

## 3.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable air quality regulations, and an analysis of potential short-term and long-term air quality impacts that could result from implementation of the Project. The primary source of information used for this analysis is the General Plan EIR (City of Elk Grove 2018, 2019).

The Sacramento Metropolitan Air Quality Management District (SMAQMD) submitted a comment in response to the notice of preparation (NOP). The letter included recommendations for what to evaluate in this air quality analysis. Specifically, the comment letter recommended that the Project be reviewed for consistency with applicable plans, potential cancer risk, and impacts to transit. Consistency with applicable plans is evaluated in the impact discussions in this section. Table 3.2-5 presents data regarding potential annual incremental health incidences. Effects on transit are discussed in Section 3.9, "Transportation," of this Draft SEIR.

### 3.2.1 Regulatory Setting

Ambient air quality in the City and Planning Area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy making, education, and a variety of programs. The agencies responsible for improving the air quality in the air basin in which the Project area is located are discussed below.

#### FEDERAL

In *Massachusetts et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that CO<sub>2</sub> is an air pollutant as defined under the federal Clean Air Act (CAA) and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions. In 2010, the EPA started to address GHG emissions from stationary sources through its New Source Review permitting program, including operating permits for "major sources" issued under Title V of the CAA.

The National Highway Traffic Safety Administration (NHTSA) also regulates vehicle emissions through the Corporate Average Fuel Economy (CAFE) Standards.

The CAFE Standards, which were first enacted by Congress in 1975, set fleet-wide averages that must be achieved by each automaker for its car and truck fleet. The purpose of the CAFE Standards is to reduce energy consumption by increasing the fuel economy of cars and light trucks. On April 1, 2022, Transportation Secretary Pete Buttigieg unveiled new CAFE standards for 2024–2026 model year passenger cars and light-duty trucks, requiring new vehicles sold in the US to average at least 40 miles per gallon.

#### Criteria Air Pollutants

The CAA required EPA to establish the national ambient air quality standards (NAAQS) (42 United States Code Section 7409). As shown in Table 3.2-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide, respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM<sub>10</sub>), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM<sub>2.5</sub>), and lead. The primary standards protect the public health, and the secondary standards protect public welfare. The CAA also requires each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal CAA amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. Individual SIPs are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or

implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

### **Toxic Air Contaminants/Hazardous Air Pollutants**

Toxic air contaminants (TAC), or, in federal parlance, hazardous air pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. A substance that is listed as a HAP pursuant to subsection (b) of Section 112 of the CAA (42 United States Code Section 7412[b]) is considered a TAC. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, and genetic damage, or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which ambient standards have been established (Table 3.2-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and, in California, the California Air Resources Board (CARB) regulate HAPs and TACs, respectively, through statutes (i.e., 42 United States Code Section 7412[b]) and regulations that generally require the use of the maximum achievable control technology or best available control technology (BACT) for toxics to limit emissions.

**Table 3.2-1 National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California (CAAQS) <sup>ab</sup>	National (NAAQS) <sup>c</sup>	
			Primary <sup>bd</sup>	Secondary <sup>be</sup>
Ozone	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	— <sup>e</sup>	Same as primary standard
	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.070 ppm (137 µg/m <sup>3</sup> )	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	Same as primary standard
	8-hour	9 ppm <sup>f</sup> (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	
Nitrogen dioxide (NO <sub>2</sub> )	Annual arithmetic mean	0.030 ppm (57 µg/m <sup>3</sup> )	53 ppb (100 µg/m <sup>3</sup> )	Same as primary standard
	1-hour	0.18 ppm (339 µg/m <sup>3</sup> )	100 ppb (188 µg/m <sup>3</sup> )	—
Sulfur dioxide (SO <sub>2</sub> )	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	—	—
	3-hour	—	—	0.5 ppm (1,300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (655 µg/m <sup>3</sup> )	75 ppb (196 µg/m <sup>3</sup> )	—
Respirable particulate matter (PM <sub>10</sub> )	Annual arithmetic mean	20 µg/m <sup>3</sup>	—	Same as primary standard
	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	
Fine particulate matter (PM <sub>2.5</sub> )	Annual arithmetic mean	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>
	24-hour	—	35 µg/m <sup>3</sup>	Same as primary standard
Lead <sup>f</sup>	Calendar quarter	—	1.5 µg/m <sup>3</sup>	Same as primary standard
	30-day average	1.5 µg/m <sup>3</sup>	—	—
	Rolling 3-month average	—	0.15 µg/m <sup>3</sup>	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m <sup>3</sup> )	No national standards	
Sulfates	24-hour	25 µg/m <sup>3</sup>		
Vinyl chloride <sup>f</sup>	24-hour	0.01 ppm (26 µg/m <sup>3</sup> )		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m<sup>3</sup> = micrograms per cubic meter; CAAQS = California ambient air quality standards; km = kilometers; mg/m<sup>3</sup> = milligrams per cubic meter; NAAQS = national ambient air quality standards; ppb = parts per billion; ppm = parts per million (by volume).

<sup>a</sup> California standards for ozone, carbon monoxide, SO<sub>2</sub> (1- and 24-hour), NO<sub>2</sub>, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

<sup>b</sup> Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

<sup>c</sup> National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM<sub>10</sub> 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. The PM<sub>2.5</sub> 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

<sup>d</sup> National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

<sup>e</sup> National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

<sup>f</sup> The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. This allows for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources: EPA 2016; CARB 2019a.

## STATE

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) (California Health and Safety Code Section 40910). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 3.2-1).

### Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the State endeavor to attain and maintain the CAAQS by the earliest date practical. It specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and it provides air districts with the authority to regulate indirect emission sources.

CARB regulates emission of criteria air pollutants through several programs, regulations, and plans. The 2022 State SIP Strategy (2022 SIP) serves as compilation document of all actions taken by CARB and local air districts to further the attainment of the NAAQS. Pertinent regulations to the project included in the 2022 SIP include, but are not limited to, the Advanced Clean Cars II Program, Advanced Clean Fleets, and Zero-Emissions Trucks Measure, which all serve to electrify the transportation sector through sales requirements for benchmark years (CARB 2022).

### Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

AB 617 of 2017 (California Health and Safety Code Section 39607.1) aims to help protect air quality and public health in communities around stationary sources of pollution including facilities subject to the State's cap-and-trade program for GHG emissions. AB 617 imposes a new State-mandated local program to address non-vehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. AB 617 requires CARB to identify high-pollutant areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. AB 617 addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of

TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan and other regulatory programs, it is estimated that emissions of diesel PM will be less than half of those in 2010 by 2035 (CARB 2020). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

## LOCAL

### Sacramento Metropolitan Air Quality Management District

#### Criteria Air Pollutants

SMAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the CAA requirements to attain and maintain the NAAQS for ozone. The Sacramento Region has been designated as a "moderate" 2015 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019 (EPA 2020a). The 2018 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan was approved by CARB on November 16, 2017. The previous 2013 Update to the 8-Hour Ozone Attainment and Reasonable Further Progress Plan was approved and promulgated by EPA for the 1997 8-Hour Ozone Standard. EPA has not released a notice of approval and promulgation of the 2017 SIP (CARB 2017).

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. After SMAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SMAQMD. SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects are subject to adopted SMAQMD rules and regulations in effect at the time of construction. Specific rules relevant to the construction of future development under the Project may include the following:

- ▶ **Rule 201: General Permit Requirements.** Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to obtain permit(s) from SMAQMD before equipment operation. The Applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine greater than 50 horsepower must have a SMAQMD permit or CARB portable equipment registration.
- ▶ **Rule 202: New Source Review.** The purpose of this rule is to provide for the issuance of authorities to construct and permits to operate at new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.
- ▶ **Rule 207: Federal Operating Permit.** The purpose this rule is to establish an operating permitting system consistent with the requirements of Title V of the United States Code and pursuant to 40 FR Part 70. Stationary sources subject to the requirements of this rule are also required to comply with any other applicable federal, state, or SMAQMD orders, rules and regulations, including requirements pertaining to prevention of significant deterioration pursuant to Rule 203, requirements to obtain an authority to construct pursuant to Rule 201, or applicable requirements under SMAQMD's new source review rule in the SIP.
- ▶ **Rule 402: Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons

or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- ▶ **Rule 403: Fugitive Dust.** The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project site. Fugitive dust controls include the following:
  - Water all exposed surfaces two times daily.
  - Cover or maintain at least two feet of free board on haul trucks transporting soil, sand, or other loose material on the site.
  - Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day.
  - Limit vehicle speeds on unpaved roads to 15 miles per hour.
  - All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
  - Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes.
  - Maintain all construction equipment in proper working condition according to manufacturer's specifications.
- ▶ **Rule 442: Architectural Coatings.** The purpose of this rule is to limit the emissions of volatile organic compounds from the use of architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within Sacramento County.
- ▶ **Rule 902: Asbestos.** The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of material containing asbestos.

In addition, if modeled construction-generated emissions for a project are not reduced to levels below SMAQMD's mass emission threshold (of 85 pounds per day [lb/day] for nitrogen oxide [NO<sub>x</sub>], 80 lb/day or 13.2 tons per year (tpy) for PM<sub>10</sub>, and 82 lb/day or 15 tpy for PM<sub>2.5</sub>) after the standard construction mitigation is applied, then SMAQMD requires an offsite construction mitigation fee to purchase offsite emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies (SMAQMD 2019).

