

5

AIR QUALITY

5.1 INTRODUCTION

The Air Quality chapter of the EIR describes the potential impacts of the proposed projects on local and regional air quality. The chapter describes existing air quality, construction-related air quality impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the proposed projects, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts. This chapter is based on the *Placer County General Plan*,¹ the *Placer County General Plan EIR*,² the *Granite Bay Community Plan (GBCP)*,³ the Placer County Air Pollution Control District (PCAPCD)'s *CEQA Air Quality Handbook*,⁴ PCAPCD's *Review of Land Use Projects Under CEQA*,⁵ the *Technical Memorandum* prepared for Whitehawk I (WHI) and the *Technical Memorandum* prepared for Whitehawk II (WHII) by RCH Group,⁶ and technical analysis performed by Raney Planning and Management, Inc.

5.2 EXISTING ENVIRONMENTAL SETTING

The following environmental setting information provides an overview of the existing air quality setting in the proposed project areas. In this section, the climate and topography of the region, ambient air quality standards (AAQS), attainment status for Placer County, current air quality, sources of odors, and sensitive receptors in the vicinity of the proposed projects are discussed.

Air Basin Characteristics

The proposed project sites are located in western Placer County, which falls within the Sacramento Valley Air Basin (SVAB), and are within the jurisdictional boundaries of the PCAPCD. Air flows into the SVAB through the Carquinez Strait, moves across the Delta and carries pollutants from the heavily populated San Francisco Bay Area into the SVAB. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Prevailing winds are from the south and southwest, and as a result of prevailing

¹ Placer County. *Countywide General Plan Policy Document*. August 1994 (updated May 2013).
² Placer County. *Countywide General Plan EIR*. July 1994.
³ Placer County, Planning Services Division. *Granite Bay Community Plan*. February 2012.
⁴ Placer County Air Pollution Control District. *CEQA Air Quality Handbook*. November 21, 2017.
⁵ Placer County Air Pollution Control District. *Review of Land Use Projects Under CEQA*. October 13, 2016.
⁶ RCH Group. *Technical Memorandum: Whitehawk I – Air Quality Pre-Development Meeting Checklist*. April 5, 2016.
RCH Group. *Technical Memorandum: Whitehawk II – Air Quality Pre-Development Meeting Checklist*. April 5, 2016.

winds coming generally from south to southwest, air quality in the area is heavily influenced by mobile and stationary sources of air pollution located upwind in the Sacramento Metropolitan Area.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. During the winter rainy season (November through February) over half the total annual precipitation falls while the average winter temperature is a moderate 49 degrees Fahrenheit. During the summer, daytime temperatures can exceed 100 degrees Fahrenheit. Dense fog occurs mostly in mid-winter and rarely in the summer. Daytime temperatures from April through October average between 60 and 80 degrees Fahrenheit with low humidity. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breach in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass.

Air quality in Placer County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air, preventing vertical dispersion of air contaminants. The presence of an inversion layer results in higher concentrations of pollutants near ground level. Summer inversions are strong and frequent, but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Air quality in the project vicinity is influenced by both local and distant emission sources. Air pollutant sources in the immediate project vicinity include emissions from vehicle traffic on Douglas Boulevard, Sierra College Boulevard, and other nearby roadways. Other, more distant, air pollutant sources in the area include vehicle traffic on Interstate 80 (I-80), State Route (SR) 65, U.S. Highway 50, and area sources such as activities associated with commercial, residential, and industrial land uses.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The ambient air quality standards for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which air quality standards have been established are called “criteria” pollutants. Table 5-1 identifies the major pollutants, characteristics, health effects and typical sources. The federal and California ambient air quality standards (NAAQS and CAAQS, respectively) are summarized in Table 5-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent than the federal standards, particularly for ozone and particulate matter (PM).

A description of each criteria pollutant and its potential health effects is provided in the following section.

**Table 5-1
Summary of Criteria Pollutants**

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive gas produced by the photochemical process involving a chemical reaction between the sun's energy and other pollutant emissions. Often called photochemical smog.	<ul style="list-style-type: none"> • Eye irritation • Wheezing, chest pain, dry throat, headache, or nausea • Aggravated respiratory disease such as emphysema, bronchitis, and asthma 	Combustion sources such as factories, automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless, highly toxic gas that is formed by the incomplete combustion of fuels.	<ul style="list-style-type: none"> • Impairment of oxygen transport in the bloodstream • Impaired vision, reduced alertness, chest pain, and headaches • Can be fatal in the case of very high concentrations 	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	A reddish-brown gas that discolors the air and is formed during combustion of fossil fuels under high temperature and pressure.	<ul style="list-style-type: none"> • Lung irritation and damage • Increased risk of acute and chronic respiratory disease 	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	A colorless, irritating gas with a rotten egg odor formed by combustion of sulfur-containing fossil fuels.	<ul style="list-style-type: none"> • Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease 	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM ₁₀ and PM _{2.5})	A complex mixture of extremely small particles and liquid droplets that can easily pass through the throat and nose and enter the lungs.	<ul style="list-style-type: none"> • Aggravation of chronic respiratory disease • Heart and lung disease • Coughing • Bronchitis • Chronic respiratory disease in children • Irregular heartbeat • Nonfatal heart attacks 	Combustion sources such as automobiles, power generation, industrial processes, and wood burning, as well as from unpaved roads, farming activities, and fugitive windblown dust.
Lead	A metal found naturally in the environment as well as in manufactured products.	<ul style="list-style-type: none"> • Loss of appetite, weakness, apathy, and miscarriage • Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract 	Industrial sources and combustion of leaded aviation gasoline.

Sources:

- California Air Resources Board. *California Ambient Air Quality Standards (CAAQS)*. Available at: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>. Accessed March 2017.
- Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, *Spare the Air website. Air Quality Information for the Sacramento Region*. Available at: <http://www.sparetheair.com/health.cfm?page=healthoverall>. Accessed March 2017.
- California Air Resources Board. *Glossary of Air Pollution Terms*. Available at: <http://www.arb.ca.gov/html/gloss.htm>. Accessed March 2017.

Table 5-2 Ambient Air Quality Standards				
Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
	8 Hour	0.070 ppm	0.070 ppm	
Carbon Monoxide	8 Hour	9 ppm	9 ppm	-
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Mean	0.030 ppm	53 ppb	Same as primary
	1 Hour	0.18 ppm	100 ppb	-
Sulfur Dioxide	24 Hour	0.04 ppm	-	-
	3 Hour	-	-	0.5 ppm
	1 Hour	0.25 ppm	75 ppb	-
Respirable Particulate Matter (PM₁₀)	Annual Mean	20 ug/m ³	-	Same as primary
	24 Hour	50 ug/m ³	150 ug/m ³	
Fine Particulate Matter (PM_{2.5})	Annual Mean	12 ug/m ³	12 ug/m ³	15 ug/m ³
	24 Hour	-	35 ug/m ³	Same as primary
Lead	30 Day Average	1.5 ug/m ³	-	-
	Calendar Quarter	-	1.5 ug/m ³	Same as primary
Sulfates	24 Hour	25 ug/m ³	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.010 ppm	-	-
Visibility Reducing Particles	8 Hour	see note below	-	-

ppm = parts per million
ppb = parts per billion
µg/m³ = micrograms per cubic meter

Note: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: California Air Resources Board. Ambient Air Quality Standards. May 4, 2016. Available at: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed March 2017.

Ozone

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere, ozone is a product of the photochemical process involving the sun's energy, and is a secondary pollutant formed as a result of a complex chemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_x) emissions in the presence of sunlight. As such, unlike other pollutants, ozone is not released directly into the atmosphere from any sources. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. The primary source of ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment.

Ground-level ozone reaches the highest level during the afternoon and early evening hours. High levels occur most often during the summer months. Ground-level ozone is a strong irritant that could cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. Ozone at the Earth's surface causes numerous adverse health effects and is a major component of smog. High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments.

