: Shasta County shall evaluate AQMD data annually to determine if the air quality impacts of development projects that may be insignificant by themselves are cumulatively significant.

Policy AQ-4b: The County's development standards shall require the paving of roads as a part of new development permits to the extent necessary to meet access and air quality objectives. These requirements shall be designed to help mitigate potentially significant adverse air quality impacts created by particulate emissions on both an individual and cumulative basis.

Shasta County AQMD Rules

The Shasta County AQMD enforces the following rules that may be applicable to the Project to limit the generation of air pollutants in Shasta County:

Rule 3:2: Specific Air Contaminants. This rule establishes limits to the amount of pollutants that may be discharged into the atmosphere.

Rule 3:16: Fugitive, Indirect, or Non-Traditional Sources. This rule established conditions upon any source, including sources of construction-related fugitive dust, to mitigate the emissions from such sources to below a level of significance or to a point that such emissions no longer constitute a violation of the California Health & Safety Code Section 41700 and/or Section 41701.

Rule 3:28: Stationary Internal Combustion Engines: The provisions of this rule apply to any gaseous, diesel, or any other liquid-fueled stationary internal combustion engine within the boundaries of the AQMD. The emissions limits identified by this rule are not applicable to emergency standby engines as approved by the Air Pollution Control Officer (APCO); however, the rule does require that testing and maintenance for emergency generators be limited to no more than 100 hours per year.

Rule 3:31: Architectural Coatings. This rule limits the quantity of volatile organic compounds (VOCs)[1] in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within Shasta County.

Rule 3:32: Adhesives and Sealants. This rule limits the emission of VOCs from adhesives and sealants and associated primers, and from related surface preparation solvents, cleanup solvents, and strippers.

3.3.2 Significance Criteria

CEQA Guidelines Appendix G Section III identifies considerations relating to air quality. See Section 3.1.4, *Environmental Considerations Unaffected by the Project or Not Present in the Project Area*, as it relates to the County's analysis of the potential impacts of this Project to some of the air quality considerations suggested in CEQA Guidelines Appendix G. Otherwise, for purposes of this analysis, a project would result in a significant impact to air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) 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;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Appendix G Checklist (Section III, *Air Quality*) states that the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the determinations for the above criteria. The AQMD has established air pollution emissions criteria for determining the significance of an impact during project construction and operation, and these thresholds have been used to evaluate the impacts of the Project on air quality. The AQMD requests that lead agencies apply standard mitigation measures and best available mitigation measures to the project as listed in the General Plan Air Quality Element. The standard mitigation measures are applied to all projects, while the list of best available mitigation measures are reviewed by the planning agency staff for consideration of a specific project. The County General Plan does not include construction-related air quality mitigation measures; however, the AQMD has recommended standard mitigation measures for the Project (AQMD, 2018). As described in **Table 3.3-3**, Shasta County has two levels of emission thresholds that are used to determine the appropriate level of required best available mitigation measures.

If the Project's emissions are greater than the Level A thresholds but less than Level B thresholds, appropriate mitigation should be implemented and the impact would be less than significant. If emissions exceed the Level B thresholds after the application of mitigation measures, then the Project would be considered to have a significant air quality impact.

[1] For the purposes of this analysis, volatile organic gases (VOCs) and reactive organic gases (ROG) are equivalent.

TABLE 3.3-3
SHASTA COUNTY EMISSIONS THRESHOLDS (POUNDS/DAY)

Significance Threshold Levels		NO_x	PM_{10}
A	25	25	80
B	137	137	137

NOTES:
ROG = reactive organic gases; NO_x = nitrogen oxides; PM_{10} = Particulate matter less than or equal to 10 microns in diameter.

SOURCE: AQMD, 2003a

3.3.3 Direct and Indirect Effects

3.3.3.1 Approach to Analysis

Shasta County is classified as a non-attainment area for the State ozone standards; and although the County is in attainment of State PM_{10} standards, the rest of the Air Basin in non-attainment of State PM_{10} standards. Therefore, the AQMD has adopted CEQA thresholds of significance for ROG, NO_x, and PM_{10} for both short-term construction and long-term project operations as identified in Table 4.3-3, above. The AQMD has determined that an exceedance of the Level B threshold for either NO_x or ROG or both of these precursors indicates that a project would cumulatively jeopardize attainment of ozone standards and that an exceedance of the Level B threshold for PM_{10} indicates that a project would cumulatively jeopardize attainment of PM_{10} standards. An exceedance of the ozone and/or PM_{10} standards would result in a significant adverse impact on air quality.

Criteria pollutant emissions from construction equipment, vehicle, and helicopter exhaust and generation of particulate matter in the form of fugitive dust are the primary concerns in evaluating the short-term (i.e., construction, decommissioning, and site reclamation) air quality impacts of the Project. Short-term Project activities that would result in air quality impacts include: timber removal and grubbing, grading and access road work; concrete batch plant activities; turbine, transformer, substation, and O&M building foundation work; turbine and transformer installation; substation and O&M building installation; installation of the underground and overhead collector systems; connection with PG&E infrastructure; and installation of the substation aggregate and security fencing. While long-term impacts associated with criteria pollutants were also evaluated, these would not be significant since emission-related activities associated with Project operations and maintenance would be limited to commuting workers trips, crane-related maintenance activities, and periodic emergency generator testing.

Exhaust pollutants would be emitted during construction, decommissioning, and site reclamation activities from a variety of construction and earth-moving equipment, including motor-driven construction equipment, a helicopter, construction vehicles, and workers' vehicles. Fugitive dust would be generated by ground disturbing activities (e.g., site grading and foundation excavation), as well as from heavy truck travel on paved and unpaved roads, concrete batch plant activities, and helicopter landings and takeoffs.

3.3.3.2 Direct and Indirect Effects of the Project

a) Whether the Project would conflict with or obstruct implementation of the applicable air quality plan.

Impact 3.3-1: Construction, decommissioning, and site reclamation activities would generate pollutant emissions that could conflict or obstruct implementation of the applicable air quality plan. (*Less than Significant with Mitigation Incorporated*)

The Project would be under the jurisdiction of the AQMD. The AQMD has partnered with air districts from other counties, including Tehama, Butte, Glenn, Colusa, Sutter, and Yuba to form the NSVPA. The NSVPA's most recently prepared air quality attainment plan is the 2018 Plan to attain the ozone CAAQS standards. Construction, decommission, and site reclamation activities of the Project would be short-term and conducted in compliance with applicable federal, state, and local requirements. Project construction, decommissioning, and site reclamation activities have the potential to generate temporary ozone precursor emissions through the use of heavy-duty construction equipment, such as excavators and graders, through the use of a helicopter, and through vehicle trips generated from worker trips and haul trucks traveling to and from the Project Site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction, decommissioning, and site reclamation air quality impacts considers each of these potential sources (see Impact 3.3-2).