As discussed in greater detail under the headings, "Thresholds of Significance," and "Methodology," the Thresholds of Significance have been developed in consideration of long-term regional air quality planning. Projects that are found to emit emissions in exceedance of these bright-line thresholds would generate a cumulatively considerable contribution of regional air pollution which could obstruct the region's attainment of the NAAQS and/or CAAQS, or cause a localized exceedance of these concentration-based standards within the SVAB. Conversely, projects that emit levels of air pollution below these thresholds would not affect the SVAB's ability to attain the NAAQS and/or CAAQS.

Also discussed in greater detail under the heading, "Methodology," SMAQMD has released several versions of guidance in response to the California Supreme Court Case *Sierra Club v. County of Fresno* (2018) 6 Cal.App.5th 503 (herein referred to as the Friant Ranch Decision). The Final Guidance, released in October 2020, is discussed in greater detail under the heading, "Methodology."

### Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures for TACs. Under SMAQMD Rule 201 ("General Permit Requirements"), Rule 202 ("New Source Review"), and Rule 207 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SMAQMD limits emissions and public exposure to TACs through a number of programs. SMAQMD prioritizes TAC-emitting stationary sources based on the quantity

and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

### Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD's Rule 402 ("Nuisance") regulates odors.

### **City of Elk Grove General Plan**

The following policies in the Elk Grove General Plan are relevant to the analysis of air quality effects (City of Elk Grove 2019).

- ▶ **Policy H-2-3:** Support energy-conserving programs in the production and rehabilitation of affordable housing to reduce household energy costs, improve air quality, and mitigate potential impacts of climate change in the region.
- ▶ **Policy NR-4-1:** Require all new development projects which have the potential to result in substantial air quality impacts to incorporate design, and/or operational features that result in a reduction in emissions equal to 15 percent compared to an "unmitigated baseline project." An unmitigated baseline project is a development project which is built and/or operated without the implementation of trip reduction, energy conservation, or similar features, including any such features which may be required by the Zoning Code or other applicable codes.
- ▶ **Policy NR-4-3:** Implement and support programs that reduce mobile source emissions.
- ▶ **Policy NR-4-4:** Promote pedestrian/bicycle access and circulation to encourage residents to use alternative modes of transportation in order to minimize direct and indirect emissions of air contaminants.
- ▶ **Policy NR-4-5:** Emphasize demand management strategies that seek to reduce single-occupant vehicle use in order to achieve State and federal air quality plan objectives.
- ▶ **Policy NR-4-8:** Require that development projects incorporate best management practices during construction activities to reduce emissions of criteria pollutants.
- ▶ **Policy NR-5-2:** Improve the health and sustainability of the community through improved regional air quality and reduction of greenhouse gas emissions that contribute to climate change.
- ▶ **Policy N-1-7:** The standards outlined in Table 8-4 shall not apply to transportation- and City infrastructure-related construction activities as long as construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends and federally recognized holidays. Work may occur beyond these time frames for construction safety or because of existing congestion that makes completing the work during these time frames infeasible.

### **City of Elk Grove Municipal Code**

Elk Grove Municipal Code (EGMC) Chapter 16.07 provides permitting guidance for electric vehicle (EV) charging stations. Municipal Code Sections 16.07.200 through 16.07.500 summarize the streamlined permitting process for installation of EV charging stations, including provisions pertaining to the completion of a technical review checklist that ensures that installation of an EV charging station would not result in any adverse environmental or health effects. As stated in Municipal Code Section 16.07.400, "the intent of this chapter [is] to encourage the installation of electric vehicle charging stations by removing obstacles to permitting for charging stations so long as the action does not supersede the Building Official's authority to address higher priority, life-safety situations."

EGMC Section 23.58.120 requires one "EV ready" parking space for all new one-family and two-family dwelling units. This section also implements the requirements of Part 6 of the 2022 Title 24 California Building Code (CalGreen Code) for multi-family residential units and non-residential land uses.

EGMC 6.32 details the City's noise standards, including allowed hours for construction. Consistent with General Plan Policy Noise Policy NO-1-7, EGMC Section 6.32.100 limits construction activities within the proximity of sensitive receptors to 7 a.m. to 7 p.m., thus minimizing exposure of air pollution to nearby receptors. Monday through Friday and 8 a.m. and 5 p.m.

on weekends and federally recognized holidays. Section 6.32.100 states that construction activities not located near residential uses may be allowed to occur between 6 a.m. and 8 p.m. Also, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 7 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

EGMC 23.60.050 directs development to comply with the relevant rules and regulations pertaining to odors and particulate matter overseen by SMAQMD. EGMC 23.60.050 also directs sources of odors to be modified to prevent the release of noxious odorous emissions, with the exception of agricultural operations.

## 3.2.2 Environmental Setting

Elk Grove is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties; the western portion of Placer County; and the eastern portion of Solano County. The ambient concentrations of air pollutants are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

### CLIMATE, METEOROLOGY, AND TOPOGRAPHY

The SVAB is a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta (Delta) from the San Francisco Bay area.

The Mediterranean climate type of the SVAB is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50 degrees Fahrenheit (°F) to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature. Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter months. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49°F. Also characteristic of SVAB winters are periods of dense and persistent low-level fog, which are most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. The highest frequency of poor air movement occurs in the fall and winter when high-pressure cells are often present over the SVAB. The lack of surface wind during these periods, combined with the reduced vertical flow caused by a decline in surface heating, reduces the influx of air and leads to the concentration of air pollutants under stable meteorological conditions. Surface concentrations of air pollutant emissions are highest when these conditions occur in combination with agricultural burning activities or with temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings with the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gas (ROG) and NO<sub>x</sub>, which result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air



pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating the ambient air quality standards.

The local meteorology of the City and surrounding area is represented by measurements recorded at the Western Regional Climate Center Sacramento Executive Airport Station. The normal annual precipitation is approximately 17.24 inches. January temperatures range from a normal minimum of 37.8°F to a normal maximum of 53.5°F. July temperatures range from a normal minimum of 58.2°F to a normal maximum of 92.7°F (WRCC 2016). The prevailing wind direction is from the south (WRCC 2002).

## CRITERIA AIR POLLUTANTS

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. Ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> are the criteria air pollutants of primary concern in this analysis due to their nonattainment status with respect to the applicable NAAQS and/or CAAQS in the SVAB. Brief descriptions of these key criteria air pollutants in the SVAB and their health effects are provided below. The attainment statuses of all criteria air pollutants with respect to the NAAQS and the CAAQS in Sacramento County are shown in Table 3.2-2.

**Table 3.2-2 Attainment Status Designations for Sacramento County**

Pollutant	National Ambient Air Quality Standard	California Ambient Air Quality Standard
Ozone	Attainment (1-hour) <sup>1</sup>	Nonattainment (1-hour) Classification-Serious <sup>2</sup>
	Nonattainment (8-hour) <sup>3</sup> Classification=Moderate	Nonattainment (8-hour) Nonattainment (8-hour)
Respirable particulate matter (PM <sub>10</sub> )	Attainment (24-hour)	Nonattainment (24-hour)
	Attainment (24-hour)	Nonattainment (Annual)
Fine particulate matter (PM <sub>2.5</sub> )	Nonattainment (24-hour)	(No State Standard for 24-Hour)
	Attainment (Annual)	Attainment (Annual)
Carbon monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO <sub>2</sub> )	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (Annual)	Attainment (Annual)
Sulfur dioxide (SO <sub>2</sub> ) <sup>4</sup>	(Attainment Pending) (1-Hour)	Attainment (1-hour)
	(Attainment Pending) (1-Hour)	Attainment (24-hour)
Lead (Particulate)	Attainment (3-month rolling avg.)	Attainment (30 day average)
Hydrogen Sulfide	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly Reducing Particles		Unclassified (8-hour)
Vinyl Chloride		Unclassified (24-hour)

Notes: NAAQS = national ambient air quality standards; CAAQS = California ambient air quality standards

<sup>1</sup> Air Quality meets federal 1-hour Ozone standard (77 FR 64036). EPA revoked this standard, but some associated requirements still apply. SMAQMD attained the standard in 2009. SMAQMD has requested EPA recognize attainment to fulfill the requirements.

<sup>2</sup> Per Health and Safety Code Section 40921.5(c), the classification is based on 1989–1991 data, and therefore does not change.

<sup>3</sup> 2015 Standard.

<sup>4</sup> 2010 Standard.

Source: CARB 2019b.

## Ozone

Ground-level ozone is not emitted directly into the air but is created by chemical reactions between ROG and NO<sub>x</sub>. This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful air pollutant because of its effects on people and the environment and is the main ingredient in smog (EPA 2020b).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2020b). Emissions of the ozone precursors ROG and NO<sub>x</sub> have decreased over the past two decades because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2013).

## Nitrogen Dioxide

NO<sub>2</sub> is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO<sub>2</sub> are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO<sub>2</sub>. The combined emissions of NO and NO<sub>2</sub> are referred to as NO<sub>x</sub> and are reported as equivalent NO<sub>2</sub>. Because NO<sub>2</sub> is formed and depleted by reactions associated with photochemical smog (ozone), the NO<sub>2</sub> concentration in a particular geographical area may not be representative of the local sources of NO<sub>x</sub> emissions (EPA 2020b).