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Reactive Organic Gas

ROG is a reactive chemical gas composed of hydrocarbon compounds typically found in paints and solvents that contributes to the formation of smog and ozone by involvement in atmospheric chemical reactions. A separate health standard does not exist for ROG. However, some compounds that make up ROG are toxic, such as the carcinogen benzene.

Oxides of Nitrogen

NO_x are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that discolors the air and is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of NO_x. NO_x reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO_x emissions are a major component of acid rain. Health effects related to NO_x include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, reduced mental alertness, and death at high concentrations.

Sulfur Dioxide

Sulfur Dioxide (SO₂) is a colorless, irritating gas with a rotten egg odor formed primarily by the combustion of sulfur-containing fossil fuels from mobile sources, such as locomotives, ships,

and off-road diesel equipment. SO₂ is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO_x, suspended sulfur oxide particles contribute to poor visibility. The sulfur oxide particles are also a component of PM₁₀.

Particulate Matter

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health impacts. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller (PM₁₀) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, the particles could affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles (PM_{2.5-10})," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM_{2.5-10} is deposited in the thoracic region of the lungs.
- "Fine particles (PM_{2.5})," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. PM_{2.5} particles could be directly emitted from sources such as forest fires, or could form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very, very small particles (less than 0.1 micrometers in diameter) largely resulting from the combustion of fossil fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of PM_{2.5}, their high surface area, deep lung penetration, and transfer into the bloodstream could result in disproportionate health impacts relative to their mass. UFP is not currently regulated separately but is analyzed as part of PM_{2.5}.

PM₁₀, PM_{2.5-10}, and UFP include primary pollutants, which are emitted directly to the atmosphere, as well as secondary pollutants, which are formed in the atmosphere by chemical reactions among precursors. Generally speaking, PM_{2.5} and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ sources include the same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust. Long-term PM pollution, especially fine particles, could result in significant health problems including, but not limited to, the following: increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing; decreased lung function; aggravated asthma; development of chronic respiratory disease in children; development of chronic bronchitis or obstructive lung disease; irregular heartbeat; heart attacks; and increased blood pressure.

Lead

Lead is a relatively soft and chemically resistant metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, and, thus, essentially persists forever. Lead forms compounds with both organic and inorganic substances. As an air pollutant, lead is present in small particles. Sources of lead emissions in California include a variety of industrial activities. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically. However, because lead was emitted in large amounts from vehicles when leaded gasoline was used, lead is present in many soils (especially urban soils) as a result of airborne dispersion and could become re-suspended into the air.

Because lead is only slowly excreted by the human body, exposures to small amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead above the level of the ambient air quality standard may include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms could include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead also causes cancer.

Sulfates

Sulfates are the fully oxidized ionic form of sulfur and are colorless gases. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. The sulfur is oxidized to SO₂ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard established by CARB is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen Sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces (800 ppm can cause death).

Vinyl Chloride

Vinyl Chloride (C₂H₃Cl, also known as VCM) is a colorless gas that does not occur naturally, but is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Visibility Reducing Particles

Visibility Reducing Particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Car and truck exhaust contains at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Public exposure to TACs can result from emissions from normal operations as well as accidental releases.

Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer include birth defects, neurological damage, and death. Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to criteria air pollutants that have established AAQS. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an AAQS or emission-based threshold.

Naturally Occurring Asbestos

Another concern related to air quality is naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. Sources of asbestos emissions

include: unpaved roads or driveways surfaced with ultramafic rock; construction activities in ultramafic rock deposits; or rock quarrying activities where ultramafic rock is present.

NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California* prepared by the Department of Conservation, the project site is located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.⁷

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status with regard to the federal and/or State Ambient Air Quality Standards (AAQS). The FCAA and CCAA require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State AAQS are not met as “nonattainment areas.” Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The CCAA requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, provide for adoption of “all feasible measures on an expeditious schedule.”

As presented in Table 5-3 under the CCAA, Placer County has been designated nonattainment for the State one-hour ozone, State and federal eight-hour ozone, and State PM₁₀ standards. The County is designated attainment or unclassified for all other AAQS. Due to the nonattainment designations, the PCAPCD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State standards for ozone and particulate matter. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals. Each of the attainment plans currently in effect are discussed in further detail in the Regulatory Context section of this chapter.

Local Air Quality Monitoring

Air quality is monitored by CARB at various locations to determine which air quality standards are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, incentive programs, etc. The nearest local air quality monitoring station to the project sites is the Roseville-N Sunrise Boulevard station, located at 151 North Sunrise Boulevard in Roseville CA, approximately 2.6 miles from the WHI project site and approximately 2.8 miles from the WHII project site. Based on the data available for the Roseville-N Sunrise Boulevard

⁷ Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*. Published 2006.

monitoring station, Table 5-4 presents the number of days that the State and federal AAQS were exceeded for the three-year period from 2014 to 2016.

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1 Hour	Nonattainment	Revoked in 2005
	8 Hour	Nonattainment	Nonattainment
Carbon Monoxide	8 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
Nitrogen Dioxide	Annual Mean	Attainment	Attainment
	1 Hour	Attainment	Attainment
Sulfur Dioxide	Annual Mean	Attainment	-
	24 Hour	Attainment	-
	3 Hour	Attainment	-
	1 Hour	Attainment	-
Respirable Particulate Matter (PM₁₀)	Annual Mean	Nonattainment	-
	24 Hour	Nonattainment	-
Fine Particulate Matter (PM_{2.5})	Annual Mean	Attainment	-
	24 Hour	Attainment	Attainment
Lead	30 Day Average	Attainment	Attainment
	Calendar Quarter	Attainment	Attainment
	Rolling 3-Month Average	Attainment	Attainment
Sulfates	24 Hour	Attainment	-
Hydrogen Sulfide	1 Hour	-	-
Visibility Reducing Particles	8 Hour	-	-

Source: California Air Resources Board. Area Designations Maps / State and National. Published December 2015.

Pollutant	Standard	Days Standard Was Exceeded		
		2014	2015	2016
1-Hour Ozone	State	4	1	5
	Federal	0	0	0
8-Hour Ozone	State	21	6	21
	Federal	19	6	20
24-Hour PM _{2.5}	Federal	0	0	0
24-Hour PM ₁₀	State	0	1	0
	Federal	0	0	0
1-Hour Nitrogen Dioxide	State	0	0	0
	Federal	0	0	0

Source: California Air Resources Board, Aerometric Data Analysis and Management (iADAM) System, <http://www.arb.ca.gov/adam/welcome.html>, accessed March 2018.

Odors

While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable annoyance and distress among the public and can generate citizen complaints to local governments and air districts. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative or formulaic methodologies to determine the presence of a significant odor impact do not exist. Adverse effects of odors on residential areas and other sensitive receptors warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between a receptor and an odor source, and local meteorological conditions.

One of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors, also referred to as a buffer zone or setback. The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when reaching the receptor.

Meteorological conditions also affect the dispersion of odor emissions, which determines the exposure concentration of odiferous compounds at receptors. The predominant wind direction in an area influences which receptors are exposed to the odiferous compounds generated by a nearby source. Receptors located upwind from a large odor source may not be affected due to the produced odiferous compounds being dispersed away from the receptors. Wind speed also influences the degree to which odor emissions are dispersed away from any area.

Odiferous compounds could be generated from a variety of source types including both construction and operational activities. Examples of common land use types that typically generate significant odor impacts include, but are not limited to, wastewater treatment plants; sanitary landfills; composting/green waste facilities; recycling facilities; petroleum refineries; chemical manufacturing plants; painting/coating operations; rendering plants; and food packaging plants. The project sites are not located in the vicinity of any such existing uses.

Although less common, diesel fumes associated with substantial diesel-fueled equipment and heavy-duty trucks, such as from construction activities, freeway traffic, or distribution centers, could be found to be objectionable. The project sites are not located in proximity to any such land uses or activities.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities. Residential developments are located to the north, across Douglas Boulevard, east, south, and west of the project sites. For analysis purposes,

the residences located near the project sites would be considered the closest sensitive receptors to the project sites.

