

---

## **5.0 AIR QUALITY**

---



This section examines the air quality in the project area, includes a summary of applicable air quality regulations, and analyzes potential air quality impacts associated with the proposed Dollar General stores. All technical analyses related to this section are contained in **Appendix 5.0**.

### 5.0 GENERAL ENVIRONMENTAL CONDITIONS AND REGULATIONS

#### 5.0.1 ENVIRONMENTAL SETTING

##### **Air Basin Characteristics**

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The project sites are located in the western-central portion of unincorporated Nevada County, which is encompassed by the Mountain Counties Air Basin (MCAB). The MCAB consists of nine counties or portions of counties stretching from Plumas County on the north to Mariposa County on the south. The MCAB exhibits large variations in terrain and consequently exhibits large variations in climate, both of which affect air quality. The western portions of the basin slope relatively gradually, with deep river canyons running from southwest to northeast toward the crest of the Sierra Nevada range. East of the divide, the slope of the Sierra is steeper, but river canyons are relatively shallow.

Because of the region's topographical features and meteorological conditions, the MCAB is more sensitive to negative impacts on air quality than most other areas of California. The prevailing wind direction over the county is westerly. However, the terrain has a great influence on local winds, so that wide variability in wind direction can be expected. Afternoon winds are generally channeled up-canyon, while nighttime winds generally flow down-canyon. Winds are, in general, stronger in spring and summer and weaker in fall and winter. Periods of calm winds and clear skies in fall and winter often result in strong, ground-based inversions forming in mountain valleys. These layers of very stable air restrict the dispersal of pollutants, trapping these pollutants near the ground, representing the worst conditions for local air pollution occurring in the county.

Cold temperatures and mild winds often result in temperature inversions in which upper layers of warmer air trap colder air near the surface. Local pollutant sources in the MCAB are trapped by frequent inversions, which limit the volume of air into which they can be mixed and in turn result in elevated pollutant concentrations. The most frequent episodes of high pollution occur during local basin inversions, when emissions from local sources such as motor vehicles, chimney smoke, and forest burning are trapped in the basin. This is the most common meteorological condition contributing to air quality degradation in the area.

The second-most common meteorological condition contributing to air quality degradation is transport from the Sacramento Valley and the Bay Area into the region. This meteorological condition is strongest during the warmer summer months and contributes approximately 30 percent of the ozone and airborne particulate matter pollution in the region. The lowest pollution regimes are associated with the fall and winter months and contribute approximately 10 percent of the pollution to the region. Similar to other areas, when winds are strong enough to break up basin inversion layers, pollution is generally blown outside of the region and the air quality is typically good. However, when fall and winter winds are weak, this regime is associated with persistent local inversions and the associated buildup of local pollutants.

##### **Air Pollutants of Concern**

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as criteria air pollutants and are

## 5.0 AIR QUALITY

categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), coarse particulate matter (PM<sub>10</sub>) and fine particulate matter (PM<sub>2.5</sub>), lead, and fugitive dust are primary air pollutants. Of these, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are criteria pollutants. ROG and NO<sub>x</sub> are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O<sub>3</sub>) and nitrogen dioxide (NO<sub>2</sub>) are the principal secondary pollutants. Presented in **Table 5.0-1** is a description of each of the primary and secondary criteria air pollutants and their known health effects.

**TABLE 5.0-1  
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS**

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO <sub>2</sub> )	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O <sub>3</sub> )	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (NO <sub>x</sub> ) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Particulate Matter (PM <sub>10</sub> & PM <sub>2.5</sub> )	Produced by power plants, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Sulfur Dioxide (SO <sub>2</sub> )	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.

Source: CAPCOA 2011

### Ambient Air Quality

Ambient air quality in west-central Nevada County can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are documented by measurements made by the Northern Sierra Air Quality Management District (NSAQMD), the air pollution regulatory agency in Nevada County that maintains air quality monitoring stations which process ambient air quality measurements.

The Grass Valley-Litton Building air quality monitoring station is the closest station to the three project sites, at approximately 4.5 miles north of the Alta Sierra site, 6.5 miles east of the Penn Valley site, and 2 miles southeast of the Rough and Ready Highway site. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered generally representative of ambient concentrations at the project sites. **Table 5.0-2** summarizes the published data since 2013 for each year that the monitoring data is provided.

**TABLE 5.0-2  
SUMMARY OF AMBIENT AIR QUALITY DATA**

Pollutant Standards	2013	2014	2015
<b>Ozone</b>			
Max 1-hour concentration (ppm)	0.089	0.089	0.101
Max 8-hour concentration (ppm) (state/federal)	0.082 / 0.082	0.086 / 0.085	0.093/0.092
Number of days above state 1-hour standard	0	0	4
Number of days above state/federal 8-hour standard	24 / 4	36 / 10	30/11
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>			
Max 24-hour concentration ( $\mu\text{g}/\text{m}^3$ ) (state/federal)	* / *	* / *	* / *
Number of days above state/federal standard	* / *	* / *	* / *
<b>Fine Particulate Matter (PM<sub>2.5</sub>)</b>			
Max 24-hour concentration ( $\mu\text{g}/\text{m}^3$ ) (state/federal)	38.1 / 28.5	239.0 / 61.3	130.0/11.5
Number of days above federal standard	0	2	0

Source: CARB 2016a

Notes:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter; ppm = parts per million

\* = No data is currently available from CARB to determine the value.

Areas with air quality exceeding adopted air quality standards are designated as nonattainment areas for the relevant air pollutants, while areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. The attainment status for west-central Nevada County is included in **Table 5.0-3**. The region is nonattainment for state ozone and PM<sub>10</sub> standards in addition to federal ozone standards (CARB 2015).

**TABLE 5.0-3  
FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR WESTERN NEVADA COUNTY**

Pollutant	Federal	State
Ozone (O <sub>3</sub> )	Nonattainment	Nonattainment
Coarse Particulate Matter (PM <sub>10</sub> )	Unclassified	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Unclassified/Attainment	Unclassified
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified
Nitrogen Dioxide (NO <sub>2</sub> )	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO <sub>2</sub> )	Unclassified	Attainment

Source: CARB 2015

## 5.0 AIR QUALITY

---

### Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally rather than regionally.

To date, CARB has designated nearly 200 compounds as toxic air contaminants. Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds.

CARB has also identified diesel particulate matter (diesel PM) as a toxic air contaminant. Diesel PM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total diesel PM. It should be noted that CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan (DRRP), the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Reporting System (DOORS). The PERP and DOORS allow owners or operators of portable engines and certain other types of equipment to register their units in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancers in a population of 1 million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, children are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, diesel exhaust particles have been identified as a carcinogen.

Existing diesel PM sources in Nevada County include diesel trucks, backup diesel generators, and diesel snow removal equipment.

### **Naturally Occurring Asbestos**

CARB has identified naturally occurring asbestos (NOA) as a toxic air contaminant. NOA occurs in rocks and soil as a result of natural geological processes. Natural weathering and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. NOA-bearing rock/soil has been identified in Nevada County.

### **Sensitive Receptors**

Some land uses are considered more sensitive to air pollution than others because of the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to the health effects of air pollution due to their immature immune systems and developing organs (OEHHA 2007). As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

## 5.0.2 REGULATORY FRAMEWORK

### **Ambient Air Quality Standards**

The federal Clean Air Act (CAA) established national ambient air quality standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

## 5.0 AIR QUALITY

Both the State of California and the federal government have established health-based ambient air quality standards for six air pollutants. As shown in **Table 5.0-4**, these pollutants include O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

**TABLE 5.0-4  
AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O <sub>3</sub> )	8 Hour	0.070 ppm (137 μg/m <sup>3</sup> )	0.075 ppm
	1 Hour	0.09 ppm (180 μg/m <sup>3</sup> )	—
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	1 Hour	0.18 ppm (339 μg/m <sup>3</sup> )	100 ppb
	Annual Arithmetic Mean	0.030 ppm (57 μg/m <sup>3</sup> )	53 ppb (100 μg/m <sup>3</sup> )
Sulfur Dioxide (SO <sub>2</sub> )	24 Hour	0.04 ppm (105 μg/m <sup>3</sup> )	N/A
	3 Hour	—	N/A
	1 Hour	0.25 ppm (665 μg/m <sup>3</sup> )	75 ppb
Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	20 μg/m <sup>3</sup>	N/A
	24 Hour	50 μg/m <sup>3</sup>	150 μg/m <sup>3</sup>
Particulate Matter – Fine (PM <sub>2.5</sub> )	Annual Arithmetic Mean	12 μg/m <sup>3</sup>	15 μg/m <sup>3</sup>
	24 Hour	N/A	35 μg/m <sup>3</sup>
Sulfates	24 Hour	25 μg/m <sup>3</sup>	N/A
Lead	Calendar Quarter	N/A	1.5 μg/m <sup>3</sup>
	30 Day Average	1.5 μg/m <sup>3</sup> )	N/A
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m <sup>3</sup> )	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 μg/m <sup>3</sup> )	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	—	N/A