Acute health effects of exposure to NO<sub>x</sub> includes coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, or pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2020b).

## Particulate Matter

PM<sub>10</sub> is emitted directly into the air, and includes fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2013). PM<sub>2.5</sub> includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM<sub>10</sub> emissions in the SVAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM<sub>10</sub> are projected to remain relatively constant through 2035. Direct emissions of PM<sub>2.5</sub> have steadily declined in the SVAB between 2000 and 2010 and are projected to increase slightly through 2035. Emissions of PM<sub>2.5</sub> in the SVAB are dominated by the same sources as emissions of PM<sub>10</sub> (CARB 2013).

Acute health effects of exposure to PM<sub>10</sub> include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases including asthma and chronic obstructive pulmonary disease, and premature death. Chronic health effects include alternations to the immune system and carcinogenesis (EPA 2020b). For PM<sub>2.5</sub>, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. Long-term (months to years) exposure to PM<sub>2.5</sub> has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.

## TOXIC AIR CONTAMINANTS

According to the 2013 Edition of the California Almanac of Emissions and Air Quality, health risks from TACs can largely be attributed to relatively few compounds, the most important being diesel PM (CARB 2013:5-2 to 5-4). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent

chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Diesel PM poses the greatest health risk among the 10 TACs mentioned. Overall, Statewide emissions of diesel PM are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2013:3-8).

## ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, food packaging plants, and cannabis (SMAQMD 2016). The Sacramento Regional Wastewater Treatment Plant is located directly north of the Elk Grove Planning Area.

## SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants. The Elk Grove Planning Area encompasses numerous sensitive receptors including, but not limited to, the schools within the Elk Grove Unified School District, area medical facilities, and the City's residences.

### 3.2.3 Environmental Impacts and Mitigation Measures

#### METHODOLOGY

The analysis in this section is consistent with the recommendations of SMAQMD's Guide to Air Quality Assessment in Sacramento County, Chapter 9, "Program-Level Analysis of General Plans and Area Plans" (SMAQMD 2020). The analysis primarily focuses on the extent to which the Project would conflict with air quality planning efforts. The net increase in criteria air pollutant (PM<sub>10</sub> and PM<sub>2.5</sub>) and ozone precursor (ROG and NO<sub>x</sub>) emissions (i.e., pollutants for which the region is in nonattainment of ambient air quality standards) generated by the Project were estimated based on predicted vehicle miles traveled (VMT) and maximum development under the Project that are identified in Table 2-1 of Chapter 2, "Project Description," in order to address the largest extent of potential air quality impacts.

Construction and operational emissions were estimated based on the net change in land uses facilitated by the Project between the General Plan EIR and buildout of the Project. Construction emissions account for estimated changes in acreage of on-site and off-site improvements and were estimated consistent with SMAQMD's Program-Level Analysis guidance, which directs lead agencies to estimate construction emissions using guidance contained in Chapter 3, "Construction-Generated Criteria Air Pollutant and Ozone Precursor Emissions." For this analysis, a steady rate of construction was assumed.

As indicated in Chapter 2, "Project Description," the Project would include new land use designations that include transect-based land use designations to establish the pattern and intensity of development in the LEA Planning Area and land use amendments in the Old Town Policy Area. Development projected in the Old Town Policy Area from land use amendments, buildout of the LEA Community Plan, and an increase in the maximum residential density from 40 to 80 dwelling units per acre for the proposed Village Center Mixed Use land use designation would increase buildout projections for dwelling units and population. Based on the number of new dwelling units projected as part of the Project, full buildout of the General Plan would result in an additional estimated 1,851 new dwelling units and 5,979 more persons in the City as compared to the existing General Plan.

There is uncertainty surrounding the schedule and exact location of where Project development would occur, therefore, construction emissions were modeled using the assumptions that development would occur gradually over the horizon of the General Plan, which for purposes of this air quality analysis is assumed to be 2040 (note, it is most likely that buildout of the General Plan, both existing and proposed, would occur after 2050; the more conservative 2040 was used to model a worst-case scenario). The acreages and dwelling units provided by the City were utilized. Due to the programmatic nature of this analysis, California Emissions Estimator Model (CalEEMod) default values for trip generation, heavy-duty equipment type, and construction phasing were used.

Both short-term construction emissions and long-term operational emissions were calculated using the CalEEMod, version 2020.4.0, computer program. This model was developed in coordination with the South Coast Air Quality Management District and is the most current emissions model approved for use in California by various air districts, including SMAQMD. Appendix D includes outputs from the model runs for both construction and operational activity associated with future Project buildout conditions. With respect to operational emissions, mobile source emissions were estimated using Project-estimated annual VMT derived from the traffic study prepared for the Project (see Section 3.9, "Transportation"). Energy- and area-sourced emissions were estimated using CalEEMod default values. Project emissions were compared to anticipated air pollutant emissions associated with buildout under the General Plan as disclosed in the General Plan EIR.

Since the preparation of the General Plan EIR, the California Supreme Court issued a ruling in Friant Ranch Decision regarding an air quality analysis prepared for the Friant Ranch Development Project EIR in December 2018. The Court asserted that the air quality analysis performed for the project did not adequately explain the nature and magnitude of long-term air quality impacts from emissions of criteria pollutants and ozone precursors. The Court held that the EIR lacked "sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises."

The Court expressed the need to determine whether there was a connection between the significant project emissions and the human health impacts associated with such emissions. According to the Court, one pathway would be to estimate the level of ozone that would be produced from the project, measure to what extent human health would be affected, and describe where daily exceedances of the NAAQS and CAAQS would occur in an air basin. This detailed approach to modeling is founded on the assumption that such an exercise would produce estimates of meaningful accuracy.

In response to this court case, a discussion of the development of air quality thresholds of significance for criteria pollutants and ozone precursors and their connection to attainment of the NAAQS and CAAQS, as well as a discussion of the applicability of regional air pollution modeling is provided below.

Typically, air districts develop thresholds of significance for CEQA evaluation (summarized below) in consideration of maintaining or achieving attainment under the NAAQS and CAAQS for the geographical area they oversee (long-term regional air quality planning). These thresholds are tied to an air district in nonattainment's SIP for criteria air pollutants within a cumulative context. These SIPs are submitted to CARB and contain an inventory of existing ambient air pollutant concentrations and, if applicable, a suite of measures to reduce air pollution and a projected date of achieving attainment under the NAAQS and CAAQS. Air quality plans identify a budget that accounts for new, future sources of pollution from land use development and stationary sources. These budgets inform the development of CEQA thresholds of significance and represent an allowable level of pollution that, when emitted in volumes below such thresholds, would not conflict with an air district's long-term regional air quality planning or attainment date.

As discussed previously, the NAAQS and CAAQS represent concentrations of criteria air pollutants protective of human health and are substantiated by extensive scientific evidence. EPA and CARB recognize that ambient air quality below these concentrations would not cause adverse health impacts to exposed receptors. In connecting an air district's (e.g., SMAQMD, San Joaquin Valley Air Pollution Control District [SJVAPCD]) thresholds of significance to its anticipated date of attainment, projects that demonstrate levels of construction and/or operational emissions below the applicable thresholds would be consistent with long-term regional planning efforts. These projects would not result in emissions that would conflict with an area achieving future attainment status under the NAAQS and CAAQS as outlined by an applicable air quality plan.

Similarly, projects that demonstrate emissions levels in exceedance of an applicable threshold could contribute to the continued nonattainment designation of a region or potentially degrade a region from attainment to nonattainment resulting in acute or chronic respiratory and cardiovascular illness associated with exposure to concentrations of criteria air pollutants above what EPA and CARB consider safe. Symptoms can include coughing, difficulty breathing, chest pain, eye and throat irritation and, in extreme cases, death caused by exacerbation of existing respiratory and cardiovascular disease, cancer, and impaired immune and lung function.

However, the exact location and magnitude of specific health impacts that could occur as a result of project-level construction- or operation-related emissions is infeasible to model with a high degree of accuracy. While dispersion modeling of project-generated PM may be conducted to evaluate resulting ground-level concentrations, the secondary formation of PM is similar to the complexity of ozone formation, and localized impacts of directly emitted PM do not always equate to local PM concentrations due to the transport of emissions. Ozone is a secondary pollutant formed from the oxidation of ROG and NO<sub>x</sub> in the presence of sunlight. Rates of ozone formation are a function of a variety of complex physical factors, including topography, building influences on air flow (e.g., downwash), ROG and NO<sub>x</sub> concentration ratios, multiple meteorological conditions, and sunlight exposure (Seinfeld and Pandis 1996:298). For example, rates of ozone formation are highest in elevated temperatures and when the ratio of ROG to NO<sub>x</sub> is 5.5:1. When temperatures are lower and this ratio shifts, rates of ozone formation are stunted (Seinfeld and Pandis 1996:299–300). In addition, ROG emissions are composed of many compounds that have different levels of reactivity leading to ozone formation. Methane, for instance, is the most common ROG compound, yet it has one of the lowest reactivity potentials (Seinfeld and Pandis 1996:309, 312). Moreover, some groups may develop more severe health impacts than others. For instance, infants, children, the elderly, and individuals with preexisting medical conditions are more susceptible to developing illnesses from exposure to air pollutants.