5.3 REGULATORY CONTEXT

Air quality is monitored and regulated through the efforts of various international, federal, state, and local government agencies. Agencies work jointly and individually to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the project area are discussed below.

Federal Regulations

The most prominent federal regulation is the FCAA, which is implemented and enforced by the USEPA.

FCAA and USEPA

The FCAA requires the USEPA to set NAAQS and designate areas with air quality not meeting NAAQS as nonattainment. The USEPA is responsible for enforcement of NAAQS for atmospheric pollutants and regulates emission sources that are under the exclusive authority of the federal government including emissions of GHGs. The USEPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The USEPA has adopted policies consistent with FCAA requirements demanding states to prepare SIPs that demonstrate attainment and maintenance of the NAAQS.

State Regulations

California has adopted a variety of regulations aimed at reducing air pollution emissions. Only the most prominent and applicable California air quality-related legislation are included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the CARB website (<http://www.arb.ca.gov/html/lawsregs.htm>).

CCAA and CARB

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA. The CCAA requires that air quality plans be prepared for areas of the State that have not met the CAAQS for ozone, CO, NO_x, and SO₂. Among other requirements of the CCAA, the plans must include a wide range of implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation controls. The CARB, California's air quality management agency, regulates and oversees the activities of county air pollution control districts and regional air quality management districts. The CARB regulates local air quality indirectly using State

standards and vehicle emission standards, by conducting research activities, and through planning and coordinating activities. In addition, the CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the USEPA. Furthermore, the CARB is charged with developing rules and regulations to cap and reduce GHG emissions.

Air Quality and Land Use Handbook

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook) addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities.⁸ The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (I-405 and I-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day" (CARB 2005).

Importantly, the Introduction section of the CARB Handbook clarifies that the guidelines are strictly advisory, recognizing that: "[I]and use decisions are a local government responsibility. The Air Resources Board Handbook is advisory and these recommendations do not establish regulatory standards of any kind." CARB recognizes that there may be land use objectives as well as meteorological and other site-specific conditions that need to be considered by a governmental jurisdiction relative to the general recommended setbacks, specifically stating, "[t]hese recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues" (CARB 2005).

Assembly Bill 1807

Assembly Bill (AB) 1807, enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. CARB is responsible for the identification and control of TACs, except pesticide use, which is regulated by the California Department of Pesticide Regulation.

AB 2588

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 TACs, including DPM, and is the primary air contaminant legislation in California. Under the act, local air districts

⁸ California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.

may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

In 2002, the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17, Section 93105, of the California Code of Regulations) went into effect, which requires each air pollution control and air quality management district to implement and enforce the requirements of Section 93105 and propose their own asbestos ATCM as provided in Health and Safety Code section 39666(d).⁹

Senate Bill 656

In 2003, the Legislature passed Senate Bill (SB) 656 to reduce public exposure to PM₁₀ and PM_{2.5} above the State CAAQS. The legislation requires the CARB, in consultation with local air pollution control and air quality management districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air districts to reduce PM₁₀ and PM_{2.5} emissions. The CARB list is based on California rules and regulations existing as of January 1, 2004 and was adopted by CARB in November 2004. Categories addressed by SB 656 include measures for reduction of emissions associated with residential wood combustion and outdoor greenwaste burning, fugitive dust sources such as paved and unpaved roads and construction, combustion sources such as boilers, heaters, and charbroiling, solvents and coatings, and product manufacturing. Some of the measures include, but are not limited to, the following:

- Reduce or eliminate wood-burning devices allowed;
- Prohibit residential open burning;
- Permit and provide performance standards for controlled burns;
- Require water or chemical stabilizers/dust suppressants during grading activities;
- Limit visible dust emissions beyond the project boundary during construction;
- Require paving/curbing of roadway shoulder areas; and
- Require street sweeping.

Under SB 656, each air district is required to prioritize the measures identified by CARB, based on the cost effectiveness of the measures and their effect on public health, air quality, and emission reductions. Per SB 656 requirements, the PCAPCD amended their Rule 225 related to wood-burning appliances to include conditions consistent with SB 656, including such conditions as the prohibition of the installation of any new, permanently installed, indoor or outdoor, uncontrolled wood-burning appliances.

⁹ California Air Resources Board. *2002-07-29 Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations*. June 3, 2015. Available at: <http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm>. Accessed April 2017.

Heavy-Duty Vehicle Idling Emission Reduction Program

On October 20, 2005, CARB approved a regulatory measure to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth equipped diesel trucks.¹⁰ The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. For example, the regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling, or optionally meet a stringent NO_x emission standard. The regulation also requires operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California beginning in 2008. Emission producing alternative technologies such as diesel-fueled auxiliary power systems and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted a regulation to reduce DPM and NO_x emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California.¹¹ Such vehicles are used in construction, mining, and industrial operations. The regulation is designed to reduce harmful emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The idling limits require operators of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to less than five minutes. The idling requirements are specified in Title 13 of the California Code of Regulations.

Local

The most prominent local regulations related to air quality are established by the PCAPCD, the *Placer County General Plan*, and the GBCP.

PCAPCD

The PCAPCD regulates many sources of pollutants in the ambient air and is responsible for implementing certain programs and regulations for controlling air pollutant emissions to improve air quality in order to attain federal and State AAQS.

¹⁰ California Air Resources Board. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. October 24, 2013. Available at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>. Accessed August 2016.

¹¹ California Air Resources Board. *In-Use Off-Road Diesel Vehicle Regulation*. December 10, 2014. Available at: <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>. Accessed August 2016.

Air Quality Attainment Plan

As a part of the SVAB federal ozone nonattainment area, the PCAPCD works with the other local air districts within the Sacramento area to develop a regional air quality management plan under the FCAA requirement. The regional air quality management plan is called the SIP which describes and demonstrates how Placer County, as well as the Sacramento nonattainment area, would attain the required federal ozone standard by the proposed attainment deadline. In accordance with the requirements of the FCAA, the PCAPCD, along with the other air districts in the region, prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan), adopted by the PCAPCD on February 19, 2009. The CARB determined that the Ozone Attainment Plan met federal Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP. Revisions to the Placer County portion of the SIP or Ozone Attainment Plan were made and adopted on August 11, 2011. In addition, an update to the plan, *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan), has been prepared and was adopted on September 26, 2013, and approved by CARB as a revision to the SIP on November 21, 2013. The 2013 Ozone Attainment Plan was approved by the USEPA on January 9, 2015.

The 2013 Ozone Attainment Plan demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the FCAA requirements, including the NAAQS. It should be noted that in addition to strengthening the 8-hour ozone NAAQS, the USEPA also strengthened the secondary 8-hour ozone NAAQS, making the secondary standard identical to the primary standard. The SVAB remains classified as a severe nonattainment area for ozone with an attainment deadline of 2027. On October 26, 2015, the USEPA released a final implementation rule for the revised NAAQS for ozone to address the requirements for reasonable further progress, modeling and attainment demonstrations, and reasonably available control measures (RACM) and reasonably available control technology (RACT). On April 30, 2018, the USEPA published designations for areas in attainment/unclassifiable for the 2015 ozone standards. The USEPA identified the portions of Placer County within the SVAB as nonattainment for the 2015 ozone standards.¹² Due to the designation of the SVAB as nonattainment for the 2015 standards, the PCAPCD will work with other regional air districts to prepare a new ozone SIP for the revised 2015 standards.

PCAPCD Rules and Regulations

All projects under the jurisdiction of the PCAPCD are required to comply with all applicable PCAPCD rules and regulations. In addition, PCAPCD permit requirements apply to many commercial activities (e.g., print shops, drycleaners, gasoline stations), and other miscellaneous activities (e.g., demolition of buildings containing asbestos). The proposed projects are required to comply with all applicable PCAPCD rules and regulations, which shall be noted on County-approved construction plans. The PCAPCD regulations and rules include, but are not limited to, the following:

¹² U.S. Environmental Protection Agency. *Nonattainment and Unclassifiable Area Designations for the 2015 Ozone Standards*. April 30, 2018.