Source: CARB 2016b

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

### Northern Sierra Air Quality Management District

The NSAQMD is the agency primarily responsible for ensuring that federal and state ambient air quality standards are not exceeded and that air quality conditions are maintained for the project sites. NSAQMD responsibilities include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the federal Clean Air Act and the California Clean Air Act. NSAQMD rules and regulations applicable to the proposed project include, but are not necessarily limited to, the following:

- *Rule 205, Nuisance.* This rule prohibits the discharge of air contaminants or other material from any source which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endangers the comfort, repose, health, or safety of any such persons, or the public or which cause to have a natural tendency to cause injury or damage to business or property.
- *Rule 226, Dust Control.* This rule requires the submittal of a Dust Control Plan to the NSAQMD for approval prior to any surface disturbance, including clearing of vegetation.
- *Rule 302, Prohibited Open Burning.* In accordance with this rule, no person (except as otherwise authorized in Sections 41801–41805.6, 41807–41809, and 41811–41815 of the Health and Safety Code) shall use open outdoor fires for the purpose of disposal, processing, or burning of any flammable or combustible material as defined in Section 39020 of the Health and Safety Code; or unless issued a permit by the NSAQMD and in accordance with other applicable NSAQMD rules and regulations, including, but not limited to, Rule 308, Land Development Clearing, and Rule 312, Burning Permits.
- *Rule 308, Land Development Clearing.* The NSAQMD finds it more economically desirable to dispose of wood waste from trees, vines, and bushes on property being developed for commercial or residential purposes by burning instead of burial at a sanitary landfill. In such instances, disposal by burning shall comply with NSAQMD rules, including, but not limited to, Rule 312, Burning Permit Requirements; Rule 313, Burn Days; Rule 314, Minimum Drying Times; Rule 315, Burning Management; and Rule 316, Burn Plan Preparation.
- *Rule 501, Permit Required.* Before any source may be operated, a Permit to Operate must be obtained from the Air Pollution Control Officer. No Permit to Operate shall be granted either by the Air Pollution Control Officer or the Hearing Board for any source constructed or modified without authorization or not in compliance with other NSAQMD rules and regulations, including those specified in NSAQMD Regulation IV.

### **California Green Building Standards**

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect July 1, 2014.

#### **5.0.3 IMPACT METHODOLOGY**

##### **Standards of Significance**

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance, which state that a project would have a significant air quality impact if it would:

- 1) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

## 5.0 AIR QUALITY

- 2) Expose sensitive receptors to substantial pollutant concentrations.
- 3) Create objectionable odors affecting a substantial number of people.
- 4) Conflict with or obstruct implementation of any applicable air quality plan.
- 5) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

NSAQMD thresholds have also been used to determine air quality impacts in this analysis. To assist local jurisdictions in the evaluation of air quality impacts, the NSAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that includes thresholds of significance to be used in evaluating land use proposals. Thresholds of significance are based on a source's projected impacts and are a basis from which to apply mitigation measures (NSAQMD 2016). The NSAQMD has developed a tiered approach to significance levels: a project with emissions meeting Level A thresholds will require the most basic mitigations; projects with projected emissions in the Level B range will require more extensive mitigations; and those projects which exceed Level C thresholds will require the most extensive mitigations. The NSAQMD-recommended thresholds are identified in **Table 5.0-5**.

**TABLE 5.0-5  
NSAQMD-RECOMMENDED SIGNIFICANCE THRESHOLDS**

Significance Level	Project-Generated Emissions (lbs/day)		
	NO <sub>x</sub>	ROG	PM <sub>10</sub>
Level A	< 24	< 24	< 79
Level B	24–136	24–136	79–136
Level C	≥ 136	≥ 136	≥ 136

Source: NSAQMD 2016

According to the NSAQMD (2016), these thresholds are recommended for use by lead agencies when preparing initial studies. If, during the preparation of the initial study, the lead agency finds that any of these thresholds may be exceeded and cannot be mitigated to Level B, then a determination of significant air quality impact must be made and an EIR is required.

For evaluation of project-related air quality impacts and considering that this EIR has been prepared to analyze the project, implementation of the proposed projects would be considered significant if they would:

- Exceed NSAQMD-recommended significance thresholds, as identified in **Table 5.0-5**. In accordance with NSAQMD-recommended thresholds of significance, project-generated short- or long-term increases in emissions in excess of Level C thresholds for NO<sub>x</sub>, ROG, or PM<sub>10</sub> would be considered significant. The NSAQMD has not adopted thresholds of significance for PM<sub>2.5</sub>. However, because PM<sub>2.5</sub> is a subset of PM<sub>10</sub>, significant increases in PM<sub>10</sub> would be considered to also result in significant increases in PM<sub>2.5</sub>.

It is important to note that in cases when predicted emissions are projected to be below the Level C thresholds but exceeding the Level A thresholds (thereby placing project-related air quality impacts at Level B), a project would be considered potentially

significant, subject to the recommended measures of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. Implementation of the appropriate NSAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

- Exceed the NSAQMD health risk public notification thresholds set at 10 excess cancer cases in a million for cancer risk, or a Hazard Index of greater than one (1.0) for non-cancer risk.
- Contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards.
- Result in the frequent exposure of sensitive land uses to odorous emissions.

## Methodology

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the NSAQMD. Where criteria air pollutant quantification was required, emissions were modeled by Kunzman Associates (2015a, 2015b, 2016) using the California Emissions Estimator Model (CalEEMod) (see **Appendix 5.0**). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

## 5.1 ALTA SIERRA SITE

### 5.1.1 PROJECT-SPECIFIC SETTING

The Alta Sierra site is located in the Nevada County portion of the MCAB, as described above. There are no aspects of the Alta Sierra site or surrounding area that result in air quality effects other than those described in Subsection 5.0.1 above.

The closest sensitive receptor to the Alta Sierra site is a residence approximately 100 feet from the boundary of the site.

### 5.1.2 REGULATORY FRAMEWORK

There are no additional regulations, policies, or standards that pertain to the Alta Sierra site other than those described in Subsection 5.0.2 above.

### 5.1.3 PROJECT IMPACTS AND MITIGATION MEASURES

#### **Short-Term Construction-Generated Pollutant Emissions Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)**

**Impact 5.1.1(AS)** Construction activities associated with the Alta Sierra site such as clearing, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality for adjacent land uses. **(Less than Significant with Mitigation Incorporated)**

Construction associated with the development of the Alta Sierra project site would generate short-term emissions from activities such as site grading, asphalt paving, building construction, and

## 5.0 AIR QUALITY

---

architectural coatings (e.g., painting). Construction would require the removal of approximately 5,988 cubic yards of soil from the Alta Sierra site. Common construction emissions include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM<sub>10</sub> and PM<sub>2.5</sub> emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Off-road construction equipment is often diesel-powered and can be a substantial source of NO<sub>x</sub> emissions, in addition to PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. As previously stated, the NSAQMD considers emissions in excess of Level C thresholds to have a significant air quality impact. Emissions below Level C thresholds are considered potentially significant and subject to the recommended mitigation of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. Accordingly, implementation of NSAQMD-recommended mitigation measures sufficient to reduce emissions to levels below 137 pounds per day is considered adequate to reduce air quality impacts to a less than significant level. NSAQMD-recommended significance thresholds are defined in **Table 5.0-5**.

In addition, NSAQMD Rule 226, Dust Control, requires the submittal of a Dust Suppression Control Plan to the air district for approval prior to any surface disturbance associated with a construction project. In accordance with NSAQMD Rule 226, Dust Control, a Dust Suppression Control Plan (DSCP) for the Alta Sierra project site must be submitted for approval by the Nevada County Community Development Agency and the NSAQMD. The DSCP must identify project phases and construction schedules to be implemented in order to ensure that mitigated construction-generated emissions would not exceed NSAQMD-recommended significance thresholds. The DSCP is required to include, but is not limited to, the following NSAQMD-recommended measures for the control of fugitive dust emissions:

- The project applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All on-site vehicle traffic shall be limited to a speed of 15 miles per hour (mph) on unpaved roads.
- All land clearing, grading, earth moving, or excavation activities on the project site shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved nontoxic soil stabilizers (according to manufacturers' specifications) to all inactive

construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.

- All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of 6 inches of freeboard in the bed of the transport vehicle.
- Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud which may have resulted from activities at the project site.
- Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.

Predicted maximum daily construction-generated emissions for the Alta Sierra site are summarized in **Table 5.0-6**.

**TABLE 5.0-6**  
**CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – ALTA SIERRA SITE**  
**(MAXIMUM POUNDS PER DAY)**

Construction Activities	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Site Preparation	1.52	16.08	12.61	0.01	3.07	1.95
Grading	8.72	39.24	95.67	0.05	4.18	2.54
Building Construction, Paving & Painting	11.30	39.90	31.95	0.04	3.08	2.62
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
<b>Exceed NSAQMD Level A Threshold?</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
<b>Exceed NSAQMD Level B Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Kunzman Associates 2015a. See **Appendix 5.0** for emission model outputs.