Notably, during the litigation process in the Friant Ranch case, SJVACPD submitted an amicus curiae brief that provided scientific context and expert opinion regarding the feasibility of performing regional dispersion modeling for ozone. While SJVAPCD does not regulate air pollution in the SVAB, SJVAPCD has the technical and scientific expertise to comment on the feasibility of performing photochemical regional dispersion modeling for project-level CEQA analyses. In the brief, SJVAPCD states that "CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible." SJVAPCD reiterates that (SJVAPCD 2015):

*the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the [SVAB] can accommodate without affecting the attainment date for the NAAQS. The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources must 'offset' their emissions...Thus the CEQA air quality analysis for criteria air pollutants is not really localized, project-level impact analysis but one of regional 'cumulative impacts.*

The brief asserts that these CEQA thresholds of significance are not intended to be applied such that any localized human health impact associated with a project's emissions could be identified. Rather, CEQA thresholds of significance are used to determine whether a project's emissions would obstruct a region's capability of attaining the NAAQS and CAAQS according to the emissions inventory prepared in a SIP, which is then submitted and reviewed by CARB and EPA. This sentiment is corroborated in an additional brief submitted by the South Coast Air Quality Management District (SCAQMD 2015).

SMAQMD has developed Final Guidance based on extensive air quality impact and health effects modeling that yields estimates of incremental health effects as a result of a proposed Project's emissions of criteria air pollutants

and ozone precursors. Based on the magnitude of the Project, the Strategic Area Project Health Effects Tool contained in the guidance was used to evaluate the Project's incremental health effects. The Strategy Area Project IV, "South Sacramento," the closest Strategic Area to the City of Elk Grove, was used for the model. Based on the impact determinations summarized below, the Project's associated adverse health outcomes were only estimated for operational emissions.

Carbon monoxide (CO) impacts were assessed qualitatively, using the results from the Project-specific traffic study. The level of health risk from exposure to construction- and operation-related TAC emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating construction activity to off-site sensitive receptors, the number and types of diesel-powered construction equipment being used, and the duration of potential TAC exposure. An operational-related TAC exposure assessment was based on the project siting any new sources of TAC-generated activities to off-site receptors.

## THRESHOLDS OF SIGNIFICANCE

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project is considered to have a significant effect on the environment if it would:

- ▶ conflict with or obstruct implementation of the applicable air quality plan,
- ▶ violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- ▶ result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors),
- ▶ expose sensitive receptors to substantial pollutant concentrations, and/or
- ▶ create objectionable odors affecting a substantial number of people

For individual and subsequent projects developed under the Project, the significance criteria used to evaluate project impacts on air quality under CEQA are based on Appendix G of the State CEQA Guidelines and thresholds of significance adopted by SMAQMD. SMAQMD's air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health. Implementing the Project would have a significant impact related to air quality such that human health would be adversely affected if it would (SMAQMD 2020):

- ▶ cause construction-generated criteria air pollutant or precursor emissions to exceed the SMAQMD-recommended thresholds of 85 lb/day for NO<sub>x</sub>, 80 lb/day or 13.2 tpy for PM<sub>10</sub>, and 82 lb/day or 15 tpy for PM<sub>2.5</sub> once SMAQMD's Basic Construction Emission Control Practices have been implemented;
- ▶ result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO<sub>x</sub>, 80 lb/day and 13.2 tpy for PM<sub>10</sub>, and 82 lb/day or 15 tpy for PM<sub>2.5</sub>;
- ▶ result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm;
- ▶ result in an incremental increase in cancer risk (i.e., the risk of contracting cancer) greater than 10 in one million at any off-site receptor and/or a noncarcinogenic hazard index of 1.0 or greater; and/or
- ▶ result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

## ISSUES NOT DISCUSSED FURTHER

### Odors

The Project would not result in new sources of construction or operational stationary odors as none of the land uses proposed under the Project would be odorous as defined by SMAQMD. Therefore, issues related to stationary odor sources from the Project are dismissed from further consideration. Should a future project within the General Plan Planning Area be a source of odors it would be analyzed as part of that subsequent project's environmental review. To include such analysis here, given the scope of the Project and level of available detail, analysis at this time would be speculative, which is not required under CEQA (State CEQA Guidelines Section 15064[d][3]).

### VMT Thresholds

The proposed VMT thresholds are not evaluated further as they apply specifically to the transportation efficiency of land uses and do not involve physical alteration of land use conditions that could result in additional emissions. Therefore, the proposed update to VMT thresholds would not impact air quality as provided in this section, and this topic is not addressed further in this section of the Draft SEIR. Impacts related to GHG emissions from the VMT thresholds are discussed in Section 3.5, "Greenhouse Gas Emissions and Climate Change."

## ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### Impact 3.2-1: Construction Emissions of Criteria Air Pollutants and Precursors

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The General Plan EIR Impact 5.3.1 determined that development and growth under the General Plan could result in short-term construction emissions that could violate or substantially contribute to a violation of the NAAQS and CAAQS for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. This impact was identified as significant and unavoidable. Implementation of the Project could generate construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from demolition, material and equipment delivery trips, worker commute trips, and other miscellaneous activities. However, construction activities and emissions from implementation of the Project would be similar to what was anticipated under the General Plan EIR and the current General Plan land use designations. Subsequent projects would be required to comply with General Plan Policy NR-4-8, which would require that emissions in exceedance of SMAQMD's thresholds of significance be mitigated. Therefore, construction-generated emissions would not result in a new or substantially more severe construction air quality impacts than was addressed in the General Plan EIR. However, pursuant to the previous findings it remains **significant and unavoidable**.

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#### LEA Community Plan

Impact 5.3.1 of the General Plan EIR estimated that under a worst-case construction year, construction of the development and growth under the General Plan could generate approximately 161.3 lb/day of ROG, 378.5 lb/day of NO<sub>x</sub>, 235.0 lb/day of PM<sub>10</sub>, and 64.0 lb/day of PM<sub>2.5</sub>. The General Plan EIR concluded that this impact was significant and unavoidable.

Construction-related activities would generate emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> associated with demolition, off-road equipment, material delivery, worker commute trips, and other miscellaneous activities (e.g., application of architectural coatings). Fugitive dust emissions of PM<sub>10</sub> and PM<sub>2.5</sub> would be associated primarily with demolition and vary as a function of soil silt content, soil moisture, wind speed, and acreage of disturbance. PM<sub>10</sub> and PM<sub>2.5</sub> are also contained in exhaust from off-road equipment and on-road vehicles. Emissions of ozone precursors, ROG and NO<sub>x</sub>, would be associated primarily with construction equipment and on-road mobile exhaust. The application of architectural coatings results in off-gas emissions of ROG.

Construction activities were assumed to begin in early 2024 and extend until the end of the growth forecast period (2040). For specific construction assumptions and modeling inputs, refer to Appendix D. Table 3.2-3 summarizes the modeled maximum daily (ROG, NO<sub>x</sub>, PM) and annual (PM) emissions from construction activities over an assumed to extend until 2040 from buildout of the Project. The emissions summarized in Table 3.2-3 are reflective all of construction activity that would occur from the Project, including development of the LEA Community Plan Area.

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As shown in Table 3.2-3, daily emissions of NO<sub>x</sub> could exceed SMAQMD's annual mass emissions thresholds. Emissions of PM<sub>10</sub>, and PM<sub>2.5</sub> would also exceed their respective thresholds. SMAQMD's thresholds (in addition to the 2018 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan) are intended to maintain or achieve attainment designations in the SVAB with respect to the CAAQS and NAAQS. If a project does not exceed SMAQMD's thresholds, it would be determined that a project's contribution of air pollutants would not affect an air basin's maintenance or attainment of the NAAQS and CAAQS, thus would not exacerbate or interfere with the region's ability to attain the health-based standards (SMAQMD 2020). Because the Project's construction emissions of NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> could be above SMAQMD's recommended thresholds, these pollutants could contribute substantially to an existing or projected air quality violation of the NAAQS and CAAQS could occur. This is consistent with the findings of the General Plan EIR as the subsequent development facilitated by the Project would be similar to development assumed in the General Plan EIR and its current land use designations. There is no new significant effect and the air quality impact is not more severe than the impact identified in the General Plan EIR.

**Table 3.2-3 Summary of Maximum Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction per Year (2024–2040)**

Construction Year	ROG (lb/day) <sup>1</sup>	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (lb/day)	PM <sub>2.5</sub> (tpy)
2024	6	57	252	31	40	4
2025	20	116	157	27	21	4
2026	19	114	53	7	15	2
2027	18	111	53	7	15	2
2028	17	109	53	7	15	2
2029	16	107	53	7	15	2
2030	15	101	53	7	15	2
2031	15	100	53	77	15	2
2032	14	99	53	7	15	2
2033	13	98	53	7	15	2
2034	13	97	53	7	15	2
2035	12	95	53	7	15	2
2036	12	95	53	7	15	2
2037	12	95	53	7	15	2
2038	12	95	53	7	15	2
2039	1	5	<1	<1	<1	<1
2040	37	1	8	1	2	<1
SMAQMD Threshold of Significance	None	85	0	0	0	0

Notes: ROG = reactive organic gases; lb/day = pounds per day; NO<sub>x</sub> = oxides of nitrogen; PM<sub>10</sub> = respirable particulate matter with aerodynamic diameter of 10 micrometers or less; PM<sub>2.5</sub> = fine particulate matter with aerodynamic diameter of 2.5 micrometers or less; SMAQMD = Sacramento Metropolitan Air Quality Management District.