Regulation 2 – Prohibitions

Regulation 2 is comprised of prohibitory rules that are written to achieve emission reductions from specific source categories. The rules are applicable to existing sources as well as new sources. Examples of prohibitory rules include Rule 202 related to visible emissions, Rule 217 related to asphalt paving materials, Rule 218 related to architectural coatings, Rule 228 related to fugitive dust, Rule 205 related to nuisance, and Rule 225 related to wood-burning appliances.

Rule 228 sets forth requirements necessary to comply with the asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17, Section 93105, of the California Code of Regulations), as discussed above.

Regulation 5 – Permits

Regulation 5 is intended to provide an orderly procedure for the review of new sources, and modification and operation of existing sources, of air pollution through the issuance of permits. Regulation 5 primarily deals with permitting major emission sources and includes, but is not limited to, rules such as General Permit Requirements (Rule 501), New Source Review (Rule 502), Emission Statement (Rule 503), Emission Reduction Credits (Rule 504), and Toxics New Source Review (Rule 513).

Placer County General Plan

The following goals and policies related to air quality are from the *Placer County General Plan*:

Air Quality – General

Goal 6.F To protect and improve air quality in Placer County.

Policy 6.F.2 The County shall develop mitigation measures to minimize stationary source and area source emissions.

Policy 6.F.3 The County shall support the Placer County Air Pollution Control District (PCAPCD) in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.

Policy 6.F.4 The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.

Policy 6.F.5 The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and

transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

- Policy 6.F.6 The County shall require project-level environment review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.
- Policy 6.F.7 The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.
- Policy 6.F.8 The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.
- Policy 6.F.9 In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.
- Policy 6.F.10 The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).
- Policy 6.F.11 The County shall apply the buffer standards described in Part I of this Policy Document and meteorological analyses to provide separation between possible emission/nuisance sources (such as industrial and commercial uses) and residential uses.

Air Quality – Transportation/Circulation

- Goal 6.G To integrate air quality planning with the land use and transportation planning process.
- Policy 6.G.1 The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

- Policy 6.G.2 The County shall continue and, where appropriate, expand the use of synchronized traffic signals on roadways susceptible to emissions improvement through approach control.

Transportation – Non-Motorized Transportation

- Goal 3.D To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation.

- Policy 3.D.5 The County shall continue to require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.

- Policy 3.D.7 The County shall, where appropriate, require new development to provide sheltered public transit stops, with turnouts.

- Policy 3.D.9 Consider Complete Streets infrastructure and design features in street design and construction to create safe and inviting environments for all users consistent with the land uses to be served.

Granite Bay Community Plan

The relevant goals and policies from the GBCP related to air quality are presented below.

- Goal 5.15.2 Integrate land use, transportation, and air quality planning to make the most efficient use of public resources and to create a healthier and more livable environment for the Granite Bay area.

- Goal 5.15.3 Reduce emission impacts to “sensitive receptors” (children, the elderly, persons afflicted with health issues) living in the Granite Bay Community Plan area.

- Policy 5.15.1 Ensure that project air quality impacts are quantified using analysis methods and significance thresholds as recommended by the PCAPCD.

- Policy 5.15.2 Ensure that projects which may have potential air quality impacts mitigate any of its anticipated emissions which exceed allowable emissions as established by the PCAPCD.

- Policy 5.15.3 Ensure all air quality mitigation measures are feasible, implementable, and effective for individual projects and on a community-wide basis.

Policy 5.15.4 Encourage innovative mitigation measures and approaches to reduce air quality impacts by coordinating with the PCAPCD, project applicants, and other interested parties.

Policy 5.15.5 Work with the PCAPCD to reduce particulate emissions from project construction, grading, excavation, demolition and other sources.

Policy 5.15.6 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

5.4 IMPACTS AND MITIGATION MEASURES

The standards of significance and methodology used to analyze and determine the proposed projects' potential project-specific impacts related to air quality are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on the recommendations of PCAPCD and in coordination with the County, consistent with Appendix G of the CEQA Guidelines and the County's Initial Study Checklist, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the proposed projects would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (i.e., exceed the PCAPCD thresholds of significance listed in Table 5-5);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations (including localized CO concentrations and TAC emissions); or
- Create objectionable odors affecting a substantial number of people.

Criteria Pollutant Emissions and TAC Emissions

In order to evaluate air pollutant emissions from development projects, the PCAPCD established significance thresholds for emissions of ROG, NO_x, and PM₁₀. The significance thresholds, expressed in pounds per day (lbs/day), listed in Table 5-5, are the PCAPCD's recommended thresholds of significance for use in the evaluation of air quality impacts associated with proposed development projects. Therefore, if the proposed projects' emissions, either

individually or considered together, exceed the pollutant thresholds presented in Table 5-5, the projects could have a significant effect on air quality, the attainment of federal and State AAQS, and could conflict with or obstruct implementation of the applicable air quality plan, either individually or when considered together.

Table 5-5 PCAPCD Thresholds of Significance		
Pollutant	Construction Threshold (lbs/day)	Operational/Cumulative Threshold (lbs/day)
ROG	82	55
NO _x	82	55
PM ₁₀	82	82
<i>Source: Placer County Air Pollution Control District. Placer County Air Pollution Control District Policy. Review of Land Use Projects Under CEQA. October 13, 2016.</i>		

Additionally, the PCAPCD has developed screening criteria for determining whether a project would cause substantial localized CO emissions at a given intersection. If operation of the proposed projects would result in CO emissions from vehicle operations in excess of 550 lbs/day and either of the following conditions are met, the projects could potentially result in substantial concentrations of localized CO and further analysis would be required:

- Degrade the peak hour level of service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity from an acceptable LOS (i.e., LOS A, B, C, or D) to an unacceptable LOS (i.e., LOS E or F); or
- Substantially worsen (i.e., increase delay by 10 seconds or more when project-generated traffic is included) an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity.

For TAC emissions, if a project would introduce a new source of TACs or a new sensitive receptor near an existing source of TACs that would not meet the CARB’s minimum recommended setback, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

GHG Emissions

The incremental contribution towards a cumulative increase in criteria pollutants (i.e., the third bullet point in the list above) from the projects when considered individually or together, as well as impacts related to GHG emissions and global climate change, are addressed in Chapter 17, Cumulative Impacts and Other CEQA Sections, of this EIR.

Method of Analysis

The analysis protocol and guidance provided by the PCAPCD’s *CEQA Air Quality Handbook* was used to analyze the proposed projects’ air quality impacts, including screening criteria and pollutant thresholds of significance.

The analysis of construction and operational emissions described below includes the evaluation of the impacts of the two independent projects, WHI and WHII, as well as the impacts of the two projects combined. The short-term construction, and long-term operational air quality emissions for each project individually, as well as both projects together, were estimated using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 - a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions from land use projects. The model applies inherent default values for various land uses, including trip generation rates based on the ITE Manual, vehicle mix, trip length, average speed, etc. However, where project-specific data was available, such data was input into the model as discussed in further depth below.

The CalEEMod emissions software was used to model the potential emissions from the operation of the proposed projects as well as all on-site construction activity related to implementation of the proposed projects. As discussed in further depth below, implementation of the WHI project, the WHII project, and the combined projects would require off-site construction including utility work and roadway improvements. Per the PCAPCD's guidance,¹³ construction of roadway improvements and linear utility work was completed through the use of the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Roadway Construction Emissions Model (RoadMod).¹⁴

All operational and construction related modeling results are included in Appendix C of this EIR.

Construction Emissions

The WHI project would include the development of 24 single-family dwelling units while the WHII project would include the development of 55 single-family dwelling units. Emissions modeling was conducted for three construction scenarios: construction of WHI alone, construction of WHII alone, and construction of WHI and WHII together. Information used during the emissions modeling for the foregoing scenarios is presented below.