Notes: Emission projections account for the removal of 7,728 cubic yards of material from the Alta Sierra site and subsequent hauling of this material 4.2 miles to Hansen Brothers Enterprises located at 1172 La Barr Meadows Road in Grass Valley. Subsequent to the air quality modeling prepared by Kunzman Associates for the Alta Sierra project, the amount of material to be removed and transported was reduced by the project applicant to approximately 5,988 cubic yards. Thus, the emission estimates attributed to grading are overstated, but the project would still exceed the applicable threshold for NO<sub>x</sub>.

As shown in **Table 5.0-6**, short-term daily construction emissions associated with the Alta Sierra site would not exceed the Level B significance thresholds; however, the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions. As previously described, development projects estimated to exceed Level A significance thresholds must apply the emission-appropriate measures of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. According to the air district, implementation of the appropriate NSAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

## 5.0 AIR QUALITY

---

Since the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions during construction of the Alta Sierra site, this would be a **potentially significant** impact, and mitigation measure **MM AS-5.1.1a** is required. Mitigation measure **MM AS-5.1.1a** is derived from the NSAQMD's recommended mitigations in order to address generated NO<sub>x</sub> emissions. Mitigation measures **MM AS-5.1.1b** and **MM AS-5.1.1c** would further reduce the project's construction-phase emissions by requiring dust suppression measures to reduce particulate emissions and the use of low-VOC architectural coatings to reduce the generation of VOCs. With implementation of mitigation measures **MM AS-5.1.1a** through **MM AS-5.1.1c**, this impact would be **less than significant**.

### Mitigation Measures

**MM AS-5.1.1a** The construction contractor shall submit to the NSAQMD for approval an Off-Road Construction Equipment Emission Reduction Plan prior to ground breaking demonstrating the following:

- All off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications unless prior written approval for any exceptions is obtained from the NSAQMD. Note that all off-road equipment must meet all applicable state and federal requirements.
- Emissions from on-site construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions.
- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators (i.e. diesel generators), where feasible.
- Deliveries of construction materials shall be scheduled to direct traffic flow to avoid the peak hours of 7:00–9:00 AM and 4:00–6:00 PM.
- The primary contractor shall use architectural coatings for the proposed structure that have a volatile organic compound (VOC) content no greater than 50 grams per liter of VOC.

*Timing/Implementation:* The Off-Road Construction Equipment Emission Reduction Plan shall be submitted and approved prior to issuance of grading permits for the first phase of construction. The plan shall be implemented during all phases of construction.

*Enforcement/Monitoring: Nevada County Building Department; Northern Sierra Air Quality Management District*

**MM AS-5.1.1b**

To reduce impacts of short-term construction, the applicant shall obtain NSAQMD approval of a Dust Control Plan (DCP) which shall include, but not be limited to, the standards provided below to the satisfaction of the NSAQMD. Prior to issuance of grading permits, the developer shall provide a copy of the approved DCP to the County Planning and Building Department and shall include the requirements of DCP as notes on all construction plans. The Building Department shall verify that the requirements of the DCP are being implemented during grading inspections.

Alternatives to open burning of vegetation material on the project site shall be used by the project applicant unless deemed infeasible to the Air Pollution Control Officer (APCO). Among suitable alternatives is chipping, mulching, or conversion to biomass fuel.

1. The applicant shall implement all dust control measures in a timely manner during all phases of project development and construction.
2. All material excavated, stockpiled or graded shall be sufficiently watered, treated or converted to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
3. All areas (including unpaved roads) with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
4. All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
5. All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
6. All inactive disturbed portions of the development site shall be covered, seeded or watered until a suitable cover is established. Alternatively, the applicant shall be responsible for applying non-toxic soil stabilizers to all inactive construction areas.
7. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance.
8. Paved streets adjacent to the project shall be swept or washed at the end of each day, or as required to removed excessive accumulation of silt and/or mud which may have resulted from activities at the project site.
9. If serpentine or ultramafic rock is discovered during grading or construction, the District must be notified no later than the next business day and the California Code of Regulations, Title 17, Section 9315 applies.

## 5.0 AIR QUALITY

*Timing/Implementation:* Prior to grading permit issuance and throughout construction phase

*Enforcement/Monitoring:* Nevada County Building Department; Northern Sierra Air Quality Management District

**MM AS-5.1.1c** To ensure that the project will not result in the significant generation of VOCs, all architectural coatings shall utilize low-VOC paint (no greater than 50g/L VOC). Prior to building permit issuance, the developer shall submit their list of low-VOC coatings to the NSAQMD for review and approval. The developer shall then provide written verification from NSAQMD that all architectural coatings meet NSAQMD thresholds to be considered "low-VOC." Finally, all building plans shall include a note documenting which low-VOC architectural coatings will be used in construction.

*Timing/Implementation:* Prior to building permit issuance and throughout construction phase

*Enforcement/Monitoring:* Nevada County Building Department; Northern Sierra Air Quality Management District

### Long-Term Operational Emissions of Air Pollutants Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)

**Impact 5.1.2(AS)** The Alta Sierra project would not result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards. **(Less than Significant with Mitigation Incorporated)**

The project would result in the generation of long-term operational emissions of criteria air pollutants and ozone precursors. Project-generated increases in emissions would be predominantly associated with motor vehicle use. To a lesser extent, area sources, such as the use of natural-gas-fired appliances, landscape maintenance equipment, and architectural coatings, would also contribute to overall increases in emissions. Emissions attributed to energy use would be reduced through compliance with the California Green Building Code described previously.

Long-term operational emissions attributable to the Alta Sierra site are summarized in **Table 5.0-7**.

**TABLE 5.0-7  
LONG-TERM OPERATIONAL EMISSIONS – ALTA SIERRA SITE (POUNDS PER DAY)**

Source	Emissions					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Summer Emissions</b>						
Area Source	1.13	0.00	0.00	0.00	0.00	0.00
Energy Use	0.00	0.03	0.02	0.00	0.00	0.00
Mobile Source	4.38	8.03	41.44	0.03	2.04	0.61
<b>Total</b>	<b>5.51</b>	<b>8.06</b>	<b>41.46</b>	<b>0.03</b>	<b>2.05</b>	<b>0.61</b>
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None

Source	Emissions					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Exceed NSAQMD Level A Threshold?	No	No	No	No	No	No
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
Exceed NSAQMD Level B Threshold?	No	No	No	No	No	No

Source: Kunzman Associates 2015a. See **Appendix 5.0** for emission model outputs.

Based on the modeling conducted, daily operational emissions associated with the Alta Sierra site would not exceed Level A or Level B significance thresholds, and with implementation of mitigation measure **MM AS-5.1.2**, which would ensure compliance with NSAQMD permitting requirements, operational air quality impacts would be **less than significant**.

Mitigation Measures

**MM AS-5.1.2**

The project applicant shall obtain an Authority to Construct Permit from NSAQMD for any source of air contaminants that exist after construction that is not exempt from District permit requirements. All requirements of this permit shall be incorporated into standard operating procedure manuals or materials for the project. Prior to issuance of final occupancy, the developer shall submit written proof (i.e. a letter from NSAQMD and a copy of the permit) to the County Planning and Building Department documenting that they have obtained said permit from NSAQMD.

*Timing/Implementation:* Prior to issuance of final occupancy and throughout project operation

*Enforcement/Monitoring:* Nevada County Building Department; Northern Sierra Air Quality Management District

**Expose Sensitive Receptors to Substantial Carbon Monoxide Pollutant Concentrations (Standard of Significance 2)**

**Impact 5.1.3(AS)** The Alta Sierra project would not contribute to localized concentrations of mobile-source carbon monoxide that would exceed applicable ambient air quality standards. **(Less than Significant)**

It has long been recognized that carbon monoxide exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or “hot spots,” are typically associated with intersections that are projected to operate at

## 5.0 AIR QUALITY

---

unacceptable levels of service during the peak commute hours.<sup>1</sup> However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the carbon monoxide standard. An analysis prepared for CO attainment in Southern California by the South Coast Air Quality Management District determined that even with approximately 100,000 vehicles per day and an intersection level of service LOS E at peak morning traffic and LOS F at peak afternoon traffic, there was no violation of CO standards.

As described in the traffic analysis prepared for the Alta Sierra site (see **Appendix 15.0-A**), the proposed Alta Sierra store is projected to generate approximately 583 daily vehicle trips, 35 of which would occur during the morning peak hour and 62 during the evening peak hour. Therefore, the proposed Alta Sierra store would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, the value used in the Southern California study. In addition, for Existing plus Project traffic conditions and Year 2035 with Project traffic conditions, all of the study area intersections are projected to operate at an acceptable level of service during the peak hours. As a result, the project would not increase traffic such that there would be CO exceedances and this impact would be **less than significant**.