To determine if a project would conflict with or obstruct implementation of the applicable air quality plan, lead agencies must demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related) upon which the air quality plan is based. The Project would result in an increase in short-term employment compared to existing conditions. Being relatively small in number (approximately 400 workers per day) and temporary in nature, construction jobs under the Project construction, decommissioning, and site reclamation phases would not conflict with the long-term employment projections upon which the 2018 Plan is based. There are no control measures or grant programs that would be directly applicable to the Project; however, as described under Impact 3.3-2, the Project would result in a significant impact associated with construction, decommissioning, and site reclamation emissions of NO_x, a precursor to ozone. Therefore, although the Project would not directly conflict with implementation of the 2018 Plan measures or grant programs, it could result in a violation of an ozone air quality standard, which would not be consistent with the intent of the 2018 Plan. With implementation of Mitigation Measures 3.3-1a (Tier 4 Final Emission Standards for Off-road Construction Equipment) and 3.3-1b (Idling Restrictions and Fuel Use), NO_x emissions would be reduced to less than the applicable Level B significance threshold and would not have a substantial effect on the regional and localized air quality in the Air Basin, and it would not conflict or obstruct implementation of the 2018 Plan. This impact would be reduced to **less than significant**.

Long-term operation of the Project would result in insignificant ozone precursor emissions from worker automobile trips, maintenance with cranes, and emergency generator testing. Exhaust emissions from these trips, cranes, and testing would be less than significant (see Impact 3.3-3).

Furthermore, operations of the Project would be consistent with the applicable growth projections and control strategies used in the development of the 2018 Plan and would not jeopardize attainment of the air quality levels identified in the 2018 Plan because it would not be considered growth inducing (see Section 3.1.4.11, *Population and Housing, Growth Inducing*). For these reasons, long-term operations of the Project would not conflict with or obstruct the implementation of the 2018 Plan. No impact would result from the proposed operation and maintenance activities.

Mitigation Measure 3.3-1a: Tier 4 Final Emission Standards for Off-road Construction Equipment.

The Applicant (and/or its construction contractor[s]) shall require that all diesel-fueled off-road construction equipment of more than 50 horsepower used at the Project Site during construction, decommissioning, and/or reclamation activities meet USEPA Tier 4 Final emission standards. A compliance log shall be maintained by the Applicant and made available to the Shasta County Department of Resource Management upon request.

Mitigation Measure 3.3-1b: Idling Restrictions and Fuel Use.

To ensure that idling time for on road vehicles with a gross vehicular weight rating of 10,000 pounds or greater does not exceed the five-minute limit established in Section 2485 of Title 13 California Code of Regulations, and that idling time for off-road engines does not exceed the five-minute limit established in Title 13 California Code of Regulations Section 2449(d)(3), the Applicant and/or its construction contractor(s) shall prepare and implement a written idling policy and distribute it to all equipment operators. Clear signage of these requirements shall be provided for construction workers at all access points to construction areas.

The Applicant shall use CARB-certified alternative fueled (compressed natural gas [CNG], liquid propane gas [LPG], electric motors, or other CARB certified off-road technologies) engines in construction equipment where feasible.

Significance after Mitigation: Less than significant.

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b) Whether the Project would 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.

Construction of the Project would generate emissions of criteria air pollutants over a construction period of up to 21 months (two years with no construction in January through March); however, during this period there would be no construction during January through March due to winter conditions. Exhaust emissions would result from construction equipment and machinery, a helicopter, as well as from vehicular traffic generated by construction activities. Fugitive dust emissions would result from entrained particulates that become airborne from vehicles traveling on unpaved roadway surfaces at the site and paved roadway surfaces off-site, concrete batch plant activities, helicopter landings and takeoffs, and earthwork activities, including site grading and foundation excavation. Emission levels for the various construction activities would vary with the type of equipment, duration of use, operation schedules, and size of the construction labor force.

As part of the County's Use Permit application process, the Applicant provided equipment assumptions for the construction phases that would occur during each of the 2 years of construction, including the types of construction equipment that would be required, the amounts of each type, overall duration of equipment operator daily work hours, workdays per week, and total number of workdays. Based on the overall duration of equipment operator daily work hours (i.e., 10 hours), it is estimated that each piece of equipment, including the helicopter, would operate up to 8 hours per workday, to account for breaks, lunch hour, refueling, etc., with the exception of for cranes and boom lifts, which are assumed to operate up to 4 hours per day.

In addition, the Applicant prepared a traffic study (**Appendix H**, *Transportation*) that the County independently reviewed and determined to be suitable for reliance in combination with other sources of data to inform this analysis. The traffic study identifies total construction-related vehicle miles travelled (VMT) that would be associated with commuting workers as well as haul truck trips that would be required to deliver equipment and materials to the Project Site (Westwood, 2020). The trip lengths were estimated based on origins from Port of Stockton (270 miles), Redding (50 miles), Burney (20 miles), and the small towns east of the Project Site (10 miles). Subsequent to the preparation of the traffic study, the Applicant provided additional trips data for the proposed timber removal and grubbing activities. The VMT values identified in the traffic study and provided by the Applicant were doubled to reflect one-way trips, and then were used to generate worker and haul truck trip and mileage rates for each of the construction phases during the 2 years of construction.

As shown in Section 3.14, *Transportation*, Table 3.14-5, all roadway segments along Highway 299 in the vicinity of the Project Site entrances would continue to operate at an acceptable level of service (LOS) according to California Department of Transportation and Shasta County standards (LOS C or better) with the addition of Project construction traffic; therefore, secondary impacts from increased vehicle emissions due to delays resulting from traffic controls and lane closures would not be expected.

It should be noted that the trips from the Port of Stockton for the turbine-related deliveries would pass through seven air district jurisdictions, including the AQMD, Tehama County Air Pollution Control District (TCAPCD), Glenn County Air Pollution Control District (GCAPCD), Colusa County Air Pollution Control District (CCAPCD), Yolo-Solano Air Quality Management District (YSAQMD), Sacramento Metropolitan Air Quality Management District (SMAQMD), and San Joaquin Valley Air Pollution Control District (SJVAPCD). The pollutant emissions associated with these trips were allocated according to the relevant air districts, and compared to the applicable jurisdiction's significance criteria.