It should be noted that compliance with PCAPCD Rule 228 related to fugitive dust is not inherently included in the model, and adjustments were not applied to the model, as the full extent of reductions due to implementation of the requirements of Rule 228 cannot be captured using the model. Thus, the construction-related emissions presented in this analysis represent a conservative estimate, as the proposed projects would be required to implement Rule 228, which would result in a reduction of construction-related emissions from what is presented in this analysis.

WHI

The following assumptions were applied to the construction modeling completed for on-site work related to the implementation of the WHI project:

¹³ Placer County Air Pollution Control District. *CEQA Air Quality Handbook* [pg. 29]. November 21, 2017.

¹⁴ Sacramento Metropolitan Air Quality Management District. *Roadway Construction Emissions Model*. May 2016.

- WHI would not include any demolition activity;
- Approximately 22,280 cubic yards (CY) of material would be imported to the WHI site during site grading; and
- A total of approximately 8.55 acres would be disturbed during the grading phase.

In addition to the foregoing assumptions related to on-site construction activity, the WHI project would involve off-site construction activity. Off-site construction activity related to implementation of the WHI project includes extension of the existing water main within Douglas Boulevard by 250 feet, from the existing terminus of the water main to the eastern property line of the WHI project site.

WHII

The following assumptions were applied to the construction modeling completed for on-site work related to the implementation of the WHII project:

- WHII would not include any demolition activity;
- Approximately 63,760 CY of material would be imported to the WHII site during site grading; and
- A total of approximately 20.71 acres would be disturbed during the grading phase.

In addition to the foregoing assumptions related to on-site construction activity, the WHII project would involve off-site construction activity. In the absence of the WHI project, the WHII project would include extension of the existing water main within Douglas Boulevard by 1,700 feet, from the existing terminus of the water main to the eastern property line of the WHII project site. Furthermore, implementation of the WHII project would include mitigation improvements to the median within Douglas Boulevard at the intersection of Seeno Avenue to accommodate the extension of the westbound left-turn lane.

WHI and WHII

The following assumptions were applied to the construction modeling completed for on-site work related to the combined implementation of the WHI and WHII projects:

- Demolition activity would not be required;
- A total of approximately 86,040 CY of material would be imported to the project sites during site grading; and
- A total of approximately 30.22 acres would be disturbed during the grading phase.

In addition to the foregoing assumptions related to on-site construction activity, the combined WHI and WHII projects would involve off-site construction activity. Off-site construction activity would include the extension of the existing water main within Douglas Boulevard by 1,700 feet, from the existing terminus of the water main to the eastern property line of the WHII project site.

Similar to implementation of the WHII project alone, implementation of the combined WHI and WHII projects would include mitigation improvements to the median within Douglas Boulevard at the intersection of Seeno Avenue to accommodate an extension to the westbound left-turn lane. Additionally, implementation of the combined WHI and WHII projects would trigger mitigation to widen Douglas Boulevard near the intersections of Cavitt Stallman Road and Sierra College Boulevard.

The results of emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod and RoadMod modeling results are included in Appendix C to this EIR.

Operational Emissions

Similar to construction emissions, operational emissions were calculated under three scenarios: operation of WHI only, operation of WHII only, and operation of WHI and WHII combined. All operational emissions estimations were conducted using CalEEMod. Based on the construction information provided by the project applicant, the proposed projects are anticipated to be fully operational by 2021. The modeling performed for the proposed projects included compliance with PCAPCD rules and regulations (i.e., low-VOC [volatile organic compounds] paints and low-VOC cleaning supplies), as well as with the 2016 California Building Energy Efficiency Standards Code. Based on information provided by the applicant, CalEEMod was adjusted to reflect that all of the proposed residences would be constructed without fireplaces or hearths under implementation of the separate or combined projects. All buildings within the State of California are required to comply with the mandatory standards within the 2016 California Building Energy Efficiency Standards Code. The proposed projects' compliance with such would be verified as part of the County's building approval review process. Fehr and Peers provided project-specific trip generation rates and vehicle miles travelled (VMT) rates, which were applied to the project modeling.¹⁵

As discussed in further depth in the Method of Analysis section of Chapter 17, Cumulative Impacts and Other CEQA Sections, of this EIR, considering the California Energy Commission's recent approval of updates to the 2019 California Building Standards Code, the modeling for operations of the proposed projects separately and combined included a conservative estimate that five percent of operational energy for the projects would be provided by on-site renewable energy systems.

The results of emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod modeling results are included in Appendix C to this EIR.

¹⁵ Fehr and Peers. *Final Transportation Impact Study for Whitehawk I & II*. September 2018.
Dave Robinson, Principal, Fehr and Peers. Personal communication [email] with Nick Pappani, Vice President, Raney Planning and Management. October 15, 2018.

Project-Specific Impacts and Mitigation Measures

As discussed in Chapter 3, Project Description, of this EIR, although the County has elected to evaluate both the WHI and WHII projects in a single EIR, it is reasonable to consider WHI and WHII as separate projects under the independent utility test, given that each proposal has independent utility and is not necessary for the other to proceed. As such, the following discussion analyzes the potential impacts of the WHI and WHII projects separately. In addition, each impact statement includes an analysis of the combined effects of the two projects.

5-1 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction. Based on the analysis below, even with implementation of mitigation, the impact is significant and unavoidable.

During construction of WHI only, WHII only, or WHI and WHII combined, various activities would result in the emission of criteria pollutants. Construction-related emissions would be generated from construction equipment, vegetation clearing, construction workers' commute, and construction material hauling for the entire construction period. In particular, both projects would involve considerable soil hauling to the site, which would occur during the grading phase of each project. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment and heavy-duty trucks that would generate emissions of criteria pollutants. Construction activities related to the implementation of WHI only, WHII only, or WHI and WHII combined also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed projects would generate emissions of criteria air pollutants, including ROG, NO_x, and PM₁₀, intermittently within the sites and in the vicinity of the sites, until all construction has been completed, construction is a potential concern, as the proposed projects are located in a nonattainment area for ozone and PM.

The construction modeling assumptions are described in the Method of Analysis section above. As discussed in the Method of Analysis section, the modeling assumed that both on-site and off-site construction would occur during implementation of the proposed projects. The estimated emissions for the separate construction of WHI and WHII are presented below as well as the estimated emissions from the combined construction of WHI and WHII.

WHI

The estimated unmitigated maximum construction-related emissions for the WHI project are presented in Table 5-6. As shown in the table, the short-term emissions related to construction of WHI only would be below the applicable thresholds of significance for all criteria pollutants. As such, implementation of WHI only would result in a less-than-significant impact related to the violation of air quality standards.

Table 5-6					
Maximum Unmitigated Construction-Related Emissions for WHI					
Pollutant	On-Site Construction Emissions (lbs/day)	Off-Site Construction Emissions (lbs/day)	Total Construction Emissions	PCAPCD Significance Threshold (lbs/day)	Exceeds Threshold?
ROG	5.76	2.44	8.20	82.0	NO
NO _x	56.25	18.18	74.43	82.0	NO
PM ₁₀	20.61	1.67	22.28	82.0	NO

Source: CalEEMod, October 2018; RoadMod, May and October 2018 (see Appendix C).

WHII

The estimated unmitigated maximum construction-related emissions for the WHII project are presented in Table 5-7. As shown in the table, the project’s associated short-term construction-related emissions of ROG and PM₁₀ would be below the thresholds of significance. However, emissions of NO_x would exceed the recommended threshold of significance. Because emissions of NO_x during construction of WHII only would exceed the PCAPCD’s threshold of significance, the construction of the WHII project could be considered to contribute substantially to the region’s nonattainment status for ozone resulting in a significant impact.

Table 5-7					
Maximum Unmitigated Construction-Related Emissions for WHII					
Pollutant	On-Site Construction Emissions (lbs/day)	Off-Site Construction Emissions (lbs/day)	Total Construction Emissions	PCAPCD Significance Threshold (lbs/day)	Exceeds Threshold?
ROG	8.39	6.62	15.01	82.0	NO
NO _x	134.30	62.48	196.78	82.0	YES
PM ₁₀	20.61	7.41	28.02	82.0	NO

Source: CalEEMod, October 2018; RoadMod, May and October 2018 (see Appendix C).