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Construction Activities (Standard of Significance 2)**

**Impact 5.1.4(AS)** The proposed Alta Sierra project would not result in increased exposure of existing sensitive land uses to construction-source pollutant concentrations that would exceed applicable standards. **(Less than Significant)**

Sensitive land uses are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Construction-related activities would result in temporary, short-term project-generated emissions of diesel particulate matter (diesel PM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling

---

<sup>1</sup> Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

CARB identified particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) as a toxic air contaminant in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003), so diesel PM is the focus of this discussion.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazards Assessment, assessments of health risks posed by air toxics should be based on a 70- or 30-year exposure period (OEHHA 2012, p. 11-3); however, such assessments would be limited to the period/duration of activities associated with the proposed project.

The closest sensitive receptor to the Alta Sierra site is a residence approximately 100 feet from the northeastern property boundary of the site. As described, health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The use of diesel-powered construction equipment during the construction of the Alta Sierra site would be temporary and episodic. As described in Section 2.0, Project Description, construction activities would primarily occur within a 1-acre area. According to CARB (2004), construction projects in rural areas encompassing less than 2.4 acres are considered to pose less than significant health risk impacts. Construction projects contained in a site of less than 2.4 acres are generally considered to represent less than significant health risk impacts due to (1) limitations on the off-road diesel equipment able to operate and thus a reduced amount of generated diesel PM, (2) the reduced amount of dust-generating ground disturbance possible compared to larger construction sites, and (3) the reduced duration of construction activities compared to the development of larger sites. Additionally, construction activities would be subject to California regulations limiting idling to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable diesel PM emissions. For these reasons and because diesel fumes disperse rapidly over relatively short distances, diesel PM generated by construction activities would not expose sensitive receptors to substantial amounts of air toxics.

Another potential source of air toxics associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally occurring asbestos-containing soils. Naturally occurring asbestos (NOA) is contained in serpentine and ultramafic rock and has been identified as potentially occurring in several areas throughout the county. As previously stated, CARB has identified NOA as a toxic air contaminant, and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. The Alta Sierra site is not located in an area designated by the State of California as likely to contain naturally occurring asbestos (DOC 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

For the reasons described, construction-generated TAC impacts associated with the Alta Sierra development site would be **less than significant**.

## 5.0 AIR QUALITY

---

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Operations (Standard of Significance 2)**

**Impact 5.1.5(AS)** Operation of the Alta Sierra project would not result in increased exposure of existing or planned sensitive land uses to operational-source toxic air contaminant emissions (i.e., diesel PM). **(Less than Significant)**

As stated above, sensitive land uses are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The proposed Alta Sierra store is not considered a sensitive land use.

However, for the purpose of deliveries, the proposed Alta Sierra store could involve daily heavy-duty truck trips on-site and thus diesel PM emissions that could negatively affect nearby sensitive receptors. Development projects that involve numerous heavy-duty truck trips on-site create substantial quantities of diesel PM emissions, described as a TAC above, and therefore can negatively affect sensitive land uses. According to the California Air Pollution Control Officers Association's (CAPCOA) Health Risk Assessments for Proposed Land Use Projects (2016), operations that require fewer than 100 delivery trucks daily are not considered a potential health risk.

As noted in Section 2.0, Project Description, it is assumed that the proposed project would have eight small truck/van deliveries per week and one to two semi-truck deliveries per week. Daily deliveries to the proposed commercial building would not require 100 trucks, as a 9,100-square-foot discount retail store does not need such large quantities of deliveries in order to operate. The only other heavy-duty trucks visiting the project would be solid waste hauling trucks, and such solid waste service would not result in more than 100 heavy-duty truck trips daily. Since the operations of the proposed Alta Sierra store would not generate 100 delivery trucks on a daily basis, sensitive receptors would not be exposed to substantial amounts of air toxics and this impact is **less than significant**.

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Odorous Emissions (Standard of Significance 3)**

**Impact 5.1.6(AS)** The proposed Alta Sierra project would not include sources that could create objectionable odors affecting a substantial number of people or expose new residents to existing sources of odor. **(No Impact)**

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Land uses commonly considered to be potential

sources of odorous emissions include wastewater treatment plants, sanitary landfills, food processing facilities, chemical manufacturing plants, rendering plants, paint/coating operations, and agricultural feedlots and dairies.

Heavy-duty construction equipment used for the construction of the Alta Sierra project would emit odors. However, construction activity would be short term and finite in nature. Furthermore, equipment exhaust odors would dissipate quickly and are common in a suburban environment. For these reasons, the development of the Alta Sierra store is not anticipated to create objectionable odors affecting a substantial number of people and thus effects are considered insubstantial.

With respect to permanent odor sources, the proposed project does not include a land use considered to be a source of odors. Therefore, there would be **no impacts** from the proposed Alta Sierra project.

#### Mitigation Measures

None required.

## **5.2 PENN VALLEY SITE**

### 5.2.1 PROJECT-SPECIFIC SETTING

The Penn Valley site is located in the Nevada County portion of the MCAB, as described above. There are no aspects of the Penn Valley site or surrounding area that result in air quality effects other than those described in Subsection 5.0.1 above.

The closest sensitive receptor to the Penn Valley site is a residence approximately 150 feet to the southwest.

### 5.2.2 REGULATORY FRAMEWORK

There are no additional regulations, policies, or standards that pertain to the Penn Valley site other than those described in Subsection 5.0.2 above.

### 5.2.3 PROJECT IMPACTS AND MITIGATION MEASURES

#### **Short-Term Construction-Generated Pollutant Emissions Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)**

**Impact 5.2.1(PV)** Construction activities associated with the Penn Valley site such as clearing, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality for adjacent land uses. **(Less than Significant with Mitigation Incorporated)**

Construction associated with the development of the Penn Valley project site would generate short-term emissions from activities such as site grading, asphalt paving, building construction, and architectural coatings (e.g., painting). Common construction emissions include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM<sub>10</sub> and PM<sub>2.5</sub> emissions, is generated when wheels or blades disturb

## 5.0 AIR QUALITY

---

surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Off-road construction equipment is often diesel-powered and can be a substantial source of NO<sub>x</sub> emissions, in addition to PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. As previously stated, the NSAQMD considers emissions in excess of Level C thresholds to have a significant air quality impact. Emissions below Level C thresholds are considered potentially significant and subject to the recommended mitigation of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. Accordingly, implementation of NSAQMD-recommended mitigation measures sufficient to reduce emissions to levels below 137 pounds per day is considered adequate to reduce air quality impacts to a less than significant level. NSAQMD-recommended significance thresholds are defined in **Table 5.0-5**.

In addition, NSAQMD Rule 226, Dust Control, requires the submittal of a Dust Suppression Control Plan to the air district for approval prior to any surface disturbance associated with a construction project. In accordance with NSAQMD Rule 226, Dust Control, a Dust Suppression Control Plan (DSCP) for the Penn Valley project site must be submitted for approval by the Nevada County Community Development Agency and the NSAQMD. The DSCP must identify project phases and construction schedules to be implemented in order to ensure that mitigated construction-generated emissions would not exceed NSAQMD-recommended significance thresholds. The DSCP is required to include, but is not limited to, the following NSAQMD-recommended measures for the control of fugitive dust emissions:

- The project applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
- All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved nontoxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of 6 inches of freeboard in the bed of the transport vehicle.

- Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud which may have resulted from activities at the project site.
- Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.

Predicted maximum daily construction-generated emissions for the Penn Valley site are summarized in **Table 5.0-8**.

**TABLE 5.0-8**  
**CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – PENN VALLEY SITE**  
**(MAXIMUM POUNDS PER DAY)**

Construction Activities	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Grading	5.57	50.59	55.63	0.09	5.40	2.97
Building Construction, Paving & Painting	8.05	37.39	31.93	0.05	2.93	2.42
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
Exceed NSAQMD Level A Threshold?	No	Yes	No	No	No	No
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
Exceed NSAQMD Level B Threshold?	No	No	No	No	No	No

Source: Kunzman Associates. See **Appendix 5.0** for emission model outputs.

As shown in **Table 5.0-8**, short-term daily construction emissions associated with the Penn Valley site would not exceed the Level B significance thresholds; however, the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions. As previously described, development projects estimated to exceed Level A significance thresholds must apply the emission-appropriate measures of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. According to the air district, implementation of the appropriate NSAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

Since the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions during construction of the Penn Valley site, this would be a **potentially significant** impact, and mitigation measure **MM PV-5.2.1a** is required. Mitigation measure **MM PV-5.2.1a** is derived from the NSAQMD's recommended mitigations in order to address generated NO<sub>x</sub> emissions. Mitigation measures **MM PV-5.2.1b** and **MM PV-5.2.1c** would further reduce the project's construction-phase emissions by requiring dust suppression measures to reduce particulate emissions and the use of low-VOC architectural coatings to reduce the generation of VOCs. With implementation of mitigation measures **MM PV-5.2.1a** through **MM PV-5.2.1c**, this impact would be **less than significant**.