The Project emissions were estimated by the EIR preparers (identified in Chapter 5, *Report Preparation*) using the California Emissions Estimator Model (CalEEMod) version 2013.3.2. This version of CalEEMod calculates the construction equipment exhaust emissions based on CARB's OFFROAD2011 model emission and load factors, and calculates fugitive dust, including from ground disturbance and paved and unpaved road vehicle travel, using factors from USEPA's AP-42, *Compilation of Air Emission Factors*, and other sources. To estimate on-road mobile exhaust emissions, CalEEMod version 2013.3.2 uses vehicle emission factors from an outdated

version of CARB's Emfac model (2014); therefore, the CalEEMod "off-site" vehicle emissions estimates were not used in this analysis, and the Project on-road vehicle exhaust emissions were estimated outside of CalEEMod using emissions factors obtained from the latest version of the Emfac model, released in 2017. Helicopter emissions that would be associated with conductor stringing for the overhead collection system and transmission line connection were estimated manually using emissions factors obtained from the Swiss Federal Office of Civil Aviation (FOCA) (2015).[2] For all the air pollutant emissions assumptions and calculations, see Appendix B.

Construction-related fugitive dust emissions were estimated using the CalEEMod model. For the purposes of this analysis, it is assumed that all grading and access road work would occur over a period of 160 workdays during the first year of construction. These grading activities would disturb an estimated 1,384 acres. Excavation activities for installation of the turbine foundations are assumed to result in handling of 256,000 cubic yards of excavated material. These excavation activities would happen over a 70-day period and would also occur during the first year of construction, partially overlapping with the grading activities. With regard to vehicle travel on unpaved roads, it is assumed that workers would park at the O&M building site or at one of the various laydown/staging areas at the site. The O&M building site is approximately 0.5 mile from the paved highway and the various laydown/staging areas are estimated to average 6 miles from the highway, which represents the approximate center of the Project Site. Assuming equal amounts of workers would park at the O&M building site and at the various laydown/staging sites, it is assumed that each worker trip would result in an average of 3.25 miles of unpaved road travel. For haul truck trips that would be required for timber removal and grubbing (80 workdays during first year of construction), grading and access work (160 workdays during first year of construction), concrete deliveries (70 workdays during first year of construction), turbine and transformer installation (100 workdays during second year of construction), substation and O&M building installation (160 workdays during second year of construction), and aggregate and the security fence installation (15 workdays during second year of construction), it is assumed that each trip would require an average of 6 miles of unpaved road travel from the paved highway.

Two scenarios were used to estimate emissions that would be associated with the Project's use of approximately 37,000 cubic yards of concrete. One scenario assumed the concrete would be trucked to the site via 3,805 truck deliveries from Redding, and the other assumed that the concrete would be batched as part of the Project at several plants onsite. Fugitive dust emissions that would be associated with the concrete batch plants were estimated using emission factors from USEPA's AP-42, Section 11.12, *Concrete Batching* (USEPA, 2012), and the exhaust emissions that would be associated with equipment used to run the batch plants were estimated using the CalEEMod model. Although the onsite concrete batch plants would generate slightly higher exhaust emissions than trucking the concrete to the site, the fugitive dust emissions that would be associated with unpaved road travel from trucking the concrete to the site would be substantially greater than the fugitive dust emissions that would be associated with batching the

[2] FOCA emission factors are one of the main sources for helicopter emission factors used in CEQA reviews. The Federal Aviation Administration maintains the Aviation Environmental Design Tool (AEDT), which is used by the U.S. government to consider the interdependencies between aircraft-related fuel burn, noise, and emissions; however, the AEDT database is incomplete with regard to helicopter emission factors.

concrete onsite. Therefore, for a conservative analysis, it is assumed that the concrete would be trucked to the site from Redding.

According to the Applicant, the Project would be completed in the following phases: timber removal and grubbing, grading and access road work; concrete batch plant activities; turbine, transformer, substation, and O&M building foundations; turbine and transformer installation; substation and O&M building installation; underground collector system; overhead collection systems; the transmission line connection; and substation aggregate and security fencing. To estimate peak daily Project construction emissions, the construction phases that could overlap in schedule, i.e., occur simultaneously, were identified to estimate the combined total estimated peak daily emissions. Based on the Applicant's identified proposed construction phases, concurrent construction activities for each Project component that would emit the greatest amount of daily emissions during the first and second year of construction would be as follows.

First Year of Construction:

- *Timber Removal and Grubbing; and*
- *Grading and Access Road Work.*

Second Year of Construction:

- *Turbine and Transformer Installation*;
- *Substation and O&M Building Installation*;
- *Underground Collector System*; and
- *Overhead Collection Systems*.

Table 3.3-4, *Unmitigated Project Peak Daily Construction Emissions*, presents the estimated peak daily construction emissions that would be associated with the Project. These emissions would be dispersed throughout the study area at the various Project component sites. As shown in the table, the maximum peak daily construction emission would occur during the first year of construction, and would primarily be associated with grading and access road work for exhaust emissions and timber removal and grubbing for fugitive dust. For information on the types and amounts of construction equipment that would be used to construct the Project, refer to Table 2-2, *Construction Equipment List*, in Chapter 2. It is anticipated that the peak daily emissions that would be associated with decommissioning and site reclamation activities for the Project would be similar to the emissions estimated for the construction of the Project because similar construction equipment would likely be required for those activities. Therefore, this impact analysis is applicable to both Project construction, decommissioning, and site reclamation.

Turbine and transformer installation vehicle trip emissions presented in Table 3.3-4 represent only the portion of the trips that would occur within Shasta County AQMD's jurisdiction. The emissions associated with the portion of those trips that would be generated in the other six air district jurisdictions, including the TCAPCD, GCAPCD, CCAPCD, YSAQMD, SMAQMD, and SJVAPCD, have been evaluated and are presented in Table 3.3-6 (see the Impact 3.3-2d discussion, below).