<sup>1</sup> Emissions of ROG were adjusted off-model to correct the CalEEMod assumption that all architectural coatings would occur within the final year of construction.

Source: Modeling performed by Ascent in 2022

As identified in the General Plan EIR, construction-generated sources of criteria air pollutants from new development under the Project would be minimized through implementation of General Plan Policy NR-4-8, which includes Standards NR-4.8.a through NR-4.8.d that require implementation of the SMAQMD recommended standard construction mitigation. All projects that would involve construction activities, regardless of the significance determination, are required to implement the SMAQMD Basic Construction Emission Control Practices (Best Management Practices) for controlling fugitive dust at construction sites. SMAQMD Best Management Practices



would be identified in subsequent project site plans and/or improvement plans and implemented during construction (e.g., site watering, equipment idling restrictions, and covering of transported fill). These practices collectively reduce fugitive PM by approximately 54 percent. For projects that would generate maximum daily NO<sub>x</sub> emissions exceeding the SMAQMD threshold of significance, SMAQMD recommends implementation of the Enhanced Exhaust Control Practices for off-road construction equipment. The SMAQMD considers implementation of the Enhanced Exhaust Control Practices to achieve a 10 percent reduction for NO<sub>x</sub> from off-road construction equipment exhaust when compared to the state fleet average. For projects where emissions still exceed the SMAQMD daily emissions threshold for NO<sub>x</sub> and PM after application of the above measures, SMAQMD requires the project applicant to pay into the SMAQMD's construction mitigation fund to offset construction-generated emissions of NO<sub>x</sub> and/or PM. Payment into this program allows the air district to offset the contribution of emissions associated with individual construction projects by removing other NO<sub>x</sub> or PM generating sources elsewhere in the air basin.

Portions of the LEA Community Plan Area have been previously analyzed in certified CEQA documents for the following projects: Southeast Policy Area Strategic Plan, Laguna Ridge Specific Plan, SouthPoint Policy Area/Sterling Meadows, and Lent Ranch Marketplace Special Planning Area. Mitigation measures from these CEQA documents include requirements related to reducing construction emissions, including fugitive dust. A comprehensive list of mitigation measures from other community plans prior environmental review are included in Appendix G. The Lent Ranch Marketplace SPA EIR does not include any mitigation measures related to construction emissions. Mitigation measures from the Laguna Ridge Specific Plan EIR and Southeast Policy Area Strategic Plan include requirements to water exposed surfaces, limit construction vehicle speeds to 15 miles per hours, wash dirt off construction vehicles and public roads, and cover dirt being transported. These measures are consistent with SMAQMD Rule 403. Elk Grove General Plan Policy NR-4-8 and SMAQMD Rule 403, as described above, contain the same performance standards and are equivalent in effectiveness as mitigation contained in prior environmental documents. Therefore, no additional mitigation or application of previously adopted mitigation measures for the projects identified above is required in the LEA Community Plan Area to address fugitive dust impacts.

To address impacts from NO<sub>x</sub> emissions mitigation from the Laguna Ridge Specific Plan requires projects greater than 20 acres in size or that would generate more than 400 pounds per day of NO<sub>x</sub> to prepare a plan to reduce NO<sub>x</sub> emissions and ensure emissions from all off-road diesel powered equipment used on the Specific Plan area do not exceed 40 percent opacity for more than three minutes in any one hour. The Southeast Policy Area Strategic Plan EIR requires submittal of a comprehensive inventory of all off-road construction equipment and plan to SMAQMD to reduce NO<sub>x</sub> emissions. SMAQMD has since revised their construction NO<sub>x</sub> emissions thresholds to 85 pounds per day with a screening threshold of projects 35 acres or less. Additionally, in 2019, SMAQMD updated the criteria of its Enhanced On-Site Exhaust Control Measures, which supersede SMAQMD's previous recommendations to reduce exhaust emissions. Development in the LEA Community Plan Area would be subject to General Plan policies and SMAQMD rules contains the same performance standards and is equivalent in effectiveness as mitigation contained in the prior environmental documents. Nevertheless, because SMAQMD has updated the standards established in its CEQA mitigation for minimizing construction exhaust emissions, a new mitigation measure (Mitigation Measure 3.2-1) for the LEA Community Plan construction emissions is identified below.

The General Plan EIR concluded that no additional feasible plan-level mitigation was available beyond compliance with General Plan Policy NR-4-8 and that this impact was significant and unavoidable. Construction-generated emissions from implementation of the Project would not result in a new or substantially more severe construction air quality impacts that was addressed in the General Plan EIR. A new mitigation measure (Mitigation Measure 3.2-1) would be applied to further address LEA Community Plan construction emissions and would reduce NO<sub>x</sub> through achieving 10 percent reduction in NO<sub>x</sub> emissions through incorporating construction equipment that uses high Tier engines. Additionally, any significant NO<sub>x</sub> emissions remaining after this reduction, NO<sub>x</sub> emissions could be reduced through SMAQMD's off-site mitigation fund. consistent with current SMAQMD standards, but would not eliminate this impact. This impact would remain **significant and unavoidable**.

#### **General Plan Land Use Designation Amendments**

Construction emissions anticipated to occur from the proposed General Plan land use amendments in the Old Town Policy Area are included in the overall construction modeling associated with the Project as presented in Table 3.2-3.

As discussed above, the Project would generate levels of construction emissions that would be like those discussed in the General Plan EIR and could be mitigated through compliance with General Plan Policy NR-4-8. Construction-generated emissions from implementation of the proposed General Plan land use amendments would not result in a new or substantially more severe construction air quality impacts that was addressed in the General Plan EIR. Impacts would remain **significant and unavoidable**.

#### **Grant Line Road Precise Roadway Study**

The Precise Study was prepared to analyze potential geometric layouts along Grant Line Road. Buildout of roadway configurations, including all alternatives of the Precise Study are included in the overall construction modeling associated with the Project as presented in Table 3.2-3. As discussed above, Project would generate levels of construction emissions that would be similar to those discussed in the General Plan EIR and could be mitigated through compliance with General Plan Policy NR-4-8. Construction-generated emissions from implementation of the Grant Line Road Precise Roadway Plan would not result in a new or substantially more severe construction air quality impacts that was addressed in the General Plan EIR. Impacts would remain **significant and unavoidable**.

#### **South and West Study Areas**

Construction emissions anticipated to occur from the South and West Study Areas are included in the overall construction modeling associated with the Project as presented in Table 3.2-3. As discussed above, the Project would generate levels of construction emissions that would be like those discussed in the General Plan EIR and could be mitigated through compliance with General Plan Policy NR-4-8. Construction-generated emissions from implementation of development in the South and West Study Areas would not result in a new or substantially more severe construction air quality impacts that was addressed in the General Plan EIR. Project impacts would remain **significant and unavoidable**.

### **Mitigation Measures**

#### **Mitigation Measure 3.2-1: Implement the Sacramento Metropolitan Air Quality Management District's Advanced On-site Exhaust Control Measures for the LEA Community Plan Area**

Subsequent development in the LEA Community Plan Area shall implement SMAQMD's Enhanced Exhaust Control Practices for NO<sub>x</sub> and exhaust PM emissions. Before the issuance of grading and/or building permits, subsequent project applicants shall submit to the City and SMAQMD an initial report of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used 8 hours or more during any portion of the construction project before any grading activities. The initial report shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The subsequent project applicants shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The information shall be submitted at least 4 business days before the use of subject heavy-duty off-road equipment. The report shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.

Before any grading activities, the subsequent project applicants shall provide a plan for approval by the City and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a subsequent project-wide fleet-average of 10 percent NO<sub>x</sub> reduction (depending on available technology and engine Tier) compared to the most recent CARB fleet average. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. If achievement of the aforementioned reductions over the statewide average are deemed infeasible by the City, SMAQMD, or construction contractor, the subsequent project applicants shall ensure the construction fleet meets the lowest fleetwide emissions average possible, through the use of all available on-site emissions reduction measures (e.g., highest tier engines, emission control devices, cleaner burning fuel).

The subsequent project applicants shall submit a final report at the end of the job, phase, or calendar year, as pre-arranged with SMAQMD staff and documented in the approval letter, to demonstrate continued project compliance. If modeled construction-generated emissions of NO<sub>x</sub> are not reduced to a level below SMAQMD's thresholds of

significance by the application of the aforementioned mitigation measures, then the project developer must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO<sub>x</sub> would be reduced to a less-than-significant level. The fee calculation to offset daily NO<sub>x</sub> emissions shall be based on the SMAQMD-determined cost to reduce one ton of NO<sub>x</sub> applicable at the time (currently \$30,000 per ton in May 2023 but subject to change in future years).

Once initial construction activities are finalized by the subsequent project applicants, and before the issuance of grading and/or building permits, quantification of construction-related emissions shall be verified at the project level. As each subsequent project-level construction phase is finalized throughout the duration of the project buildout, the mitigation fee shall be calculated based on current information, available construction equipment, and proposed construction activities. As construction activities occur over the buildout period, the developer shall work with SMAQMD to continually update mitigation fees based on actual on-the-ground emissions. The final mitigation fees shall be based on the contractor equipment report provided by the developer to SMAQMD and shall reconcile any fee discrepancies due to schedule adjustments and increased or decreased equipment inventories. Equipment inventories and NO<sub>x</sub> emission estimates for subsequent construction phases shall be coordinated with SMAQMD, and the off-site mitigation fee measure shall be assessed to any construction phase that would result in an exceedance of SMAQMD's mass emission threshold for NO<sub>x</sub>.