WHI and WHII

The estimated unmitigated maximum construction-related emissions for implementation of both the WHI and WHII projects are presented in Table 5-8. As shown in the table, the short-term construction-related emissions of ROG and PM₁₀ associated with implementation of both WHI and WHII would be below the thresholds of significance. However, emissions of NO_x would exceed the recommended threshold of significance. Because emissions of NO_x during construction of WHI and WHII would exceed the PCAPCD’s threshold of significance, the combined construction of the WHI and WHII project could be considered to contribute substantially to the region’s nonattainment status for ozone resulting in a significant impact.

Pollutant	On-Site Construction Emissions (lbs/day)	Off-Site Construction Emissions (lbs/day)	Total Construction Emissions	PCAPCD Significance Threshold (lbs/day)	Exceeds Threshold?
ROG	8.12	12.93	21.05	82.0	NO
NO _x	162.15	131.56	293.71	82.0	YES
PM ₁₀	20.61	34.32	54.93	82.0	NO

Source: CalEEMod, October 2018; RoadMod, May and October 2018 (see Appendix C).

PCAPCD Regulations and County Conditions of Approval

It should be noted that construction activity related to the implementation of WHI only, WHII only, or the WHI and WHII combined, would be regulated by the PCAPCD’s Rule 228 and standard Placer County conditions of approval. Rule 228 requires projects involving earth-disturbing activities to implement various dust control measures, such as minimizing track-out on to paved public roadways, limiting vehicle travel on unpaved surfaces to 15 miles per hour, and stabilization of storage piles and disturbed areas. Furthermore, standard Placer County conditions of approval for proposed projects within the County include various requirements that would result in the further reduction of emissions due to implementation of the proposed project. The County’s standard conditions of approval are listed below:

- The applicant shall submit a Dust Control Plan to the Placer County Air Pollution Control District (APCD) when the project area to be disturbed is greater than one acre. The Dust Control Plan shall be submitted to the APCD a minimum of 21 days before construction activity is scheduled to commence. The Dust Control Plan can be submitted online via a fill-in form:
<http://www.placerair.org/dustcontrolrequirements/dustcontrolform>.
- With submittal of the Dust Control Plan, the contractor shall submit to the APCD a comprehensive equipment inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours. If any new equipment is added after submission of the inventory, the contractor shall notify the APCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the APCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
- With submittal of the equipment inventory, the contractor shall provide a written calculation to the APCD for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project-wide fleet-average of 20 percent NO_x reduction and 45 percent particulate reduction comparing with the statewide fleet averages. Acceptable options for reducing emissions may include the use of late model engines, low-emission diesel

products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The following link shall be used to calculate compliance with this condition and shall be submitted to the APCD as described above: <http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation> (click on the current “Construction Mitigation Tool” spreadsheet under Step 1).

Moreover, the County’s standard conditions of approval require Grading Plans for the proposed project to include the following notes:

- Prior to construction activity, a Dust Control Plan shall be submitted to the Placer County Air Pollution Control District (APCD) when the project area to be disturbed is greater than one acre. The Dust Control Plan can be submitted online via the fill-in form:
<http://www.placerair.org/dustcontrolrequirements/dustcontrolform>.
- Construction equipment exhaust emissions shall not exceed the APCD Rule 202 Visible Emissions limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by the APCD to cease operations, and the equipment must be repaired within 72 hours.
- Dry mechanical sweeping is prohibited. Watering of a construction site shall be carried out to mitigate visible emissions. (Based on APCD Rule 228 / Section 301).
- The contractor shall not discharge into the atmosphere volatile organic compounds caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance unless such manufacture or use complies with the provisions of Rule 217 Cutback and Emulsified Asphalt Paving Materials.
- The contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.
- During construction, open burning of removed vegetation is only allowed under APCD Rule 304 Land Development Smoke Management. A Placer County Air Pollution Control District permit could be issued for land development burning, if the vegetation removed is for residential development purposes from the property of a single or two family dwelling or when the applicant has provided a demonstration as per Section 400 of the Rule that there is no practical alternative to burning and that the Air Pollution Control Officer (APCO) has determined that the demonstration has been made. The APCO may weigh the relative impacts of burning on air quality in requiring a more persuasive demonstration for more densely populated regions for a large proposed burn versus a smaller one. In some cases all of the removed vegetative material shall be either chipped on site or taken to an appropriate recycling site, or if a site is not available, a licensed disposal site. (Based on APCD Rule 304)
- The contractor shall minimize idling time to a maximum of five minutes for all diesel-powered equipment. (Placer County Code Chapter 10, Article 10.14).

- Idling of construction-related equipment and construction-related vehicles shall be minimized within 1,000 feet of any sensitive receptor (i.e., house, hospital, or school).
- The contractor shall suspend all grading operations when fugitive dust exceeds the APCD Rule 228 (Fugitive Dust) limitations. Fugitive dust is not to exceed 40 percent opacity, nor go beyond the property boundary at any time. Lime or other drying agents utilized to dry out wet grading areas shall not exceed APCD Rule 228 limitations. (Based on APCD Rule 228 / section 302 & 401.4)
- The prime contractor shall be responsible for keeping adjacent public thoroughfares clean by keeping dust, silt, mud, dirt and debris from being released or tracked offsite. Wet broom or other methods can be deployed as control and as approved by the individual jurisdiction. (Based on APCD Rule 228 / section 401.5)
- During construction activity, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust or visible emissions from crossing the project boundary line. (Based on APCD Rule 228 / section 401.2)
- The contractor shall apply methods such as surface stabilization, the establishment of a vegetative cover, paving, (or use another method to control dust as approved by the individual jurisdiction) to minimize wind-driven dust.
- The contractor shall apply water or use methods to control dust impacts offsite. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. (Based on APCD Rule 228 / section 304)
- The contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures. (Based on APCD Rule 228 / section 401.6)
- In order to minimize wind driven dust during construction, the prime contractor shall apply methods such as surface stabilization, establishment of a vegetative cover, paving (or use of another method to control dust as approved by Placer County). (Based on APCD Rule 228 / section 402)
- Any device or process that discharges 2 pounds per day or more of air contaminants into the atmosphere, as defined by Health and Safety Code Section 39013, may require an APCD permit. Developers/contractors should contact the APCD prior to construction and obtain any necessary permits prior to the issuance of a Building Permit. (APCD Rule 501)

The proposed projects, whether implemented separately or together, would be required to comply with Rule 228 and the standard County conditions listed above. Compliance with such requirements would likely reduce project-related emissions below the levels presented in Table 5-6 through Table 5-8.

Conclusion

Although emissions from construction-related activities would be reduced through implementation of the foregoing requirements, emissions related to WHI alone, and WHI and WHII combined would be anticipated to continue to exceed the PCAPCD’s thresholds for such emissions. As such, construction of the WHI project alone, as well as the combined construction of the WHI and WHII projects, would continue to be anticipated to result in *significant* impacts.

Mitigation Measure(s)

As noted above, construction of WHI alone would result in air pollutant emissions that would be considered less than significant without the need for mitigation. However, construction of WHII alone and/or construction of both WHI and WHII combined would result in emissions in excess of the PCAPCD’s thresholds. Implementation of the following mitigation measure would reduce construction NO_x and DPM emissions from implementation of WHII alone or WHI and WHII, as shown in Table 5-9. However, the emissions reductions would not be sufficient to reduce emissions below the applicable PCAPCD threshold of 82 lbs/day. Thus, even with implementation of Mitigation Measures 5-1(a) and 5-1(b), the project’s construction related emissions would remain *significant and unavoidable*.