TABLE 3.3-4
PROJECT PEAK DAILY CONSTRUCTION EMISSIONS WITHIN THE AQMD JURISDICTION

Phase	Source	ROG	NO_x	PM_{10}			$PM_{2.5}$		
				Exh.	Dust	Total	Exh.	Dust	Total
Peak Construction Emissions - First Year (pounds/day)									
Timber Removal and Grubbing	Equipment	7	62	2	0	2	2	0	2
	Vehicles	4	52	1	1,739	1,740	0	174	174
Grading and Access Road Work	Equipment	21	208	9	45	54	8	21	29
	Vehicles	4	43	2	1,062	1,064	1	107	108
Total		**35**	**365**	**14**	**2,846**	**2,860**	**12**	**302**	**313**
Peak Construction Emissions - Second Year (pounds/day									
Turbine and Transformer Installation	Equipment	6	67	3	0	3	3	0	3
	Vehicles**	1	39	1	527	528	1	55	55
Substation and O&M Building Installation	Equipment	1	10	0	0	0	0	0	0
	Vehicles	1	3	1	595	596	0	60	61
Underground Collector System	Equipment	3	32	2	6	8	2	3	5
	Vehicles	0	0	0	179	179	0	18	18
Overhead Collection System	Equipment	3	34	2	0	2	1	0	1
	Vehicles	0	0	0	179	179	0	18	18
	Helicopter	13	19	1	10	10	1	1	1
Total		**29**	**205**	**9**	**1,497**	**1,506**	**8**	**154**	**162**
Level A Significance Thresholds		**25**	**25**	**--**	**--**	**80**	**--**	**--**	**--**
Level B Significance Thresholds		**137**	**137**	**--**	**--**	**137**	**--**	**--**	**--**

NOTES: Emissions amounts may not add perfectly due to rounding error.

* For a conservative analysis, it is assumed that the concrete would be trucked to the site from Redding, therefore the emissions that would be associated with batching the concrete onsite (equipment row) have been netted out of the total emission values.

** Turbine and transformer installation vehicle emissions represent only the portion of the trips that would occur within Shasta County AQMD's jurisdiction.

SOURCE: Appendix B

Impact 3.3-2a: Construction, decommissioning, and site reclamation activities would generate ROG emissions that could result in a cumulatively considerable net increase of ozone, for which the Project region is non-attainment of State ambient air quality standards. (*Less-than-Significant Impact*)

The AQMD has two thresholds: Level A and Level B. An exceedance of the Level B threshold for either NOx or ROG (or both of these precursors) indicates that a project would cumulatively jeopardize attainment of ozone standards, and so result in a significant impact. An exceedance of the Level A threshold merits further consideration, but would not be considered to be a significant adverse CEQA impact. The estimated ROG emissions that would be generated within the AQMD (as presented in Table 3.3-4) show that the Project's mass emissions would not exceed the Level B threshold. Therefore, ROG emissions generated by the Project within the AQMD would not be expected to result in a cumulatively considerable net increase in regional ozone emissions. Construction, decommissioning, and site reclamation impacts associated with the generation of ROG emissions would therefore be **less than significant**.

The AQMD recommends that projects with emissions greater than the Level A thresholds, but less than Level B thresholds, include measures to further reduce impacts. As noted, the Project's ROG emissions would not result in a significant impact. Nonetheless, the implementation of Mitigation Measures 3.3-1a and 3.3-1b (which are recommended to reduce significant impacts associated with NO_x emissions pursuant to Impact 3.3-1, above), would also reduce peak ROG emissions to less than 25 pounds per day (see Appendix B).

Table 3.3-5, *Mitigated Project Peak Daily Construction Emissions*, presents the estimated peak daily construction emissions that would be associated with the Project with implementation of Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-2c.

TABLE 3.3-5
MITIGATED PROJECT PEAK DAILY CONSTRUCTION EMISSIONS WITHIN THE AQMD JURISDICTION

Phase	Source	ROG	NO_x	PM_{10}			$PM_{2.5}$		
				Exh.	Dust	Total	Exh.	Dust	Total
Peak Construction Emissions - First Year (pounds/day)									
Timber Removal and Grubbing	Equipment	2	8	0	0	0	0	0	0
	Vehicles	4	52	1	280	281	0	28	29
Grading and Access Road Work	Equipment	4	17	1	20	21	1	9	10
	Vehicles	4	43	2	175	177	1	8	9
Total		**13**	**120**	**4**	**475**	**479**	**2**	**45**	**48**
Peak Construction Emissions - Second Year (pounds/day)									
Turbine and Transformer Installation	Equipment	1	6	0	0	0	0	0	0
	Vehicles**	2	39	1	61	62	1	8	9
Substation and O&M Building Installation	Equipment	0	3	0	0	0	0	0	0
	Vehicles	1	3	1	63	63	0	7	7
Underground Collector System	Equipment	1	7	0	3	3	0	1	2
	Vehicles	0	0	0	18	18	0	2	2
Overhead Collection System	Equipment	1	8	0	0	0	0	0	0
	Vehicles	0	0	0	18	18	0	2	2
	Helicopter	13	19	1	10	10	1	1	1
Total		**18**	**85**	**3**	**172**	**175**	**2**	**21**	**23**
Level A Significance Thresholds		**25**	**25**	**--**	**--**	**80**	**--**	**--**	**--**
Level B Significance Thresholds		**137**	**137**	**--**	**--**	**137**	**--**	**--**	**--**

NOTES: Emissions amounts may not add perfectly due to rounding error.

* For a conservative analysis, it is assumed that the concrete would be trucked to the site from Redding, therefore the emissions that would be associated with batching the concrete onsite (equipment row) have been netted out of the total emission values.

** Turbine and transformer installation vehicle emissions represent only the portion of the trips that would occur within Shasta County AQMD's jurisdiction.

SOURCE: Appendix B

Impact 3.3-2b: Construction, decommissioning, and site reclamation activities would generate NO_x emissions that could result in a cumulatively considerable net increase of ozone, for which the Project region is non-attainment of State ambient air quality standards. (*Less than Significant with Mitigation Incorporated*)

As shown in Table 3.3-4, total peak daily emissions of NOx would be as high as 292 pounds, which would exceed the Level B significance threshold, resulting in a significant impact. If all off-road construction equipment that would operate at the site were required to be Tier 4 compliant, the total peak daily construction emissions of NOx would be reduced to 120 pounds, less than the significance threshold (see Appendix B). As shown in Table 3.3-5, implementation of Mitigation Measures 3.3-1a (Tier 4 Final Emission Standards for Off-road Construction Equipment) and 3.3-1b (Idling Restrictions and Fuel Use) would reduce maximum construction-, decommissioning-, and site reclamation-related emissions of NOx to less than the 137 pounds-per-day significance threshold. The maximum daily emission would be reduced as a result of the Applicant/construction contractor(s) using off-road construction equipment that would meet USEPA's most stringent emissions standards for NOx (i.e., Tier 4). Therefore, the impact associated with the generation of NOx emissions to result in a cumulatively considerable net increase in regional ozone emissions would be less than significant with mitigation incorporated.

> **Mitigation:** Implement Mitigation Measures 3.3-1a (Tier 4 Final Emission Standards for Off-road Construction Equipment) and 3.3-1b (Idling Restrictions and Fuel Use)
>
> **Significance after Mitigation:** Less than significant.