**MM PV-5.2.1a** The construction contractor shall submit to the NSAQMD for approval an Off-Road Construction Equipment Emission Reduction Plan prior to ground breaking demonstrating the following:

## 5.0 AIR QUALITY

---

- All off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications unless prior written approval for any exceptions is obtained from the NSAQMD. Note that all off-road equipment must meet all applicable state and federal requirements.
- Emissions from on-site construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions.
- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators (i.e. diesel generators), where feasible.
- Deliveries of construction materials shall be scheduled to direct traffic flow to avoid the peak hours of 7:00–9:00 AM and 4:00–6:00 PM.
- The primary contractor shall use architectural coatings for the proposed structure that have a volatile organic compound (VOC) content no greater than 50 grams/liter of VOC.

*Timing/Implementation:*      *The Off-Road Construction Equipment Emission Reduction Plan shall be submitted and approved prior to issuance of grading permits for the first phase of construction. The plan shall be implemented during all phases of construction.*

*Enforcement/Monitoring:*      *Nevada County Building Department; Northern Sierra Air Quality Management District*

**MM PV-5.2.1b** To reduce impacts of short-term construction, the applicant shall obtain NSAQMD approval of a Dust Control Plan (DCP) which shall include, but not be limited to, the standards provided below to the satisfaction of the NSAQMD. Prior to issuance of grading permits, the developer shall provide a copy of the approved DCP to the County Planning and Building Department and shall include the requirements of DCP as notes on all construction plans. The Building Department shall verify that the requirements of the DCP are being implemented during grading inspections.

Alternatives to open burning of vegetation material on the project site shall be used by the project applicant unless deemed infeasible to the Air Pollution

Control Officer (APCO). Among suitable alternatives is chipping, mulching, or conversion to biomass fuel.

1. The applicant shall implement all dust control measures in a timely manner during all phases of project development and construction.
2. All material excavated, stockpiled or graded shall be sufficiently watered, treated or converted to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
3. All areas (including unpaved roads) with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
4. All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
5. All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
6. All inactive disturbed portions of the development site shall be covered, seeded or watered until a suitable cover is established. Alternatively, the applicant shall be responsible for applying non-toxic soil stabilizers to all inactive construction areas.
7. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance.
8. Paved streets adjacent to the project shall be swept or washed at the end of each day, or as required to removed excessive accumulation of silt and/or mud which may have resulted from activities at the project site.
9. If serpentine or ultramafic rock is discovered during grading or construction the District must be notified no later than the next business day and the California Code of Regulations, Title 17, Section 9315 applies.

*Timing/Implementation:*            *Prior to grading permit issuance and throughout construction phase*

*Enforcement/Monitoring:*        *Nevada County Building Department; Northern Sierra Air Quality Management District*

**MM PV-5.2.1c**

To ensure that the project will not result in the significant generation of VOCs, all architectural coatings shall utilize low-VOC paint (no greater than 50g/L VOC). Prior to building permit issuance, the developer shall submit their list of low-VOC coatings to the NSAQMD for review and approval. The developer shall then provide written verification from NSAQMD that all architectural coatings meet NSAQMD thresholds to be considered "low-VOC." Finally, all building plans shall include a note documenting which low-VOC architectural coatings will be used in construction.

## 5.0 AIR QUALITY

Timing/Implementation: Prior to building permit issuance and throughout construction phase

Enforcement/Monitoring: Nevada County Building Department; Northern Sierra Air Quality Management District

### Long-Term Operational Emissions of Air Pollutants Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)

**Impact 5.2.2(PV)** The Penn Valley project would not result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards. **(Less than Significant with Mitigation Incorporated)**

The project would result in the generation of long-term operational emissions of criteria air pollutants and ozone precursors. Project-generated increases in emissions would be predominantly associated with motor vehicle use. To a lesser extent, area sources, such as the use of natural-gas-fired appliances, landscape maintenance equipment, and architectural coatings, would also contribute to overall increases in emissions. Emissions attributed to energy use would be reduced through compliance with the California Green Building Code described previously.

Long-term operational emissions attributable to the Penn Valley site are summarized in **Table 5.0-9**.

**TABLE 5.0-9  
LONG-TERM OPERATIONAL EMISSIONS – PENN VALLEY SITE (POUNDS PER DAY)**

Source	Emissions					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Summer Emissions</b>						
Area Source	1.19	0.00	0.01	0.00	0.00	0.00
Energy Use	0.00	0.02	0.02	0.00	0.00	0.00
Mobile Source	3.60	6.75	35.85	0.03	2.02	0.59
<b>Total</b>	<b>4.79</b>	<b>6.77</b>	<b>35.87</b>	<b>0.03</b>	<b>2.02</b>	<b>0.59</b>
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
<b>Exceed NSAQMD Level A Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
<b>Exceed NSAQMD Level B Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Kunzman Associates 2016. See **Appendix 5.0** for emission model outputs.

Based on the modeling conducted, daily operational emissions associated with the Penn Valley site would not exceed Level A or Level B significance thresholds, and with implementation of mitigation measure **MM PV-5.2.2**, which would ensure compliance with NSAQMD permitting requirements, operational air quality impacts would be **less than significant**.

Mitigation Measures

**MM PV-5.2.2** The project applicant shall obtain an Authority to Construct Permit from NSAQMD for any source of air contaminants that exist after construction that is not exempt from District permit requirements. All requirements of this permit shall be incorporated into standard operating procedure manuals or materials for the project. Prior to issuance of final occupancy, the developer shall submit written proof (i.e. a letter from NSAQMD and a copy of the permit) to the County Planning and Building Department documenting that they have obtained said permit from NSAQMD.

*Timing/Implementation:* Prior to issuance of final occupancy and throughout project operation

*Enforcement/Monitoring:* Nevada County Building Department; Northern Sierra Air Quality Management District

**Expose Sensitive Receptors to Substantial Carbon Monoxide Pollutant Concentrations (Standard of Significance 2)**

**Impact 5.2.3(PV)** The Penn Valley project would not contribute to localized concentrations of mobile-source carbon monoxide that would exceed applicable ambient air quality standards. **(Less than Significant)**

It has long been recognized that carbon monoxide exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours.<sup>2</sup> However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the carbon monoxide standard. An analysis prepared for CO attainment in Southern California determined that even with approximately 100,000 vehicles per day and an intersection level of service LOS E at peak morning traffic and LOS F at peak afternoon traffic, there was no violation of CO standards.

As described in the traffic analysis prepared for the Penn Valley site (see **Appendix 15.0-B**), the proposed Penn Valley store is projected to generate approximately 583 daily vehicle trips, 35 of which would occur during the morning peak hour and 62 during the evening peak hour. Therefore,

---

<sup>2</sup> Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

## 5.0 AIR QUALITY

---

the proposed Penn Valley store would not increase traffic volumes at any intersection to more than 100,000 vehicles per day. In addition, all of the study area intersections are projected to operate at an acceptable level of service during Existing plus Project traffic conditions and Year 2035 with Project traffic conditions. This impact would be **less than significant**.

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Construction Activities (Standard of Significance 2)**

**Impact 5.2.4(PV)** The proposed Penn Valley project would not result in increased exposure of existing sensitive land uses to construction-source pollutant concentrations that would exceed applicable standards. **(Less than Significant)**

Sensitive land uses are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Construction-related activities would result in temporary, short-term project-generated emissions of diesel particulate matter (diesel PM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

CARB identified particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) as a toxic air contaminant in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003), so diesel PM is the focus of this discussion.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazards Assessment, assessments of health risks posed by air toxics should be based on a 70- or 30-year exposure period (OEHHA 2012, p. 11-3); however, such assessments would be limited to the period/duration of activities associated with the proposed project.

The closest sensitive receptor to the Penn Valley development site is a residence approximately 150 feet to the southwest. As described, health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The use of diesel-powered construction equipment during the construction of the Penn Valley site would be temporary and episodic. As described in Section 2.0, Project Description, construction

activities would primarily occur within a 1.2-acre area. As previously described, according to CARB (2004), construction projects in rural areas encompassing less than 2.4 acres are considered to pose less than significant health risk impacts. Construction projects contained in a site of less than 2.4 acres are generally considered to represent less than significant health risk impacts due to (1) limitations on the off-road diesel equipment able to operate and thus a reduced amount of generated diesel PM, (2) the reduced amount of dust-generating ground disturbance possible compared to larger construction sites, and (3) the reduced duration of construction activities compared to the development of larger sites. Additionally, construction activities would be subject to California regulations limiting idling to no more than 5 minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable diesel PM emissions. For these reasons and because diesel fumes disperse rapidly over relatively short distances, diesel PM generated by construction activities would not expose sensitive receptors to substantial amounts of air toxics.