Table 5-9					
Maximum Mitigated Construction-Related Emissions					
Pollutant	On-Site Construction Emissions (lbs/day)	Off-Site Construction Emissions (lbs/day)	Total Construction Emissions	PCAPCD Significance Threshold (lbs/day)	Exceeds Threshold?
WHII					
ROG	8.39	6.62	15.01	82.0	NO
NO _x	107.44	49.98	157.42	82.0	YES
PM ₁₀	11.34	5.93	17.26	82.0	NO
WHI and WHII					
ROG	8.12	12.93	21.05	82.0	NO
NO _x	129.72	105.25	234.97	82.0	YES
PM ₁₀	11.34	27.46	38.79	82.0	NO
<i>Source: CalEEMod, October 2018; RoadMod, October 2018 (see Appendix C).</i>					

It should be noted that the following mitigation would be required in addition to the requirements of the PCAPCD and the County’s standard conditions of approval discussed above.

As discussed above, the analysis of potential impacts resulting from implementation of the combined WHI and WHII projects assumes that both projects would be constructed simultaneously and the resulting construction-related emissions would be additive. Should both projects be implemented, but the construction periods for the projects not occur simultaneously, then construction emissions for the combined projects would occur

separately as presented in Table 5-6 and Table 5-7. Consequently, should both WHI and WHII be implemented, but construction of the proposed projects does not overlap, construction of the WHI project would not require mitigation, while construction of the WHII project would continue to require implementation of Mitigation Measure 5-1(a).

WHII

5-1(a) Prior to approval of any Improvement Plans, the project applicant shall submit to the Placer County Air Pollution Control District (PCAPCD) a comprehensive equipment inventory (e.g., make, model, year, emission rating) of all off-road diesel-powered equipment over 25 horsepower (including owned, leased, and subcontractor equipment). With submittal of the equipment inventory, the contractor shall provide a written calculation to the PCAPCD for approval demonstrating that the heavy-duty off-road vehicles over 25 horsepower to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project-wide fleet-average of 20 percent of NO_x and 45 percent of DPM reduction as compared to California Air Resources Board (CARB) statewide fleet average emissions. Acceptable options for reducing emissions may include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. If any new equipment is added after submission of the inventory, the contractor shall contact the PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman. In addition, all off-road equipment working at the construction site must be maintained in proper working condition according to manufacturer's specifications.

Portable equipment over 50 horsepower must have either a valid District Permit to Operate (PTO) or a valid statewide Portable Equipment Registration Program (PERP) placard and sticker issued by CARB.

Idling shall be limited to five minutes or less for all on-road related and/or delivery trucks in accordance with CARB's On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Clear Signage regarding idling restrictions should be placed at the entrances to the construction site.

WHI and WHII (if constructed concurrently)

5-1(b) Implement Mitigation Measure 5-1(a).

5-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation during operations, and conflict with or obstruct implementation of the applicable air quality plan. Based on the analysis below, the impact is *less than significant*.

As discussed above, due to the nonattainment designations of the area, the PCAPCD has developed plans to attain the State and federal standards for ozone and particulate matter. The currently applicable air quality plan is the 2013 Ozone Attainment Plan. Adopted PCAPCD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with the applicable air quality plan. Thus, if a project’s operational emissions exceed the PCAPCD’s mass emission thresholds, a project would be considered to conflict with or obstruct implementation of the PCAPCD’s air quality planning efforts.

Operational emissions of ROG, NO_x, and PM₁₀ would be generated by the proposed projects from both mobile and stationary sources. Day-to-day activities such as future resident vehicle trips to and from the project sites would make up the majority of future emissions. Emissions would also occur from area sources such as architectural coatings, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, detergents, hair spray, cleaning products, spray paint, insecticides, floor finishes, polishes, etc.). As discussed in the Method of Analysis section above, the project modeling was adjusted to reflect project-specific trip generation rates and VMT, as well as the fact that the proposed projects would not include construction or operation of fireplace hearths within any residences.

The maximum unmitigated operational emissions for WHI and WHII operated independently, as well as the maximum unmitigated operational emissions for operations of WHI and WHII combined, have been estimated using CalEEMod and are discussed in further depth below. The operational modeling assumptions are described in detail in the Method of Analysis section above.

WHI

The emissions estimated for operation of WHI alone are presented in Table 5-10.

Table 5-10 Maximum Unmitigated Operational Emissions from WHI		
Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	1.69	55
NO _x	3.21	55
PM ₁₀	1.22	82
<i>Source: CalEEMod, October 2018 (see Appendix C).</i>		

As shown in Table 5-10, the emissions resulting from operation of WHI alone would be below the PCAPCD thresholds of significance. Thus, implementation of WHI would not be considered to contribute substantially to the region’s nonattainment status of ozone or PM. Therefore, the WHI project would not violate any air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with and/or obstruct implementation of the PCAPCD’s air quality planning efforts, and impacts related to long-term operational emissions of criteria air pollutants associated with development of the WHI project would be less than significant.

WHII

The emissions estimated for operation of WHII alone are presented in Table 5-11.

Table 5-11		
Maximum Unmitigated Operational Emissions from WHII		
Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	3.81	55
NO _x	7.09	55
PM ₁₀	2.80	82
<i>Source: CalEEMod, October 2018 (see Appendix C).</i>		

As shown in Table 5-11, the emissions resulting from operation of WHII alone would be below the PCAPCD thresholds of significance. Thus, implementation of WHII would not be considered to contribute substantially to the region’s nonattainment status of ozone or PM. Therefore, implementation of the WHII project would not violate any air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with and/or obstruct implementation of the PCAPCD’s air quality planning efforts, and impacts related to long-term operational emissions of criteria air pollutants associated with development of the WHII project would be less than significant.

WHI and WHII

The emissions estimated for operation of both WHI and WHII are presented in Table 5-12.

Table 5-12		
Maximum Unmitigated Operational Emissions from WHI and WHII		
Pollutant	Project Emissions (lbs/day)	PCAPCD Significance Threshold (lbs/day)
ROG	5.38	55
NO _x	9.79	55
PM ₁₀	4.02	82
<i>Source: CalEEMod, October 2018 (see Appendix C).</i>		

As shown in Table 5-12, the emissions resulting from operation of both WHI and WHII would be below the PCAPCD thresholds of significance. Thus, the implementation of the WHI and WHII projects would not be considered to contribute substantially to the region's nonattainment status of ozone or PM. Therefore, the projects would not violate any air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with and/or obstruct implementation of the PCAPCD's air quality planning efforts, and impacts related to long-term operational emissions of criteria air pollutants associated with development of the proposed projects would be less than significant.

Conclusion

Based on the above, implementation of WHI only, WHII only, or WHI and WHII combined would result in a *less-than-significant* impact related to a violation of any air quality standard or substantial contribution to an existing or projected air quality violation during operations, and a conflict with or obstruction of implementation of the applicable air quality plan.

Mitigation Measure(s)

None required.

5-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the impact is *less than significant*.

The major pollutants of concern are localized CO emissions and TAC emissions, which are addressed below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of either or both of the proposed projects would increase traffic volumes on streets near the project sites; therefore, the projects would be expected to increase local CO concentrations. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are high. The statewide CO Protocol document identifies signalized intersections operating at Level of Service (LOS) E or F, or projects that would result in the worsening of signalized intersections to LOS E or F, as having the potential to result in localized CO concentrations in excess of AAQS, as a result of large numbers of cars idling at stop lights.¹⁶ In accordance with the statewide CO Protocol, the PCAPCD has established screening methodology for localized CO emissions, which are intended to provide a conservative indication of whether project-generated vehicle trips would result in the generation of localized CO emissions that would contribute to an exceedance of AAQS and potentially expose sensitive receptors to substantial CO concentrations. Per the PCAPCD's screening methodology, if either or both of the

¹⁶ University of California, Davis. *Transportation Project-Level Carbon Monoxide Protocol*. December 1997.

projects would result in vehicle operations producing more than 550 lbs/day of CO emissions and if either of the following scenarios are true, the projects could result in localized CO emissions that would violate CO standards:

- Degrade the peak hour level of service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity from an acceptable LOS (i.e., LOS A, B, C, or D) to an unacceptable LOS (i.e., LOS E or F); or
- Substantially worsen an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity. “Substantially worsen” includes an increase in delay at an intersection by 10 seconds or more when project-generated traffic is included.