Impact 3.3-2c: Construction, decommissioning, and site reclamation activities would generate PM_{10} emissions that would result in a cumulatively considerable net increase of PM_{10}, which the Project region is non-attainment of State ambient air quality standards. (*Significant and Unavoidable*)

As shown in Table 3.3-4, total emissions of PM_{10} would exceed the Level B significance threshold, resulting in a significant impact. Mitigation Measure 3.3-2c (Fugitive Dust Controls; see below), would require the Applicant to implement feasible fugitive dust controls. Implementation of Mitigation Measure 3.3-2c would reduce fugitive dust emissions associated with travel on unpaved surfaces by 84 percent and associated with ground disturbance by 55 percent (South Coast AQMD, 2007), but as shown in Table 3.3-5, peak daily emissions would continue to exceed the significance threshold at 479 pounds (see Appendix B); hence, the impact relative to the potential for the Project to generate emissions that would result in a cumulatively considerable net increase in regional PM_{10} emissions would be **significant and unavoidable**.

> **Mitigation Measure 3.3-2c: Fugitive Dust Controls.**
>
> The following AQMD Standard Mitigation Measures for fugitive dust shall be implemented during the construction, decommissioning, and reclamation phases by the Applicant and/or its contractor(s):
>
> - Options to open burning of vegetative material on the Project Site shall be used by the Applicant unless otherwise deemed infeasible by the AQMD. Examples of suitable options are chipping, mulching, and conversion to biomass fuel.

- The Applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely and effective manner during all phases of Project development and construction.
- All material excavated, stockpiled, or graded should be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.
- All areas (including unpaved roads) with vehicle traffic should be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- All onsite vehicles should be limited to a speed of 15 miles per hour on unpaved roads.
- All land clearing, grading, earth moving, and excavation activities on the Project Site shall be suspended when winds are expected to exceed 20 miles per hour.
- All inactive portions of the development site should be seeded and watered until suitable grass cover is established.
- The Applicant shall be responsible for applying (according to manufacturer 's specifications) nontoxic soil stabilizers to all inactive construction areas (previously graded areas that remain inactive for 96 hours) in accordance with the Shasta County Grading Ordinance.
- All trucks hauling dirt, sand, soil, or other loose material should be covered or should maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision shall be enforced by local law enforcement agencies.
- All material transported off site shall be either sufficiently watered or securely covered to prevent a public nuisance.
- During initial grading, earth moving, or site preparation, the Applicant shall be required to construct a paved (or dust palliative-treated) apron, at least 100 feet in length, onto the Project Site from the adjacent paved Highway 299.
- Paved streets adjacent to the development site should be swept or washed at the end of each day to remove excessive accumulations of silt and/or mud that may have accumulated as a result of activities on the development site.
- Adjacent paved streets shall be swept at the end of each day if substantial volumes of soil materials have been carried onto adjacent public paved roads from the Project Site.
- Wheel washers shall be installed where project vehicles and/or equipment enter and/or exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip.
- Prior to final occupancy, the applicant shall reestablish ground cover on the construction site through seeding and watering in accordance with the Shasta County Grading Ordinance.

Significance after Mitigation: Significant and unavoidable.

Impact 3.3-2d: Construction, decommissioning, and site reclamation activities would not result in cumulatively considerable net increases of criteria pollutants in other air district jurisdictions. (*Less-than-Significant Impact*)

As discussed previously, haul trips required from the Port of Stockton for the turbine-related deliveries to the Project Site would pass through six other air district jurisdictions in addition to the AQMD, including TCAPCD, GCAPCD, CCAPCD, YSAQMD, SMAQMD, and SJVAPCD. The estimated pollutant emissions associated with those trips that would be generated within each of air district jurisdictions are presented in **Table 3.3-6** and are compared to the jurisdiction's significance criteria, where criteria have been adopted. As shown in the table, the emissions would exceed none of the significance thresholds. Therefore, emissions generated by the Project in the other air district jurisdictions would not result in a cumulatively considerable net increase in regional emissions. Construction, decommissioning, and site reclamation impacts associated with net increases in criteria pollutant emissions in other air district jurisdictions would therefore be **less than significant**.

TABLE 3.3-6
PROJECT PEAK DAILY CONSTRUCTION EMISSIONS WITHIN OTHER AIR DISTRICT JURISDICTIONS

Air District	Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
TCAPCD	Vehicles	1	22	1	<1
	Significance Thresholds[1]	25	25	80	--
GCAPCD	Vehicles	1	16	<1	<1
	Significance Thresholds	--	--	--	--
CCAPCD	Vehicles	1	18	1	<1
	Significance Thresholds	--	--	--	--
YSAQMD	Vehicles	2	42	1	1
	Significance Thresholds[2]	-	-	80	--
SMAQMD	Vehicles	<1	8	<1	<1
	Significance Thresholds	-	85	80	82
SJVAPCD	Vehicles	<1	2	<1	<1
	Significance Thresholds[3]	-	-	-	-
Significant Impacts?		**No**	**No**	**No**	**No**

NOTES: GCAPMD and CCAPCD do not have posted adopted significance thresholds.

1 Represents Level A thresholds, same as those applicable to the AQMD.

2 YSAQMD significance thresholds for ROG and NO_x are 10 tons per year. On an annual basis, Project-related ROG and NO_x emissions that would be generated in the YSAQMD jurisdiction would be less than 1 ton per year and 2 tons per year, respectively, which would be less than significant.

3 SJVAPCD significance thresholds for ROG and NO_x are 10 tons per year and for PM_{10} and $PM_{2.5}$ are 15 tons per year. On an annual basis, Project-related ROG, NO_x, PM_{10}, and $PM_{2.5}$ emissions that would be generated in the SJVAPCD jurisdiction would be less than 0.1 ton per year, which would be less than significant.

SOURCES: YSAQMD, 2007; SMAQMD, 2015; SJVAPCD, 2015

Impact 3.3-3: Operation of the Project would generate pollutant emissions that would not result in a cumulatively considerable net increase of criteria pollutants, which the Project region is non-attainment of State ambient air quality standards. (*Less Than Significant Impact*)

Long-term operation and maintenance of the Project would result in air pollutant emissions from 24 daily 50-mile worker automobile trips, two cranes operating up to 4 hours per day and two mowers operating 4 hours per day for maintenance work, a propane heater at the O&M building, and periodic testing and maintenance of a 268 horsepower emergency generator for up to 2 hours per day and 100 hours per year. The worker automobile trip exhaust emissions were estimated using 2023 emissions factors obtained from the Emfac2017 model, and worker trip dust emissions from unpaved road travel and the crane and emergency generator emissions were estimated using the CalEEMod version 2013.3.2 model. CalEEMod is not able to estimate propane heater emissions, but those emissions would not be considerable. **Table 3.3-7** presents the estimated daily operation and maintenance emissions that would be associated with the Project (see Appendix B for the emission calculations).