#### Significance After Mitigation

Impact would remain significant and unavoidable.

### **Impact 3.2-2: Long-Term Operational Emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>**

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General Plan EIR Impact 5.3.2 and 5.3.6 determined that long-term operational emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> would be substantial and could substantially contribute to a violation of the NAAQS and CAAQS for ozone and PM and conflict with air quality attainment efforts. This impact was identified as significant and unavoidable. Implementation of the Project could generate long-term operational emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The Project proposes greater development than what was presented in the General Plan EIR. This level of development would subsequently result in greater operational emissions as compared to the General Plan EIR for the Planning Area. Therefore, operational emissions would result in a substantially more severe air quality impacts that was addressed in the General Plan EIR. Project impacts would be **significant and unavoidable**.

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#### LEA Community Plan

General Plan EIR Impact 5.3.2 and 5.3.6 determined that long-term operational emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> would be substantial and could substantially contribute to a violation of the NAAQS and CAAQS for ozone and PM and conflict with air quality attainment efforts. Based on modeling performed for that analysis, the land uses proposed under the General Plan for the City and its Planning Area resulted in 8,280 lb/day of ROG, 2,673 lb/day of NO<sub>x</sub>, 177 lb/day of PM<sub>10</sub>, and 168 lb/day of PM<sub>2.5</sub>. These levels of emissions would exceed SMAQMD's thresholds of significance and this impact was concluded to be significant and unavoidable.

Operation emissions associated with development of the Project could result in the generation of long-term operational emissions of ROG, NO<sub>x</sub>, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) from mobile, stationary, and area-wide sources. Mobile-source emissions of criteria pollutants and precursors would result from vehicle trips generated by Project related trips. Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and ROG from the use of consumer products.

Table 3.2-4 summarizes the maximum annual and daily operational-related emissions of criteria air pollutants during the first year of assumed buildout (i.e., 2040) for buildout of the Project. The emissions summarized in Table 3.2-4 are reflective all of land use changes that would occur from the Project, including development of the LEA Community Plan Area. Emissions were calculated based on proposed land uses and adjusted trip lengths to match Project-specific VMT, as reported in the traffic study (Section 3.9, "Transportation and Circulation") for the Project. As shown in Table 3.2-4, operational-related activities could result in annual and daily emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>, that exceed the

SMAQMD-recommended thresholds of significance and inhibit efforts for attainment with NAAQS and CAAQS (e.g., 2018 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan).

**Table 3.2-4 Summary of Maximum Operational Emissions of Criteria Air Pollutants and Precursors from the Project (2040)**

Emissions Source	ROG (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (lb/day)	PM <sub>2.5</sub> (tpy)
Area	219	1	<1	<1	<1	<1
Energy	4	37	3	<1	3	<1
Mobile	152	127	362	47	97	13
Total Emissions	375	165	360	47	101	13
SMAQMD Threshold of Significance	65	65	0	0	0	0

Notes: ROG = reactive organic gases; lb/day = pounds per day; NO<sub>x</sub> = oxides of nitrogen; PM<sub>10</sub> = respirable particulate matter; PM<sub>2.5</sub> = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District.

Total values may not sum exactly due to rounding. See Appendix D for detailed input parameters and modeling results.

Source: Modeling performed by Ascent in 2022.

SMAQMD's project thresholds are intended to maintain or achieve attainment designations in the SVAB with respect to the CAAQS and NAAQS. Projects that exceed SMAQMD's thresholds contribute to nonattainment designations, it would exacerbate or interfere with the region's ability to attain the health-based standards (SMAQMD 2020). Because implementation of the Project could result in operational emissions above SMAQMD's recommended thresholds, they could contribute to a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. Because the ambient air quality standards are established to be protective of public health, adverse health impacts to receptors could occur due to the Project's emissions being above SMAQMD's thresholds. This is consistent with the findings of the General Plan EIR as the proposed development would generate emissions similar to development and buildout conditions assumed in the General Plan EIR and its current land use designations. Nevertheless, when compared emissions of the LEA Community Plan as proposed for this Project to the land use designations proposed in the General Plan EIR, the increased development would generate greater emissions for the Planning Area. This is due to the increased density and intensity of development for the LEA Community Plan. The emissions disclosed in the General Plan EIR represent the anticipated emissions from all development under the General Plan for the City and its Planning Area. The emissions summarized above in Table 3.2-4 are attributed to operation of the proposed land uses under the Project. Because emissions would be greater under the Project, operational air quality impacts would be more severe than the impact identified in the General Plan EIR.

Consistent with SMAQMD's most recent Friant Ranch Guidance, the possible operational emissions of criteria air pollutants from implementation of the Project were used to estimate foreseeable adverse health outcomes using SMAQMD's Strategic Area Project Health Effects Tool. Strategic Area Project IV, "South Sacramento," was used as this Strategic Area is the closest to the City of Elk Grove. Table 3.2-5 below summarizes the potential health effects in the region from the Project.

**Table 3.2-5 Potential Annual Incremental Health Incidences for the Project**

PM <sub>2.5</sub> Health Endpoint	Age Range	Incidences (Mean)	Percent of Background Incidences	Total Number of Health Incidences (per Year)
<b>Respiratory</b>				
Emergency Room Visits	0-99	3.3	0.018%	18,419
Hospital Admissions, Asthma	0-64	0.22	0.012%	1,846
Hospital Admissions, All Respiratory	65-99	0.99	0.0050%	19,644
<b>Cardiovascular</b>				
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65-99	0.58	0.0024%	24,037

PM <sub>2.5</sub> Health Endpoint	Age Range	Incidences (Mean)	Percent of Background Incidences	Total Number of Health Incidences (per Year)
Acute Myocardial Infarction, Nonfatal	18-24	0.00030	0.0079%	4
Acute Myocardial Infarction, Nonfatal	25-44	0.024	0.0078%	308
Acute Myocardial Infarction, Nonfatal	45-54	0.060	0.0081%	741
Acute Myocardial Infarction, Nonfatal	55-64	0.10	0.0081%	1,239
Acute Myocardial Infarction, Nonfatal	65-99	0.37	0.0074%	5,052
<b>Mortality</b>				
Mortality, All Causes	30-99	6.6	0.015%	44,766
Ozone Health Endpoint	Age Range	Incidences (Mean)	Percent of Background Incidences	Total Number of Health Incidences (per Year)
<b>Respiratory</b>				
Hospital Admissions, All Respiratory	65-99	0.14	0.00070%	19,644
Emergency Room Visits, Asthma	0-17	0.80	0.014%	5,859
Emergency Room Visits, Asthma	18-99	1.2	0.0097%	12,560
<b>Mortality</b>				
Mortality, Non-Accidental	0-99	0.090	0.00029%	30,386
<b>Total Incidences</b>	<b>0-99</b>	<b>14.47</b>	<b>0.0012</b>	<b>184,505</b>

Notes: PM<sub>2.5</sub> = fine particulate matter; NA = not applicable.

Source: Modeling conducted by Ascent 2022.

Based on this modeling, operational emissions from implementation of the Project may result in an additional 7 deaths from ozone and PM<sub>2.5</sub> exposure compared to a background number of incidences of about 75,000 mortality incidences per year. There is no established threshold of significance that addresses anticipated deaths; however, consistent with guidance from the Friant Ranch Decision, this information has been included to provide a meaningful level of detail to readers of this Draft SEIR. Notably, as discussed under the heading, "Methodology," there is inherent difficulty in evaluating the exact location and degree of adverse health outcomes from project-level emissions. Moreover, the Strategic Area Project Health Effects Tool cannot account for personal information such as age, preexisting conditions, genetic propensities, and lifestyle choices that may contribute to a receptor's sensitivity to air pollution.

As noted in the General Plan EIR, General Plan Policy NR-4-1 requires that all new development projects in the City with the potential to result in substantial air quality impacts incorporate features to reduce emissions equal to 15 percent compared to an "unmitigated baseline" project. An unmitigated baseline project is a development project that is built and/or operated without the implementation of trip reduction, energy conservation, or similar features. Standard NR-4-1a requires appropriate mitigation measures to the extent feasible and appropriate, potentially including—in the case of projects which may conflict with applicable air quality plans—emission reductions in addition to those required by Policy NR-4-1.