Another potential source of air toxics associated with construction-related activities includes the airborne entrainment of asbestos due to the disturbance of naturally occurring asbestos-containing soils. Naturally occurring asbestos (NOA) is contained in serpentine and ultramafic rock and has been identified as potentially occurring in several areas throughout the county. As previously stated, CARB has identified NOA as a toxic air contaminant, and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. The Penn Valley site is not located in an area designated by the State of California as likely to contain naturally occurring asbestos (DOC 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

For the reasons described, construction-generated TAC impacts associated with the Penn Valley development site would be **less than significant**.

#### Mitigation Measures

None required.

#### **Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Operations (Standard of Significance 2)**

**Impact 5.2.5(PV)** Operation of the Penn Valley project would not result in increased exposure of existing or planned sensitive land uses to operational-source toxic air contaminant emissions (i.e., diesel PM). **(Less than Significant)**

As stated above, sensitive land uses are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The proposed Penn Valley store is not considered a sensitive land use.

However, for the purpose of deliveries, the proposed Penn Valley store could involve daily heavy-duty truck trips on-site and thus diesel PM emissions. Development projects that involve numerous heavy-duty truck trips on-site create substantial quantities of diesel PM emissions, described as a TAC above, and therefore can negatively affect sensitive land uses. As previously stated,

## 5.0 AIR QUALITY

---

operations that require fewer than 100 delivery trucks daily are not considered a potential health risk.

As noted in Section 2.0, Project Description, it is assumed that the proposed project would have eight small truck/van deliveries per week and one to two semi-truck deliveries per week. Daily deliveries to the proposed commercial building would not require 100 trucks, as a 9,100-square foot discount retail store does not need such large quantities of deliveries in order to operate. The only other heavy-duty trucks visiting the project would be solid waste hauling trucks, and such solid waste service would not result in more than 100 heavy-duty truck trips daily. Since the operations of the proposed Penn Valley store would not generate 100 delivery trucks on a daily basis, sensitive receptors would not be exposed to substantial amounts of air toxics and this impact is **less than significant**.

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Odorous Emissions (Standard of Significance 3)**

**Impact 5.2.6(PV)** The proposed Penn Valley project would not include sources that could create objectionable odors affecting a substantial number of people or expose new residents to existing sources of odor. **(No Impact)**

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Land uses commonly considered to be potential sources of odorous emissions include wastewater treatment plants, sanitary landfills, food processing facilities, chemical manufacturing plants, rendering plants, paint/coating operations, and agricultural feedlots and dairies.

Heavy-duty construction equipment used for the construction of the Penn Valley project would emit odors. However, construction activity would be short term and finite in nature. Furthermore, equipment exhaust odors would dissipate quickly and are common in a suburban environment. For these reasons, the development of the Penn Valley store is not anticipated to create objectionable odors affecting a substantial number of people and thus effects are considered insubstantial.

With respect to permanent odor sources, the proposed project does not include a land use considered to be a source of odors. Therefore, there would be **no impacts** from the proposed Penn Valley project.

### Mitigation Measures

None required.

### 5.3 ROUGH AND READY HIGHWAY SITE

#### 5.3.1 PROJECT-SPECIFIC SETTING

The Rough and Ready Highway site is located in the Nevada County portion of the MCAB, as described above. There are no aspects of the Rough and Ready Highway site or surrounding area that result in air quality effects other than those described in Subsection 5.0.1 above.

The closest sensitive receptor to the Rough and Ready Highway site is a residence directly adjacent to the site to the west.

#### 5.3.2 REGULATORY FRAMEWORK

There are no additional regulations, policies, or standards that pertain to the Rough and Ready Highway site other than those described in Subsection 5.0.2 above.

#### 5.3.3 PROJECT IMPACTS AND MITIGATION MEASURES

##### **Short-Term Construction-Generated Pollutant Emissions Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)**

**Impact 5.3.1(RR)** Construction activities associated with the Rough and Ready Highway site such as clearing, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality for adjacent land uses. **(Less than Significant with Mitigation Incorporated)**

Construction associated with the development of the Rough and Ready Highway project site would generate short-term emissions from activities such as site grading, asphalt paving, building construction, and architectural coatings (e.g., painting). Common construction emissions include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM<sub>10</sub> and PM<sub>2.5</sub> emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Off-road construction equipment is often diesel-powered and can be a substantial source of NO<sub>x</sub> emissions, in addition to PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. As previously stated, the NSAQMD considers emissions in excess of Level C thresholds to have a significant air quality impact. Emissions below Level C thresholds are considered potentially significant and subject to the recommended mitigation of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. Accordingly, implementation of NSAQMD-recommended mitigation measures sufficient to reduce emissions to levels below 137 pounds per day is considered adequate to reduce air quality impacts to a less than significant level. NSAQMD-recommended significance thresholds are defined in **Table 5.0-5**.

In addition, NSAQMD Rule 226, Dust Control, requires the submittal of a Dust Suppression Control Plan to the air district for approval prior to any surface disturbance associated with a construction

## 5.0 AIR QUALITY

---

project. In accordance with NSAQMD Rule 226, Dust Control, a Dust Suppression Control Plan (DSCP) for the Rough and Ready Highway project site must be submitted for approval by the Nevada County Community Development Agency and the NSAQMD. The DSCP must identify project phases and construction schedules to be implemented in order to ensure that mitigated construction-generated emissions would not exceed NSAQMD-recommended significance thresholds. The DSCP is required to include, but is not limited to, the following NSAQMD-recommended measures for the control of fugitive dust emissions:

- The project applicant shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction.
- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
- All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
- All inactive portions of the development site shall be covered, seeded, or watered until a suitable cover is established. Alternatively, the applicant may apply County-approved nontoxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance, and there must be a minimum of 6 inches of freeboard in the bed of the transport vehicle.
- Paved streets adjacent to the project shall be swept or washed at the end of each day, or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud which may have resulted from activities at the project site.
- Prior to final occupancy, the applicant shall re-establish ground cover on the site through seeding and watering in accordance with the local grading ordinance.

Predicted maximum daily construction-generated emissions for the Rough and Ready Highway site are summarized in **Table 5.0-10**.

**TABLE 5.0-10**  
**CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – ROUGH AND READY HIGHWAY SITE**  
**(MAXIMUM POUNDS PER DAY)**

Construction Activities	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Demolition	1.27	9.94	8.60	0.01	0.92	0.71
Grading	3.48	17.89	34.13	0.03	1.74	1.19
Building Construction, Paving & Painting	9.02	28.58	23.59	0.03	2.40	1.89
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
Exceed NSAQMD Level A Threshold?	No	Yes	No	No	No	No
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
Exceed NSAQMD Level B Threshold?	No	No	No	No	No	No

Source: Kunzman Associates 2015b. See **Appendix 5.0** for emission model outputs.

Notes: Emission projections account for the removal of 2,294 cubic yards of material from the Rough and Ready Highway site and subsequent hauling of this material 5 miles to Hansen Brothers Enterprises located at 1172 La Barr Meadows Road in Grass Valley.

As shown in **Table 5.0-10**, short-term daily construction emissions associated with the Rough and Ready Highway site would not exceed the Level B significance thresholds; however, the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions. As previously described, development projects estimated to exceed Level A significance thresholds must apply the emission-appropriate measures of the NSAQMD's (2016) Mitigation for Use During Design and Construction Phases for Classifications as Level B Threshold. Accordingly, implementation of the appropriate NSAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

Since the Level A significance threshold would be surpassed for NO<sub>x</sub> emissions during construction of the Rough and Ready Highway site, this would be a **potentially significant** impact, and mitigation measures **MM RR-5.3.1a** is required. Mitigation measure **MM RR-5.3.1a** is derived from the NSAQMD's recommended mitigations in order to address generated NO<sub>x</sub> emissions. Mitigation measures **MM RR-5.3.1b** and **MM RR-5.3.1c** would further reduce the project's construction-phase emissions by requiring dust suppression measures to reduce particulate emissions and the use of low-VOC architectural coatings to reduce the generation of VOCs. With implementation of mitigation measures **MM RR-5.3.1a** through **MM RR-5.3.1c**, this impact would be **less than significant**.

#### Mitigation Measures

**MM RR-5.3.1a** The construction contractor shall submit to the NSAQMD for approval an Off-Road Construction Equipment Emission Reduction Plan prior to ground breaking demonstrating the following:

- All off-road equipment (portable and mobile) meets or is cleaner than Tier 2 engine emission specifications unless prior written approval for any

## 5.0 AIR QUALITY

---

exceptions is obtained from the NSAQMD. Note that all off-road equipment must meet all applicable state and federal requirements.

- Emissions from on-site construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions.
- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators (i.e. diesel generators), where feasible.
- Deliveries of construction materials shall be scheduled to direct traffic flow to avoid the peak hours of 7:00–9:00 AM and 4:00–6:00 PM.
- The primary contractor shall use architectural coatings for the proposed structure that have a volatile organic compound (VOC) content no greater than 50 grams/liter of VOC.