TABLE 3.3-7
PROJECT PEAK DAILY OPERATION AND MAINTENANCE EMISSIONS

	Daily Operation and Maintenance Emissions (pounds)							
			PM_{10}			$PM_{2.5}$		
Project Component	**ROG**	**NO_x**	**Exh.**	**Dust**	**Total**	**Exh.**	**Dust**	**Total**
Worker Vehicle Emissions	0.14	0.23	0.12	54.48	54.60	0.03	5.58	5.63
Maintenance Work with Cranes and Mowers	0.53	5.51	0.27	0.00	0.27	0.25	0.00	0.25
Emergency Generator Testing and Maintenance	0.88	2.46	0.13	0.00	0.13	0.13	0.00	0.13
Total (pounds per day)	**1.55**	**8.19**	**0.52**	**54.48**	**55.00**	**0.43**	**5.58**	**6.01**
Level A Threshold (pounds per day)	25	25		--	80	--	--	--
Threshold Exceeded?	No	No	--	--	No	--	--	--

SOURCE: Appendix B

These operation and maintenance emissions would not exceed the AQMD Level A significance thresholds. Therefore, emissions generated by operation and maintenance the Project would not be expected to result in a cumulatively considerable net increase in pollutant emissions. Operation and maintenance impacts associated with the generation of criteria pollutant and precursor emissions would therefore be **less than significant**.

Project Contribution to Cumulative Health Effects

No single project by itself would be sufficient in size to result in regional non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts, and while its emissions may be individually limited, it could be cumulatively considerable when taken in combination with past, present, and future development projects. The project-level thresholds for criteria air pollutants are based on levels at

which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, if a project leads to a significant impact individually, the project would also be considered to contribute significantly to the cumulative impact.

A CEQA air quality analysis of criteria air pollutants is based on significance thresholds that were set at emission levels tied to the region's attainment status (SJVAPCD, 2014). The CEQA significance thresholds are emission levels above which stationary air pollutant sources permitted by the AQMD (typically, industrial facilities, refineries, and the like) must offset their emissions through purchase of emissions "offsets" from other facilities that have reduced emissions, either through installation of emissions controls or removal of an emissions source. Such offset levels allow for regional development while keeping the cumulative effects of new sources at a level that would not impede attainment of the NAAQS. Therefore, a CEQA air quality analysis of criteria air pollutants is essentially an analysis of regional, cumulative air quality impacts and a given project's contribution to those impacts.

The health effects that are associated with emissions of criteria pollutants are described in the *Criteria Air Pollutants* discussion in Section 3.3.1.2, *Environmental Setting*. As described in the *Criteria Air Pollutants* discussion in Section 3.3.1.3, *Regulatory Setting*, compliance with the ambient air quality standards indicates that regional air quality can be considered protective of public health. The ambient air quality standards are expressed in terms of the concentrations of individual pollutants within the air. With certain exceptions, given current air quality modeling tools, calculating an individual project's effect on ambient pollutant concentrations does not yield information that is accurate enough to be useful. In addition, for projects that produce emissions for two years or less, this analysis is not meaningful because quantities of emissions are too small to have a statistically significant effect on health outcomes. Exceptions include CO, which is directly emitted from tailpipes and the concentration of which can be calculated proximate to locations such as high-volume intersections, where CO concentrations are typically highest. However, CO emissions and concentrations have decreased dramatically in urban areas of California in the nearly 45 years since introduction of the catalytic converter. Accordingly, modeling of CO concentrations is seldom required. Another exception is fine particulate matter. Concentrations of $PM_{2.5}$ exhaust can be used as a proxy for diesel particulate matter in a health risk assessment, which is a separate type of air quality analysis from the criteria pollutants discussed herein (see Impact 3.3-4).

Ozone, however, is a regional pollutant for which project-specific concentration modeling is not reliable given current modeling limitations. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to convert specific mass emissions levels (i.e., weight) of NO_x or ROGs emitted in a particular area (or by a particular project) to a particular concentration of ozone in that area (SJVAPCD, 2014). Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone (South Coast AQMD, 2014; SJVAPCD, 2014). Furthermore, available models are designed to determine regional, population-wide health impacts, from long-term emission sources and cannot accurately quantify ozone-

related health impacts caused by NO_x or ROG emissions from the local level, and in particular not at the level of an individual project's construction emissions that last for less than 2 years.

As a result, project-level mass (weight) emission thresholds have been established for ozone precursors (NO_x and ROG) and PM_{10} precisely because it is not possible to readily convert mass emissions at the project-level to regional pollutant concentrations. The AQMD's thresholds for ROG, NO_x, and PM_{10} are tied to the offset requirements for ozone precursors based on the fact that the Air Basin is not in attainment with the State ozone and PM_{10} standards and therefore such an approach is appropriate to identify potential to cause further deterioration of ambient air quality, which would be a regionally cumulative significant impact. As explained above, attainment can be considered protective of public health, thus providing a strong link between a mass emission threshold and avoidance of health effects. These thresholds provide a connection between a mass emission threshold and avoidance of health effects.

As discussed above, the Project would not exceed the project-level Level B significance thresholds for construction, decommissioning, or site reclamation ROG or NO_x emissions, with the implementation of mitigation (Tier 4 engines) to reduce the construction emissions impact of NO_x to less than significant, and the Project would not exceed the Level A significance thresholds for operations. Therefore, the contribution of the Project to the cumulative, regional air quality impacts related to ozone precursors would not be considerable, and the Project's contribution to any cumulative air quality impacts would not be significant. As explained above, because the significance thresholds are linked to the avoidance of health effects, the Project would not be anticipated to result in an adverse health effect with respect to emissions of ozone precursors.

With respect to construction emissions of PM_{10} and $PM_{2.5}$, the vast majority (i.e., 99 percent PM_{10} and 94 percent $PM_{2.5}$) of the emissions that would be generated by construction of the Project would be in the form of fugitive dust due to vehicle travel on unpaved surfaces and ground disturbing activities on the Project Site. The scientific evidence of health effects from particulate matter suggest that combustion-derived components of particulate matter are the strongest drivers for adverse health effects, and that particulate matter from combustion sources are the greatest contributors to particulate matter-related mortality (SMAQMD, 2020). $PM_{2.5}$ has a greater effect on health compared to PM_{10} because these particles are small enough to be able to penetrate to the deepest parts of the lungs.