Additionally, General Plan Policy MOB-1-1 requires that new land use plans, amendments to such plans, and other discretionary development proposals demonstrate 15 percent reduction in VMT from existing conditions. While the primary intent of this policy would be to reduce emissions of greenhouse gases (see Section 3.5, "Greenhouse Gas Emissions"), this policy would have beneficial effects on ambient air quality in the Planning Area. However, a 15 percent reduction in VMT may be achieved through several pathways which are unknown at the time of writing this Draft SEIR. For instance, a project may implement a transportation demand management (TDM) plan, which may be composed of multiple strategies to reduce VMT such as congestion pricing, parking management, ridesharing matching, and carpool and vanpool programs. A TDM may include all or some methods of VMT-reducing strategies; however, a TDM plan is project-specific and would be developed in consideration of the land use types associated with a future project. As such, the composition of reductions for air pollutants would differ depending on the type of

project. General Plan Standard MOB-3-2.a requires new residential development to pre-wire for plug-in EV, which would further reduce emissions. As summarized in Section 3.2.1, "Regulatory Setting," the City Municipal Code Sections 16.07.200 through 16.07.500 includes a streamlined permitting process for the installation of EV charging stations, which would additionally reduce emissions from the mobile sector associated with the combustion of fossil fuels. Municipal Code Section 23.58.120 requires one "EV ready" parking space for all new one family and two family dwelling units. This section also requires that 2.5 percent of parking for multifamily projects provide EV charging and an additional 2.5 percent of parking be ready for future EV charging expansion.

Implementation of General Plan Policy NR-4-1 would help reduce operational emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>; however, the reductions anticipated to be achieved by General Plan Policy NR-4-1 cannot be uniformly applied to all future development under the Project. There is inherent uncertainty as to the size, intensity, and timing of future development that would occur under the Project. Notably, some development projects may generate emissions below SMAQMD's operational thresholds of significance. Therefore, because the details of future development (e.g., the size, intensity, duration of construction, overlap of construction with other projects) cannot be determined at this time, the assumed levels of emissions may not fully encompass total net changes in future emissions.

Portions of the LEA Community Plan Area have been previously analyzed in certified CEQA documents for the following projects: Southeast Policy Area Strategic Plan, Laguna Ridge Specific Plan, SouthPoint Policy Area/Sterling Meadows, and Lent Ranch Marketplace Special Planning Area. Mitigation measures from these CEQA documents include requirements related to reduction of operational emissions. A comprehensive list of mitigation measures from other community plans prior environmental review are included in Appendix G. Mitigation measures from the Laguna Ridge Specific Plan EIR, Southeast Policy Area Strategic Plan, and Lent Ranch Marketplace Special Planning Area EIR include requirements for compliance with the air quality management plans prepared for each community plan. The air quality management plans require measures to reduce emissions from mobile and stationary sources. Therefore, portions of the LEA Community Planning Area within the Laguna Ridge Specific Plan, Southeast Policy Area Strategic Plan, and Lent Ranch Marketplace Special Planning Area would be required to show consistency with the applicable air quality management plans, pursuant to mitigation measures contained in Appendix G. Development throughout the LEA Community Plan Area would be required to adhere to General Plan policies, as described above. The measures of these the air quality management plans would continue to apply to the portions of the LEA Community Plan geographically located within the boundaries of these plans; however, given the proposed land uses changes of the LEA Community Plan (e.g., increased density, pedestrian and bicycle infrastructure) as well as the passage of time between the time this analysis has been prepared and the certification of the most recent the air quality management plan (i.e., 2015), emissions from the LEA Community Plan would be subject to a new air quality management plan that demonstrates that the LEA Community Plan would include sufficient mitigation to meet SMAQMD's CEQA requirements for land use development projects. Mitigation Measure 3.2-2 below would require the preparation of an air quality management plan to demonstrate a 15 reduction in operational emission from unmitigated conditions. Implementation of Mitigation Measure 3.2-2 would require the project applicant to demonstrate that project design features proposed as a part of the project description would be sufficient to reduce operational emissions of criteria air pollutants and ozone precursors to meet SMAQMD's recommended reductions for projects within the regional growth projections of the most recent MTP/SCS.

The General Plan EIR concluded that no additional feasible plan-level mitigation was available beyond compliance with General Plan policies and concluded that Impact 5.3.2 and 5.3.6 are significant and unavoidable. Because operational emission for the Project would be greater for the Planning Area than what was anticipated in the General Plan due to increased development that would exceed SMAQMD's operational thresholds of significance, operational emissions from implementation of the LEA Community Plan would result in substantially more severe air quality impacts that was addressed in the General Plan EIR. Project impacts would be **significant and unavoidable** even with implementation of Mitigation Measure 3.2-2.

#### **General Plan Land Use Designation Amendments**

Operational emissions anticipated to occur from the proposed General Plan land use amendments are included in the overall operational modeling associated with the Project as presented in Table 3.2-4. As discussed above, the Project would generate levels of operational emissions that would be greater than those discussed in the General Plan EIR for the

Planning Area. Operation-generated emissions from implementation of the proposed General Plan land use amendments would result in substantially more severe operational air quality impacts that was addressed in the General Plan EIR. Project impacts would be **significant and unavoidable** due to the lack mitigation available to full address the impact.

#### Grant Line Road Precise Roadway Study

Operation of the Grant Line Road Precise Roadway Study would generate operational emissions from mobile sources using Grant Line Road. The Precise Study would not independently generate new vehicle trips and no new mobile source emissions would occur. There is no new significant effect and the impact is not more severe than the impact identified in the General Plan EIR. This impact would remain **significant and unavoidable**.

#### South and West Study Areas

Operational emissions anticipated to occur from the South and West Study Areas are included in the overall operational modeling associated with the Project as presented in Table 3.2-4. As discussed above, the Project would generate levels of operational emissions that would be greater than those discussed in the General Plan EIR. Operation-generated emissions from implementation of the proposed General Plan land use amendments would result in substantially more severe operational air quality impacts that was addressed in the General Plan EIR. Project impacts would be **significant and unavoidable** due to the lack mitigation available to full address the impact.

### Mitigation Measures

#### **Mitigation Measure 3.2-2: Prepare an Air Quality Mitigation Plan for the LEA Community Plan Area**

The City shall prepare an Air Quality Management Plan that demonstrates a 15 percent reduction in operational air pollutant for the LEA Community Plan Area, compared to unmitigated baseline project consistent with General Plan Policy NR-4-1. The Air Quality Management Plan shall be submitted to the Sacramento Metropolitan Air Quality Management District for review and endorsement. Air Quality Management Plan emission reduction measures will be identified and quantified and may include commitments to reducing VMT, promoting alternative modes of transportation, and energy efficiency building measures. The Air Quality Management Plan shall be submitted to SMAQMD prior to the certification of the Final EIR to confirm that the project meets reduction requirements.

#### Significance After Mitigation

Project impacts would remain significant and unavoidable.

#### **Impact 3.2-3: Exposure of Sensitive Receptors to Substantial Carbon Monoxide Pollutant Concentrations**

The General Plan EIR concluded that the Project would not contribute to localized concentrations of mobile-source CO impacts. Implementation of the Project would include land use amendments that would result in distribution of vehicle trips throughout the City; however, this redistribution would not result in a new CO impact. Based on modeling performed for this analysis, the maximum development proposed for the Project could generate a maximum of 24,200 daily trips; however, the trips would be distributed throughout the City and into the region and would not be focused within one intersection exclusively. Therefore, there is no new effect and the impact is not substantially more severe than the impact identified in the General Plan. This impact would remain **less than significant** as identified in the General Plan EIR.

#### LEA Community Plan

Impact 5.3.3 of the General Plan EIR used a tiered approach established by SMAQMD to evaluate potential CO exposure. Based on this tiered approach, traffic generated would not exceed 9,010 and 9,240 trips in the a.m. and p.m. peak periods, respectively. This level of trips would be less than the 31,600 vehicles per hour (VPH) at an intersection, which comprises the screening criterion established by SMAQMD to evaluated CO impacts. Because this level would be less, the General Plan would not result in a CO "hotspot."

Based on modeling conducted for this analysis, the Project could generate a maximum of 24,200 daily vehicle trips throughout the City. While localized concentrations of criteria air pollutants can expose sensitive receptors to substantial pollutant concentrations, criteria air pollutants generally produce regional impacts. Criteria air pollutants are predominantly generated in the form of mobile-source exhaust from vehicle trips associated with land use development projects. These vehicle trips occur throughout a paved network of roads, and, therefore, associated exhaust emissions of criteria air pollutants are not generated in a single location where high concentrations could be formed. However, there may be unique situations or infrastructure designs (e.g., tunnels, enclosed underpasses) where a project with high levels of emissions may require concentration modeling to determine if the emissions will expose sensitive receptors to substantial pollutant concentrations.

Using the screening criteria utilized in the General Plan EIR established by SMAQMD, a CO hotspot could occur at intersections that support 31,600 VPH. The 24,200 daily trips generated by implementation of the Project would be less than this 31,600 VPH screening criterion. Because these trips would be regional in nature rather than localized and would be less than the screen criterion, a CO hotspot would not occur.

Additionally, mobile-source CO emissions have historically decreased since the advent of catalytic converters, which decrease mobile-source exhaust emissions, and there have been improvements in fuel economy since 2006 through regulatory compliance implemented by EPA and CARB (e.g., the café standards and Advanced Clean Cars program). As such, CO emissions from the Project would not have a substantially new or more severe impact as compared to what was evaluated in the General Plan EIR. Therefore, there is no new significant impact and the impact is not substantially more severe than the impact identified in the General Plan EIR. This impact would remain **less than significant**.

#### **General Plan Land Use Designation Amendments**

Anticipated new vehicle trips from the proposed General Plan land use amendments in the Old Town Policy Area are included in the overall number cited above for buildout of the Project. As discussed above, the Project would generate levels of new vehicle trips that would be below SMAQMD's screening criteria for CO hotspots. Implementation of the proposed General Plan land use amendments would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. This impact would remain **less than significant**.