WHI

According to the Air Quality analysis performed for the WHI project, operation of WHI alone would result in maximum mobile source CO emissions of 8.40 lbs/day (see Appendix C). Consequently, CO emissions related to operation of WHI alone would be far below the 550 lbs/day screening threshold used by PCAPCD. Therefore, according to the PCAPCD’s screening methodology for localized CO emissions, operation of WHI alone would not be expected to generate localized CO emissions that would contribute to an exceedance of AAQS, and WHI would not expose sensitive receptors to substantial concentrations of localized CO.

WHII

According to the Air Quality analysis performed for the WHII project, operation of WHII alone would result in maximum mobile source CO emissions of 18.30 lbs/day (see Appendix C). Consequently, CO emissions related to operation of WHII alone would be far below the 550 lbs/day screening threshold used by PCAPCD. Therefore, according to the PCAPCD’s screening methodology for localized CO emissions, WHII alone would not be expected to generate localized CO emissions that would contribute to an exceedance of AAQS, and WHII would not expose sensitive receptors to substantial concentrations of localized CO.

WHI and WHII

According to the Air Quality analysis performed for the proposed projects, operation of both projects would result in maximum mobile source CO emissions of 26.70 lbs/day (see Appendix C). Consequently, CO emissions related to operation of both proposed projects would be below the 550 lbs/day screening threshold used by PCAPCD. Therefore, according to the PCAPCD’s screening methodology for localized CO emissions, the proposed projects would not be expected to generate localized CO emissions that would contribute to an exceedance of AAQS, and the proposed projects would not expose sensitive receptors to substantial concentrations of localized CO.

TAC Emissions

As stated above, if a project would introduce a new source of TACs, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

Existing residential developments are located along all sides of both project sites, with rural residences adjacent to the project sites and higher density single-family residential developments to the west of the WHI site and to the north, opposite both project sites, across Douglas Boulevard. Residents at all such existing residences would be considered sensitive receptors. Thus, activities related to the construction and operation of the proposed projects are analyzed to determine whether the proposed projects would expose nearby sensitive receptors to TAC emissions.

It should be noted that because the WHI and WHII projects include substantively similar land uses, the potential for either project to result in impacts related to TACs is functionally identical. Therefore, the following section describes potential TAC impacts related to implementation of both WHI and WHII, but would apply to the implementation of either project independently as well.

WHI and WHII

The CARB has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks connected with DPM in particular are primarily linked with long-term exposure and associated risk of contracting cancer.

Construction-related activities have the potential to generate concentrations of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Implementation of either project would involve construction activity, and, thus, exhaust emissions from off-road equipment. However, construction of both projects would be temporary and would occur over a relatively short duration in comparison to the operational lifetime of the proposed projects. While methodologies for conducting health risk assessments are associated with long-term exposure periods (e.g., over a 30-year period), construction activities associated with implementation of both projects would occur over approximately two and a half years. Only portions of each site would be disturbed at a time throughout the construction period, with operation of construction equipment occurring intermittently throughout the course of a day rather than continuously at any one location on either project site. In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation includes emissions reducing requirements such as limitations on vehicle idling, disclosure, reporting, and labeling requirements for existing vehicles, as well as standards relating to fleet average

emissions and the use of Best Available Control Technologies. Thus, off-road diesel vehicles used during construction of the proposed projects would be required to comply with statewide emissions reductions targets. Construction of the projects would also be required to comply with all applicable PCAPCD rules and regulations, including Rule 501 related to General Permit Requirements. As discussed in Impact 5-1 above, construction equipment used during construction of WHII alone or the combined implementation of WHI and WHII would be required to use construction equipment meeting the USEPA's Tier 4 Engine requirements. Tier 4 engines include emissions control technologies that reduce the amount of air pollutants released during operation of such equipment. Such technologies reduce the amount of DPM released by construction equipment, which would reduce the potential for construction equipment to expose nearby sensitive receptors to pollutants.

Considering the intermittent nature of construction equipment operating within an influential distance to the nearest sensitive receptors, the duration of construction activities in comparison to the operational lifetime of the projects, the typical long-term exposure periods associated with conducting health risk assessments, and compliance with regulations, and mitigation measures required by this EIR, the likelihood that any one nearby sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. Consequently, construction of the proposed projects would not be expected to generate substantial DPM emissions such that an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 would occur. Therefore, the proposed projects would not expose sensitive receptors to substantial concentrations of DPM during construction.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The residential development proposed as part of both projects would not involve long-term operation of any stationary diesel engines or other major on-site stationary source of TACs. The CARB's Handbook includes facilities (distribution centers) associated with 100 or more heavy-duty diesel trucks per day as a source of substantial DPM emissions. Neither WHI or WHII is a distribution center, and neither project site is located near any existing distribution centers. Residential developments do not involve frequent heavy-duty diesel truck trips. Some future residents may own diesel-fueled vehicles; however, emissions from passenger vehicles are less intense than from heavy-duty trucks, and the likelihood that the equivalent of 100 heavy-duty diesel trucks per day would occur from diesel-fueled passenger vehicles to and from either or both sites is extremely remote. Accordingly, the proposed projects would not involve diesel trucks at the site in excess of 100 per day and would not expose any existing sensitive receptors to substantial DPM emissions associated with truck trips. Therefore, operation of the proposed projects would not result in an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0, and existing nearby sensitive receptors would not be exposed to substantial pollutant concentrations.

Naturally Occurring Asbestos

According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*, prepared by the Department of Conservation, both project sites are located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.¹⁷ Consequently, NOA is not anticipated to be present on the project sites.

Conclusion

Based on the above analysis, the proposed residential land uses would not be anticipated to result in the production of substantial concentrations of DPM or localized CO. In addition, the likelihood of NOA being present within either project site is low. Therefore, implementation of WHI only, WHII only, or WHI and WHII combined would not result in the exposure of sensitive receptors to substantial pollutant concentrations, and a *less-than-significant* impact would result.

Mitigation Measure(s)

None required.

5-4 Create objectionable odors affecting a substantial number of people. Based on the analysis below, the impact is *less than significant*.

The potential for the proposed projects to result in impacts related to odors is discussed below.

WHI and WHII

Odors are generally regarded as an annoyance rather than a health hazard. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact do not exist. Certain land uses such as wastewater treatment facilities, landfills, confined animal facilities, composting operations, food manufacturing plants, refineries, and chemical plants have the potential to generate considerable odors. The proposed projects would not introduce any such land uses.

Both the WHI project and the WHII project include only residential development. Residential land uses are not typically associated with the creation of substantial objectionable odors. As a result, operation of the proposed projects would not create any objectionable odors that would affect a substantial number of people.

¹⁷ Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*. Published 2006.

Diesel fumes from construction equipment could be found to be objectionable; however, operation of construction equipment would be regulated by PCAPCD rules and regulations, restricted to certain hours per the Placer County Code, Section 9.36.030(A)(7), would occur intermittently throughout the course of a day, and be temporary in nature. Furthermore, as discussed in Impact 5-1 and 5-3, emissions from construction activities related to WHII or the combined implementation of WHI and WHII would be reduced through the application of the CARB's In-Use Off-Road Diesel Vehicle Regulation and the implementation of Mitigation Measure 5-1(a). For the aforementioned reasons, the project would not result in any noticeable objectionable odors associated with construction.

PCAPCD Rule 205, Nuisance, addresses the exposure of "nuisance or annoyance" air contaminant discharges, including odors, and provides enforcement of odor control. Rule 205 is complaint-based, where if public complaints are sufficient to cause the odor source to be considered a public nuisance, then the PCAPCD is required to investigate the identified source, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications to correct the nuisance condition. Thus, although not anticipated, if odor or air quality complaints are made upon development of the proposed projects, the PCAPCD would be required (per PCAPCD Rule 205) to ensure that such complaints are addressed and resolved, as necessary.

For the aforementioned reasons, construction and operation of WHI only, WHII only, or WHI and WHII combined would not create objectionable odors affecting a substantial number of people, and impacts would be *less than significant*.

Mitigation Measure(s)

None required.