Although Shasta County does not have mass significance thresholds for $PM_{2.5}$, Project construction emissions would exceed the Shasta County AQMD Level B significance threshold for PM_{10} even with implementation of mitigation, resulting in a significant cumulative impact to regional air quality, which may result in adverse health effects from particulate matter, such as aggravating asthma and bronchitis, on local sensitive receptors in the vicinity of the Project Site and haul routes.

A quantitative health impact assessment (HIA) has not been prepared because the results of an HIA would be unlikely to reasonably inform decision-makers or members of the public of any causal link between changes in ozone and $PM_{2.5}$ concentrations associated with the Project and any specific individual health impact. While recent studies suggest a correlation between $PM_{2.5}$

concentrations and human health effects, substantial scientific uncertainty remains regarding a clear link between cause and effect. In fact, no studies have validated direct cause and effect from relatively small changes in concentration in localized vicinities. Uncertainty stems from the limitations of epidemiological studies, including inadequate exposure estimates, difficulty in identifying root health cause and effect, and the inability to control for many factors (including lifestyle factors like smoking or exposures to other air pollutants) that could explain the association between $PM_{2.5}$ and adverse health impacts. Further, for both the $PM_{2.5}$ and ozone health effects calculated in an HIA, each of the pollutants may amplify the health impact of the others. Due to these uncertainties, there is a high likelihood that modeled health effects, identified in an HIA, would not be reliably predictive of the actual future health effects of the Project. Thus, while it would be possible to rely on modeling software like BenMAP-CE, AERMOD, and other models, to calculate potential outcomes, the County has not done so based on a determination that the results would not be reasonably informative about the impacts of Project emissions.

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c) Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

Impact 3.3-4: Project activities would generate emissions of toxic air contaminants, potentially exposing sensitive receptors to harmful pollutant concentrations. (*Less Than Significant Impact*)

Diesel particulate matter (DPM) was identified as a TAC by CARB in 1998. DPM is only TAC that would be generated by the Project. Construction of the Project would result in temporary generation of DPM emissions during an up-to 21-month period (two years with no construction in January through March) caused by the use of off-road diesel equipment and from construction material and equipment deliveries and debris hauling using on-road heavy-duty trucks. Long-term sources of DPM emissions associated with the Project would be insignificant and limited to 12 worker vehicle trips per day, operation of two cranes and two mowers for maintenance activities up to 4 hours per day, and periodic testing of the emergency generator during an approximately 40-year period that would commence with issuance of the requested use permit.

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. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on 9-, 30-, and/or 70-year exposure periods when assessing TACs (such as DPM) that have only cancer or chronic non-cancer health effects. However, such health risk assessments should be limited to the duration of the emission-producing activities associated with the project, unless the activities occur for less than six months. Activities that would last more than 2 months, but less than 6 months, are recommended to be evaluated as if they would last for 6 months. The OEHHA does not recommend assessing cancer risk for projects lasting less than 2 months at the maximum exposed individual resident (MEIR) (OEHHA, 2015). In addition, the AQMD approval of permits requires certain evaluation and notification requirements for facilities that would have the potential to emit hazardous air pollutants that would be located

within 1,000 feet of a school (AQMD, 2003b). There are no schools in the vicinity of the Project Site; however, this distance is used here as a screening threshold for nearby residences as to whether a quantitative health risk assessment should be prepared for the Project.

The Project would take up to 21 months to construct. However, the closest residence to any of the work areas on the Project Site are off Sycamore Road, approximately 1,900 feet to a Project Site construction staging area. The closest residence to any of the access roads on the Project Site are along Moose Avenue, at distances as close as approximately 400 feet. It is anticipated that any construction improvements to this section of the access road would take less than 2 months to complete and the associated health risk impact of those improvements would not be adverse because the duration of DPM exposure would be low. Therefore, the health risk from the short-term DPM emissions that would be associated with construction, decommissioning, and site reclamation of the Project would be expected to result in a maximum cancer risk at the nearest residences that would not exceed the maximum individual cancer risk threshold of 10 in one million. This represents a less-than-significant impact relative to exposure of sensitive receptors to substantial pollutant concentrations.

Mitigation: None required.

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d) Whether the Project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact 3.3-5: Project construction, decommissioning, site reclamation, and operation would not create objectionable odors adversely affecting a substantial number of people. (*Less than Significant Impact*)

Project construction, decommissioning, and site reclamation activities would include sources, such as diesel equipment, which could result in the creation of objectionable odors. These activities would be temporary or periodic, and spatially dispersed, and any associated odors would dissipate quickly from the sources. Further, 50 cabin residences are used year-round in the private recreational facility of Moose Camp. Estimating the population of Moose Camp based on the average household size in nearby Burney (i.e., 2.45 people per household as reported by City Data [2020]), any Project odors could impact no more than 123 people. Given relative distances between odor-causing Project elements and the cabins (i.e., as close as approximately 400 feet to Moose Avenue, which would be used as an access route for the Project) and the more than 180,000 people who live in Shasta County (U.S. Census Bureau, 2019), this is a conservative estimate of the potentially affected population. Accordingly, these activities would not affect a substantial number of people that reside in Shasta County. Additionally, odor emissions would be episodic and short-term. Therefore, impacts from odors generated by construction, decommissioning, and site reclamation of the Project would be less than significant.

Mitigation: None required.

3.3.3.3 PG&E Interconnection Infrastructure

As noted in Section 2.4.3, *Project Substation, Switching Station, and Interconnection Facilities*, minor modifications or upgrades to the existing 230 kV line may be required to facilitate the Project's interconnection. Upgrades to PG&E facilities are anticipated to include construction and/or reconfiguration of utility line structures and transmission line circuits involving four to six new transmission poles. If required, these new poles would be located adjacent to the proposed substation and switching station. Daily construction emissions that would be associated with these improvements are expected to occur during the second year of construction and are not anticipated to contribute to the peak daily construction emissions that year since the power line connection phase of the Project is expected to be constructed subsequent to the peak construction period. For emission estimates associated with off-road equipment use, helicopter use, and vehicle trips related to these improvements, refer to the "transmission line connection" emissions described in Appendix B. Operation of the power line connection would not result in the generation of emissions and maintenance of the power line connection would result in negligible emissions associated with periodic inspections. In and of themselves, these improvements would result in less than significant impacts to air quality.