*Timing/Implementation:*      *The Off-Road Construction Equipment Emission Reduction Plan shall be submitted and approved prior to issuance of grading permits for the first phase of construction. The plan shall be implemented during all phases of construction.*

*Enforcement/Monitoring:*      *Nevada County Building Department; Northern Sierra Air Quality Management District*

### **MM RR-5.3.1b**

To reduce impacts of short-term construction, the applicant shall obtain NSAQMD approval of a Dust Control Plan (DCP) which shall include, but not be limited to, the standards provided below to the satisfaction of the NSAQMD. Prior to issuance of grading permits, the developer shall provide a copy of the approved DCP to the County Planning and Building Department and shall include the requirements of DCP as notes on all construction plans. The Building Department shall verify that the requirements of the DCP are being implemented during grading inspections.

Alternatives to open burning of vegetation material on the project site shall be used by the project applicant unless deemed infeasible to the Air Pollution Control Officer (APCO). Among suitable alternatives is chipping, mulching, or conversion to biomass fuel.

1. The applicant shall implement all dust control measures in a timely manner during all phases of project development and construction.
2. All material excavated, stockpiled or graded shall be sufficiently watered, treated or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
3. All areas (including unpaved roads) with vehicle traffic shall be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
4. All land clearing, grading, earth moving, or excavation activities on a project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph.
5. All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads.
6. All inactive disturbed portions of the development site shall be covered, seeded or watered until a suitable cover is established. Alternatively, the applicant shall be responsible for applying non-toxic soil stabilizers to all inactive construction areas.
7. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance.
8. Paved streets adjacent to the project shall be swept or washed at the end of each day, or as required to removed excessive accumulation of silt and/or mud which may have resulted from activities at the project site.
9. If serpentine or ultramafic rock is discovered during grading or construction the District must be notified no later than the next business day and the California Code of Regulations, Title 17, Section 9315 applies.

*Timing/Implementation:*            *Prior to grading permit issuance and throughout construction phase*

*Enforcement/Monitoring:*        *Nevada County Building Department; Northern Sierra Air Quality Management District*

**MM RR-5.3.1c**

To ensure that the project will not result in the significant generation of VOCs, all architectural coatings shall utilize low-VOC paint (no greater than 50g/L VOC). Prior to building permit issuance, the developer shall submit their list of low-VOC coatings to the NSAQMD for review and approval. The developer shall then provide written verification from NSAQMD that all architectural coatings meet NSAQMD thresholds to be considered "low-VOC." Finally, all building plans shall include a note documenting which low-VOC architectural coatings will be used in construction.

*Timing/Implementation:*            *Prior to building permit issuance and throughout construction phase*

## 5.0 AIR QUALITY

Enforcement/Monitoring: Nevada County Building Department; Northern Sierra Air Quality Management District

### Long-Term Operational Emissions of Air Pollutants Resulting in Violation of Air Quality Standards or Contributing to Existing Violations (Standard of Significance 1)

**Impact 5.3.2(RR)** The Rough and Ready Highway project would not result in long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards. **(Less than Significant with Mitigation Incorporated)**

The project would result in the generation of long-term operational emissions of criteria air pollutants and ozone precursors. Project-generated increases in emissions would be predominantly associated with motor vehicle use. To a lesser extent, area sources, such as the use of natural-gas-fired appliances, landscape maintenance equipment, and architectural coatings, would also contribute to overall increases in emissions. Emissions attributed to energy use would be reduced through compliance with the California Green Building Code described previously.

Long-term operational emissions attributable to the Rough and Ready Highway site are summarized in **Table 5.0-11**.

**TABLE 5.0-11  
LONG-TERM OPERATIONAL EMISSIONS – ROUGH AND READY HIGHWAY SITE (POUNDS PER DAY)**

Source	Emissions					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Summer Emissions</b>						
Area Source	1.12	0.00	0.00	0.00	0.00	0.00
Energy Use	0.00	0.03	0.02	0.00	0.00	0.00
Mobile Source	3.93	7.28	38.33	0.03	2.03	0.60
<b>Total</b>	<b>5.05</b>	<b>7.31</b>	<b>38.36</b>	<b>0.03</b>	<b>2.03</b>	<b>0.60</b>
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
<b>Exceed NSAQMD Level A Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
<b>Exceed NSAQMD Level B Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Kunzman Associates 2015b. See **Appendix 5.0** for emission model outputs.

Based on the modeling conducted, daily operational emissions associated with the Rough and Ready Highway site would not exceed Level A or Level B significance thresholds, and with implementation of mitigation measure **MM RR-5.3.2**, which would ensure compliance with NSAQMD permitting requirements, operational air quality impacts would be **less than significant**.

Mitigation Measures

**MM RR-5.3.2** The project applicant shall obtain an Authority to Construct Permit from NSAQMD for any source of air contaminants that exist after construction that is not exempt from District permit requirements. All requirements of this permit shall be incorporated into standard operating procedure manuals or materials for the project. Prior to issuance of final occupancy, the developer shall submit written proof (i.e. a letter from NSAQMD and a copy of the permit) to the County Planning and Building Department documenting that they have obtained said permit from NSAQMD.

*Timing/Implementation:* Prior to issuance of final occupancy and throughout project operation

*Enforcement/Monitoring:* Nevada County Building Department; Northern Sierra Air Quality Management District

### **Expose Sensitive Receptors to Substantial Carbon Monoxide Pollutant Concentrations (Standard of Significance 2)**

**Impact 5.3.3(RR)** The Rough and Ready Highway project would not contribute to localized concentrations of mobile-source carbon monoxide that would exceed applicable ambient air quality standards. **(Less than Significant)**

It has long been recognized that carbon monoxide exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours.<sup>3</sup> However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the carbon monoxide standard. An analysis prepared for CO attainment in Southern California determined that even with approximately 100,000 vehicles per day and an intersection level of service LOS E at peak morning traffic and LOS F at peak afternoon traffic, there was no violation of CO standards.

As described in the traffic analysis prepared for the Rough and Ready Highway site (see **Appendix 15.0-C**), the proposed Rough and Ready Highway store is projected to generate approximately 583 daily vehicle trips, 35 of which would occur during the morning peak hour and 62 during the

---

<sup>3</sup> Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

## 5.0 AIR QUALITY

---

evening peak hour. Therefore, the proposed Rough and Ready Highway store would not increase traffic volumes at any intersection to more than 100,000 vehicles per day. In addition, all of the study area intersections are projected to operate at an acceptable level of service during Existing plus Project traffic conditions and Year 2035 with Project traffic conditions with improvements identified in the traffic study. This impact would be **less than significant**.

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Construction Activities (Standard of Significance 2)**

**Impact 5.3.4(RR)** The proposed Rough and Ready Highway project would not result in increased exposure of existing sensitive land uses to construction-source pollutant concentrations that would exceed applicable standards. **(Less than Significant)**

Sensitive land uses are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Construction-related activities would result in temporary, short-term project-generated emissions of diesel particulate matter (diesel PM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary toxic air contaminant of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

CARB identified particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) as a toxic air contaminant in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003), so diesel PM is the focus of this discussion.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazards Assessment, assessments of health risks posed by air toxics should be based on a 70- or 30-year exposure period (OEHHA 2012, p. 11-3); however, such assessments would be limited to the period/duration of activities associated with the proposed project.

The closest sensitive receptor to the Rough and Ready Highway site is a residence directly adjacent to the site to the west. As described in Section 2.0, Project Description, construction activities would primarily occur within a 1.02-acre area. As previously described, according to

CARB (2004), construction projects in rural areas encompassing less than 2.4 acres are considered to pose less than significant health risk impacts. For these reasons and because diesel fumes disperse rapidly over relatively short distances, diesel PM generated by construction activities would not be expected to expose sensitive receptors to substantial amounts of air toxics.

Another potential source of air toxics associated with construction-related activities includes the airborne entrainment of asbestos due to the disturbance of naturally occurring asbestos-containing soils. Naturally occurring asbestos (NOA) is contained in serpentine and ultramafic rock and has been identified as potentially occurring in several areas throughout the county. As previously stated, CARB has identified NOA as a toxic air contaminant, and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. The Rough and Ready Highway site is not located in an area designated by the State of California as likely to contain naturally occurring asbestos (DOC 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

For the reasons described, construction-generated TAC impacts associated with the Rough and Ready Highway site would be **less than significant**.

Mitigation Measures

None required.

**Exposure of Sensitive Receptors to Substantial Air Pollutant Concentrations During Operations (Standard of Significance 2)**

**Impact 5.3.5(RR)** The Rough and Ready Highway project would not result in increased exposure of existing or planned sensitive land uses to operational-source toxic air contaminant emissions (i.e., diesel PM). **(Less than Significant)**

As stated above, sensitive land uses are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The proposed Rough and Ready Highway store is not considered a sensitive land use.

However, for the purpose of deliveries, the proposed Rough and Ready Highway store could involve numerous heavy-duty truck trips on-site daily and thus diesel PM emissions. As previously stated, operations that require fewer than 100 delivery trucks daily are not considered a potential health risk.