#### **Grant Line Road Precise Roadway Study**

The proposed Grant Line Road Precise Roadway Study would not independently generate new vehicle trips or create a traffic operational issue that could result in traffic congestion. Therefore, implementation of the Precise Study would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. This impact would remain **less than significant**.

#### **South and West Study Areas**

Anticipated new vehicle trips from the South and West Study Areas are included in the overall number cited above for implementation of the Project. As discussed above, the Project would generate levels of new vehicle trips that would be below SMAQMD's screening criteria for CO hotspots. Implementation of development under the South and West Study Areas would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. This impact would remain **less than significant**.

#### **Mitigation Measures**

No mitigation is required.

### **Impact 3.2-4: Exposure of Sensitive Receptors to TACs**

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The General Plan EIR concluded that operational-related emissions of mobile source TACs would result in significant and unavoidable impacts to public health. Implementation of Project could generate mobile source TACs. However, these TAC emissions would be similar to what was anticipated under buildout conditions as described in the General Plan EIR and its current land use designations. Therefore, potential TAC mobile emissions would not result in a new or substantially more severe TAC impacts that was addressed in the General Plan EIR. Project impacts would remain **significant and unavoidable**.

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### LEA Community Plan

Impact 5.3.4 of the General Plan EIR evaluated the potential health risk to sensitive receptors (i.e., people, or facilities that generally house people such as schools, hospitals, residences) associated with construction-generated TACs and concluded impacts would be less than significant.

### **Construction**

Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) were identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed above in Section 3.6.2, "Environmental Setting," 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:K-1). With regard to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. 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 level of health risk for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period. According to the Office of Environmental Health Hazard Assessment, when a Health Risk Assessment is prepared to project the results of exposure of sensitive receptors to selected compounds, exposure of sensitive receptors to TAC emissions should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the duration of activities associated with the proposed project if emissions occur for shorter periods (OEHHA 2015:5-23, 5-24).

The TAC that is the focus of this construction analysis is diesel PM because it is known that diesel PM would be emitted during project construction.

Construction-related activities associated with buildout of the Project would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road equipment used during demolition and building modernization and on-road heavy-duty trucks. On-road diesel-powered haul trucks traveling to and from a construction area to deliver materials and equipment are less of a concern because they do not operate at any one location for extended periods of time such that they would expose a single receptor to excessive diesel PM emissions.

Based on the construction-related emissions modeling conducted (see Appendix D), maximum daily emissions of exhaust PM<sub>10</sub> would be less than 2 lb/ during peak construction associated with the Project. A portion of these emissions would be due to haul trucks traveling to and from individual construction sites. This is below the SMAQMD-recommended threshold of 80 lb/day. In addition, construction activities located in close proximity to residential units (considered sensitive receptors) would occur during daytime hours consistent with General Plan Noise Policy NO-1-7 and Municipal Code Section 6.32.100, which restricts construction activities to between 7 a.m. and 7 p.m., Monday through Friday, which is when many residents are not home, thus limiting exposure from construction-related emissions to these receptors. As stated in Section 3.2.1, "Regulatory Setting," construction activities may be allowed between the hours of 6 a.m. and 8 p.m. if construction would not be located within the vicinity of a residential land uses, which are considered sensitive receptors. Finally, compliance with CAP measure TACM-8 would require 25 percent of off-road construction equipment to meet Tier 4 standards.

The Project would allow for more development than what was proposed in the General Plan EIR for the Planning Area, although development would occur within the same footprint as analyzed in the General Plan EIR. This increase could result in increased intensity and duration of construction activities within the Planning Area. At this time, however, the timing, location, duration, and magnitude of construction activities, as well as the potential for overlapping construction from multiple projects to occur is unknown. Nevertheless, provided that the peak PM<sub>10</sub> exhaust would be 2 lb/day during peak construction, the likelihood at the Project would result in a greater impact than those disclosed in the General Plan EIR is not expected.

Therefore, there is no new significant impact and the impact is not more severe than the impact identified in the General Plan EIR with respect to construction-related TACs. This impact would remain **significant and unavoidable**.

### **Stationary Sources**

Impact 5.3.4 of the General Plan EIR assessed the potential for receptors to be exposed to substantial pollutant concentrations from stationary sources and concluded that this impact would be potentially significant. Development

facilitated by the Project would include industrial sources of TACs that could include, but are not limited to, benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride. The types of industrial facilities that could be allowable under the Project would be similar to those discussed in Impact 5.3.4 of the General Plan EIR. These industrial sources would also be subject to SMAQMD's Rule 201 ("General Permit Requirements"), Rule 202 ("New Source Review"), and Rule 207 ("Federal Operating Permit") which would reduce TAC exposure through the use of BACT. Therefore, stationary source impacts would be similar to those discussed under Impact 5.3.4 of the General Plan EIR. There is no new significant impact and the impact is not more severe than the impact identified in the General Plan EIR with respect to stationary-sourced TACs. This impact would remain **significant and unavoidable**.

### **Mobile Sources**

Impact 5.3.4 of the General Plan EIR evaluated long-term operational sources of TACs and concluded that due to the anticipated level of traffic along certain roadways within the General Plan area, sensitive receptors could be exposed to substantial TAC concentrations. The General Plan EIR used the CARB- and SMAQMD-recommended 100,000 daily vehicle trips on a roadway segment to determine that new vehicle trips generated by the land uses under the General Plan would introduce substantial mobile-source TACs within the Planning Area.

Implementation of the Project would generate additional vehicle trips associated with development than what was evaluated in the General Plan EIR due to the increased density of new land uses that were not previously evaluated in the General Plan EIR. However, the extent of this increase would not create substantially higher levels of mobile TACs or generate new sources of mobile TACs than what was considered in the General Plan EIR. Implementation of General Plan Policies NR-2-4, NR-4-9, NR-4-10, MOB-3-1, MOB-3-2, MOB-3-5, MOB-3-6, MOB-3-7, MOB-3-13, and MOB-7-5 would serve to lower exposure of sensitive receptors to sources of TACs throughout the Planning Area. As discussed previously, the CARB Diesel Risk Reduction Plan and Air Toxic Control Measures would help reduce future emissions of diesel PM (the primary TAC of concern in mobile emissions).

CARB recommends that sensitive receptors not be sited within 500 feet of urban roadways that support 100,000 vehicle trips per day. Based on the transportation modeling performed for the Project (Appendix C), the roadway that would support the highest number of vehicles would be Kammerer Road from Promenade Parkway to State Route 99 with approximately 88,100 average daily trips (ADT) per day. This level of vehicle trips would be below CARB's recommended 100,000 ADT, thus reducing the potential for mobile source TAC impacts to occur within the Planning Area.

The General Plan EIR concluded that no additional feasible plan-level mitigation was available beyond compliance with General Plan policies and that this impact was significant and unavoidable. Operational emissions from implementation of the LEA Community Plan would not result in a new or substantially more severe TAC impacts that was addressed in the General Plan EIR. This impact would remain **significant and unavoidable**.

### **General Plan Land Use Designation Amendments**

Anticipated new TAC emissions from the proposed General Plan land use amendments in the Old Town Policy Area would be similar to those disclosed above for the Project. As discussed above, the Project would generate construction and operational TAC emission like those disclosed in the General Plan EIR. Construction of the General Plan land use amendments in the Old Town Policy Area would occur within the footprint of the General Plan; however, increased development may require construction of greater intensity. Operation of the development in the Old Town Policy Area would include similar stationary source and mobile source emissions as analyzed in the General Plan EIR. As discussed above, the roadways segment with the highest ADT under the Project would occur along Kammerer Road from Promenade Parkway to State Route 99 and would not exceed CARB's 100,000 ADT threshold for siting sensitive receptors. Implementation of the proposed General Plan land use amendments would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. Project impacts would remain **significant and unavoidable**.

### **Grant Line Road Precise Roadway Study**

Anticipated new TAC emissions from the Precise Study would be similar to those disclosed above during construction activities. The Precise Study would not produce operational TACs. As discussed above, the Project would generate construction TAC emission similar to those disclosed in the General Plan EIR. Implementation of the Grant Line Road

Precise Roadway Study would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. Project impacts would remain **significant and unavoidable**.

### **South and West Study Areas**

Anticipated new TAC emissions from development under the South and West Study Areas would be similar to those disclosed above. As discussed above, the Project would generate construction and operational TAC emission similar to those disclosed in the General Plan EIR. Construction of the South and West Coast Study Areas would occur within the footprint of the General Plan; however, increased development may require construction of greater intensity. Operation of the development in the South and West Coast Study Areas would include similar stationary source and mobile source emissions as analyzed in the General Plan EIR. As discussed above, the roadways segment with the highest ADT would occur along Kammerer Road from Promenade Parkway to State Route 99 and would not exceed CARB's 100,000 ADT threshold for siting sensitive receptors. Implementation of development under the South and West Study Areas would not result in a new or substantially more severe air quality impacts that was addressed in the General Plan EIR. Project impacts would remain **significant and unavoidable**.

### **Mitigation Measures**

No additional mitigation is required beyond compliance with General Plan Policies NR-2-4, NR-4-9, NR-4-10, MOB-3-1, MOB-3-2, MOB-3-5, MOB-3-6, MOB-3-7, MOB-3-13, and MOB-7-5.

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