3.3.3.4 Direct and Indirect Effects of Alternatives

Alternative 1: South of SR 299

Alternative 1 would implement the Project exclusively in that portion of the Project Site located south of SR 299; none of the up to seven turbines proposed to the north of SR 299 (turbine numbers A01 through A07) or related infrastructure would be developed. Under Alternative 1, construction activities, including timber harvesting, would generate fewer vehicle trip and equipment emissions than the number estimated for the Project because up to seven fewer turbines and their related infrastructure would not be constructed. Similarly, the decommissioning and site reclamation phase would also generate fewer vehicle trip and equipment emissions than the amounts estimated for the Project, as the number of turbines and their related infrastructure to be developed and size of the area to be reclaimed would be less than what was identified for the Project. However, due to the high levels of peak emissions that would be associated with the Project disclosed in Table 3.3-4, the construction, decommissioning, and site reclamation emissions that would be associated with Alternative 1 also would result in a significant air quality impact with implementation of Mitigation Measures 3.3-1a through 3.3-1b. Operation of Alternative 1 would result in the same less-than-significant air quality impacts as identified for the Project because no reduction in employee trips to or from the Project Site, crane and mower use, propane heater use, or emergency generator testing are anticipated. In sum, although the impacts of Alternative 1 to air quality would be slightly reduced relative to the Project, the impact conclusions would be the same as identified for the Project.

Alternative 2: Increased Setbacks

Under Alternative 2, proposed setbacks would be increased relative to the Project to preclude turbine construction within three times the height of the turbine (i.e., within 2,037 feet) of a residential property line and within 1.5 times the height of the turbine (i.e., within 1,018.5 feet) of State Route 299, any other publicly-maintained public highway or street, and of Supan Road or

Terry Mill Road. Under Alternative 2, construction activities, including timber harvesting, would generate fewer vehicle trip and equipment emissions than the number estimated for the Project because up to four fewer turbines and their related infrastructure would not be constructed. Similarly, the decommissioning and site reclamation phase would also generate fewer vehicle trip and equipment emissions than the amounts estimated for the Project, as the number of turbines and their related infrastructure to be developed and size of the area to be reclaimed would be less than what was identified for the Project. However, due to the high levels of peak emissions that would be associated with the Project disclosed in Table 3.3-4, the construction, decommissioning, and site reclamation emissions that would be associated with Alternative 2 would also result in a significant air quality impact with implementation of Mitigation Measures 3.3-1a and 3.3-1b. Operation of Alternative 2 would result in the same less-than-significant air quality impacts as identified for the Project because no reduction in employee trips to or from the Project Site, crane and mower use, propane heater use, or emergency generator testing are anticipated. In sum, the impacts of Alternative 2 on air quality would be slightly less than the Project, but the impact conclusions would be the same.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed wind project infrastructure would be delivered to the Project Site or constructed, operated and maintained, or decommissioned there. No construction, equipment, or additional vehicle trips would be made to, from, or within the site relative to baseline conditions. Ground clearance would not occur for laydown areas; utility line rights-of-way; roads; or the collector substation, switching station, or O&M facility. The Project Site would continue to be operated as managed forest timberlands. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to air quality.

The Project Site is zoned for timber production. Pursuant to regulations implementing the California Timberland Productivity Act (Government Code §51100 et seq.; 14 Cal. Code Regs. §897[a]), there is a legal presumption that "timber harvesting is expected to and will occur on such lands." The regulations further specify that timber harvesting on such lands "shall not be presumed to have a Significant Adverse Impact on the Environment" (14 Cal. Code Regs. §898). Therefore, the No Project Alternative, including anticipated timber harvesting, is not presumed to result in a significant adverse individual or cumulative effect. CAL FIRE would review any future timber harvesting proposal to evaluate any potential project-specific, site-specific environmental impacts, including to air quality.

3.3.4 Cumulative Analysis

The geographic scope considered for cumulative impacts to air quality is the Sacramento Valley Air Basin and San Joaquin Valley Air Basin.

In developing mass emissions thresholds of significance for criteria air pollutants and ozone precursors, air districts consider the emission levels for which a project's individual emissions

would be cumulatively considerable. Therefore, if a project would exceed the identified construction or operational significance thresholds, its emissions would be cumulatively considerable, and if a project would not exceed the construction or operational significance thresholds, its emissions would not be cumulatively considerable.

The region is non-attainment of ozone and PM_{10} ambient air quality standards; which indicates an existing significant cumulative impact exists. As described in Section 3.3.3.2 (see Impacts 3.3-1, 3.3-1b), implementation of Mitigation Measures 3.3-1a and 3.3-1b would reduce significant ozone impacts of Project-related construction, decommissioning, and site reclamation activities to less than significant; however, implementation of Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-2c would not reduce the significant PM_{10} impacts from construction, decommissioning, and site reclamation activities to a less-than-significant level. Therefore, construction of the Project would result in a cumulatively considerable net increase in PM_{10} and NO_x emissions pre-mitigation, and a cumulatively considerable net increase in PM_{10} emissions post-mitigation, the associated cumulative impact would be significant and unavoidable. All other criteria pollutant emissions, including those that would be generated within the SJVAB (see Impact 3.3.-2d), would be less than the respective significance thresholds and therefore would not be cumulatively considerable and would result in less-than-significant cumulative impacts.

With regard to impacts on sensitive receptors, the total DPM emissions from Project on-site construction equipment that would occur at the Project Site would result in less-than-significant impacts, and would not combine with emissions from other cumulative projects to the extent that a significant cumulative impact would occur because, as identified on Section 3.1.2.1, *Cumulative Scenario*, there are no cumulative projects close enough to the Project Site to interact with those of the Project. The cumulative impact that would be associated with construction, decommissioning, site reclamation, and operation of the Project would be less than significant.

Odor impacts that would be associated with the Project would be limited to combustion of diesel fuels. The impact would be less than significant because construction, decommissioning, and site reclamation activities would be intermittent and spatially dispersed, associated odors would dissipate quickly, and because the number of potentially affected people would be small. There is no existing adverse cumulative condition related to odors to which the Project could contribute. Given the proximity of cumulative projects to the Project Site and the expected duration of sensitive receptor exposure to Project-related diesel fumes, projects in the cumulative scenario would not cause diesel-related odors that would intermingle with those of the Project and, thereby, cause a significant cumulative effect. The cumulative impact would be less than significant.

Long-term operation and maintenance of the Project would not cause emissions that would exceed the operational significance thresholds (see Impact 3.3-3). Therefore, the cumulative impact would be less than significant.

The cumulative impacts of the alternatives would be substantially similar to those of the Project.

3.3.5 References

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