As noted in Section 2.0, Project Description, it is assumed that the proposed project would have eight small truck/van deliveries per week and one to two semi-truck deliveries per week. Daily deliveries to the proposed commercial building would not require 100 trucks as a 9,100-square-foot discount retail store does not need such large quantities of deliveries in order to operate. The only other heavy-duty trucks visiting the project would be solid waste hauling trucks, and such solid waste service would not result in more than 100 heavy-duty truck trips daily. Since the operations of the proposed Rough and Ready Highway store would not generate 100 delivery trucks on a daily basis, sensitive receptors would not be exposed to substantial amounts of air toxics and this impact is **less than significant**.

## 5.0 AIR QUALITY

---

### Mitigation Measures

None required.

### **Exposure of Sensitive Receptors to Odorous Emissions (Standard of Significance 3)**

**Impact 5.3.6(RR)** The proposed Rough and Ready Highway project would not include sources that could create objectionable odors affecting a substantial number of people or expose new residents to existing sources of odor. **(No Impact)**

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Land uses commonly considered to be potential sources of odorous emissions include wastewater treatment plants, sanitary landfills, food processing facilities, chemical manufacturing plants, rendering plants, paint/coating operations, and agricultural feedlots and dairies.

Heavy-duty construction equipment used for the construction of the Rough and Ready Highway project site would emit odors. However, construction activity would be short term and finite in nature. Furthermore, equipment exhaust odors would dissipate quickly and are common in a suburban environment. For these reasons, the development of the Rough and Ready Highway store is not anticipated to create objectionable odors affecting a substantial number of people and thus effects are considered insubstantial.

With respect to permanent odor sources, the proposed project does not include a land use considered to be a source of odors. Therefore, there would be **no impacts** from the proposed Rough and Ready Highway store.

### Mitigation Measures

None required.

## **5.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES**

### CUMULATIVE SETTING

The cumulative setting for air quality includes Nevada County in its entirety and the Mountain Counties Air Basin. Nevada County is currently designated nonattainment for ozone and PM<sub>10</sub> standards. Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards. The proposed projects would not individually generate substantial odors, and the sites are not located such that they could combine with one another or other odor sources to generate increases in cumulative odors, so this impact is not further addressed.

### CUMULATIVE IMPACTS AND MITIGATION MEASURES

### **Contribution to Cumulative Regional Air Quality Conditions (Standards of Significance 4 and 5)**

**Impact 5.4.1** The proposed projects, in combination with existing, approved, proposed, and reasonably foreseeable development in the Mountain Counties Air Basin, would contribute to cumulative increases in emissions of ozone-precursor

pollutants (ROG and NO<sub>x</sub>) and PM<sub>10</sub> that could contribute to future concentrations of ozone and PM<sub>10</sub>, for which the region is currently designated nonattainment. **(Less than Cumulatively Considerable with Mitigation Incorporated)**

The county is designated nonattainment status for ozone and PM<sub>10</sub>. As a nonattainment area, the NSAQMD is required to prepare a federally enforceable State Implementation Plan (SIP) for western Nevada County in accordance with the Clean Air Act. The SIP is an air quality attainment plan designed to reduce emissions of ozone precursors enough to re-attain the federal ozone standard by the earliest practicable date. The air quality attainment plan (titled Reasonably Available Control Technology State Implementation Plan Revision for Western Nevada County 8-Hour Ozone Non-Attainment Area) includes various pollution control strategies. Overall emissions of ozone precursors must be reduced in western Nevada County (consistent with Reasonable Further Progress requirements specified in the Clean Air Act) until attainment is reached. Because the county is designated nonattainment status for ozone and PM<sub>10</sub>, the cumulative impact is considered significant if no mitigation is applied.

Due to the county's nonattainment status for ozone and PM<sub>10</sub>, if project-generated emissions of either of the ozone-precursor pollutants (i.e., ROG and NO<sub>x</sub>) or PM<sub>10</sub> would exceed NSAQMD-recommended significance thresholds, a proposed project's cumulative impacts would be considered significant, and the project would be inconsistent with the SIP. As discussed above, predicted short-term construction-generated emissions associated with each of the three development sites would surpass the NSAQMD Level A significance threshold for NO<sub>x</sub> emissions; however, the air district considers emissions that exceed the Level A threshold to be potentially significant, subject to mitigation in order to be considered less than significant. Mitigation measures **MM AS-5.1.1a**, **MM PV-5.2.1a**, and **MM RR-5.3.1a** were derived from the NSAQMD's recommended mitigations in order to address generated NO<sub>x</sub> emissions. With implementation of this mitigation, construction-related air quality impacts would not conflict with the SIP and would also be considered **less than cumulatively considerable with mitigation incorporated**.

In addition, operational emissions associated with each of the project sites would not surpass NSAQMD significance thresholds and therefore do not conflict with the goals of the SIP or contribute to cumulative air quality impacts on an individual basis. However, each of the three project sites would be operational simultaneously. Nonetheless, as shown in **Table 5.0-12**, the combined operations of the three proposed stores would still not surpass NSAQMD significance thresholds, and therefore would also not conflict with the goals of the SIP, and would also be considered less than cumulatively considerable, collectively. For these reasons, the proposed projects' contribution to this impact would be considered **less than cumulatively considerable**.

## 5.0 AIR QUALITY

**TABLE 5.0-12  
LONG-TERM OPERATIONAL EMISSIONS – ALL SITES COMBINED (POUNDS PER DAY)**

Source	Emissions					
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Summer Emissions</b>						
Area Source	3.44	0.00	0.01	0.00	0.00	0.00
Energy Use	0.00	0.08	0.06	0.00	0.00	0.00
Mobile Source	8.91	15.31	79.77	0.06	4.07	1.21
<b>Total</b>	<b>15.35</b>	<b>22.14</b>	<b>115.69</b>	<b>0.09</b>	<b>6.10</b>	<b>2.41</b>
NSAQMD Level A Threshold	< 24 pounds/day	< 24 pounds/day	None	None	< 79 pounds/day	None
<b>Exceed NSAQMD Level A Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
NSAQMD Level B Threshold	24–136 pounds/day	24–136 pounds/day	None	None	79–136 pounds/day	None
<b>Exceed NSAQMD Level B Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Kunzman Associates 2015a, 2015b, 2016. See **Appendix 5.0** for emission model outputs.

### Mitigation Measures

Implement mitigation as follows:

Alta Sierra project: Implement mitigation measure **MM AS-5.1.1a**.

Penn Valley project: Implement mitigation measure **MM PV-5.2.1a**.

Rough and Ready Highway project: Implement mitigation measure **MM RR-5.3.1a**.

**REFERENCES**

- CAPCOA (California Air Pollution Control Officers Association). 2009. *Health Risk Assessments for Proposed Land Use Projects*.
- . 2011. *Health Effects*.
- CARB (California Air Resources Board). 2003. *HARP User Guide*.
- . 2004. *Air Pollution Control at Construction Sites*. [Prepared by the Swiss Agency for the Environment, Forests, and Landscapes].  
[https://www.arb.ca.gov/msprog/ordiesel/documents/VU\\_5024\\_E.pdf](https://www.arb.ca.gov/msprog/ordiesel/documents/VU_5024_E.pdf).
- . 2015. State and Federal Area Designation Maps.  
<http://www.arb.ca.gov/desig/adm/adm.htm>.
- . 2016a. *Air Quality Data Statistics*.  
<https://www.arb.ca.gov/adam/topfour/topfourdisplay.phpl>.
- . 2016b. *Ambient Air Quality Standards*. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
- DOC (California Department of Conservation). 2000. *A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos*.
- EPA (US Environmental Protection Agency). 2002. *Health Assessment Document for Diesel Engine Exhaust*.
- Kunzman Associates, Inc. 2015a. *Dollar General – Alta Sierra Project Air Quality/Greenhouse Gas Emissions Analysis*.
- . 2015b. *Dollar General – Grass Valley Air Quality/Greenhouse Gas Emissions Analysis*.
- . 2016. *Dollar General – Penn Valley Project Air Quality/Greenhouse Gas Emissions Analysis*.
- Nevada County. 1996. *Nevada County General Plan, Volume I: Goals, Objectives, Policies and Implementation Measures*. Updated 2008, 2010, and 2014.
- NSAQMD (Northern Sierra Air Quality Management District). 2009. *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*. Revised May 31, 2016.
- OEHHA (Office of Environmental Health Hazard Assessment). 2007. *Air Toxicology and Epidemiology: Air Pollution and Children's Health*.  
[http://oehha.ca.gov/public\\_info/facts/airkids.html](http://oehha.ca.gov/public_info/facts/airkids.html).
- . 2012. *Technical Support Document for Exposure Assessment and Stochastic Analysis*.  
<http://oehha.ca.gov/media/downloads/cnrn/chapter112012.pdf>.

## 5.0 AIR QUALITY

---

This page intentionally left blank.