# APPENDIX C

# Air Quality & Greenhouse Gas Impact Analysis

# AIR QUALITY & GREENHOUSE GAS IMPACT ANALYSIS

FOR

# CITY OF ATASCADERO 2045 GENERAL PLAN UPDATE

MARCH 2026

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| | |
|---|---|
| AB | Assembly Bill |
| AHERA | Asbestos Hazard Emergency Response Act |
| ARB | California Air Resources Board |
| ATCM | Airborne Toxic Control Measure |
| BACT | Best Available Control Technology |
| CAAQS | California Ambient Air Quality Standards |
| CAP | Clean Air Plan (Air Quality) also Climate Action Plan (GHG) |
| CAFE | Corporate Average Fuel Economy |
| CalEEMod | California Emissions Estimator Model |
| CalEPA | California Environmental Protection Agency |
| CAMP | Construction Activity Management Plan |
| CBC | California Building Code |
| CCAA | California Clean Air Act |
| CCAR | California Climate Action Registry |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulation |
| $CH_4$ | Methane |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| $CO_2e$ | Carbon Dioxide Equivalent |
| DPM | Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM |
| DRRP | Diesel Risk Reduction Plan |
| EMFAC | Emission Factor |
| EO | Executive Order |
| FCAA | Federal Clean Air Act |
| FIP | Federal Implementation Plan |
| GHG | Greenhouse Gases |
| GPU | General Plan Update |
| GWP | Global Warming Potential |
| HAP | Hazardous Air Pollutant |
| HFC | Hydrofluorocarbons |
| IPCC | Intergovernmental Panel on Climate Change |
| LOS | Level of Service |
| $MMTCO_2e$ | Million Metric Tons of Carbon Dioxide Equivalents |
| $NF_2$ | Nitrogen trifluoride |
| $N_2O$ | Nitrous Oxide |
| NAAQS | National Ambient Air Quality Standards |
| NESHAPs | National Emission Standards for HAPs |
| $NO_x$ | Oxides of Nitrogen |
| $O_3$ | Ozone |
| Pb | Lead |
| PFC | Perfluorocarbons |
| PM | Particulate Matter |
| $PM_{10}$ | Particulate Matter (less than 10 µm) |
| $PM_{2.5}$ | Particulate Matter (less than 2.5 µm) |

| | |
|---|---|
| ppb | Parts per Billion |
| ppm | Parts per Million |
| ROG | Reactive Organic Gases |
| RTP | Regional Transportation Plan |
| SB | Senate Bill |
| SCCAB | South Central Coast Air Basin |
| SCS | Sustainable Communities Strategy |
| $SF_6$ | Sulfur hexafluoride |
| SLCP | Short-Lived Climate Pollutants |
| SLOAPCD | San Luis Obispo County Air Pollution Control District |
| SLOCOG | San Luis Obispo Council of Governments |
| SP | Service Population |
| $SO_2$ | Sulfur Dioxide |
| TAC | Toxic Air Contaminant |
| TSCA | Toxic Substances Control Act |
| U.S. EPA | United State Environmental Protection Agency |
| VMT | Vehicle Miles Traveled |

# INTRODUCTION

This report provides a discussion of existing conditions, applicable regulatory framework, and an analysis of air quality and greenhouse gas impacts associated with the proposed City of Atascadero 2045 General Plan Update (2045 GPU/ZCU) and corresponding Zoning Code Update (ZCU).

# PROPOSED CITY OF ATASCADERO GENERAL PLAN UPDATE

The 2045 GPU/ZCU is a long-range policy document that provides context and establishes guidance for decision-making, design and development of new projects, conservation of natural resources, promotion of economic development, improvements to mobility and infrastructure systems, expansion of public services, and enhancement of community amenities. The 2045 GPU/ZCU identifies year 2045 as a horizon year; however, the City recognizes that not all initiatives and goals in the 2045 GPU/ZCU may be achieved by 2045. The Zoning Code implements the General Plan and provides an administrative and development framework for parcels throughout the City. The Zoning Code will be revised to accommodate new General Plan Placetypes and will incorporate administrative and process updates aligned with General Plan policies, existing city processes, and permit streamlining directives.

# AIR QUALITY

## Existing Setting

The project is located within the South Central Coast Air Basin (SCCAB), and within the jurisdiction of the San Luis Obispo County Air Pollution Control District (SLOAPCD). Air quality in the SCCAB is influenced by a variety of factors, including topography, and local and regional meteorology.

### Topography

The City sits on the rolling hills of the eastern side of the Santa Lucia Mountain Range. It is bounded from the northwest by the Santa Lucia Mountain Range, which extends almost the entire length of the county. Rising sharply to about 3,000 feet at its northern boundary, the Santa Lucia Range gradually winds southward away from the coast, finally merging into a mass of rugged features on the north side of Cuyama Canyon. Point Buchon juts into the Pacific just south of Morro Bay to form the protective harbor of San Luis Obispo Bay. The Irish Hills are the dominant feature on this knob of land, rising abruptly from the shore to form steep cliffs and generally complex terrain from the Los Osos/Montana de Oro State Park area to Pismo Beach. These headlands have a pronounced influence on local wind flow patterns.

### Local and Regional Meteorology

The climate of the county can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This effect is diminished inland in proportion to the distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges. As a result, inland areas are characterized by a considerably wider range of temperature conditions. Maximum summer temperatures average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90s. Minimum winter temperatures average from the low 30s along the coast to the low 20s inland (SLOAPCD 2001).

Regional meteorology is largely dominated by a persistent high-pressure area that commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause

seasonal changes in the weather patterns of the area. The Pacific High remains generally fixed several hundred miles offshore from May through September, enhancing onshore winds and opposing offshore winds.

During spring and early summer, as the onshore breezes pass over the cool water of the ocean, fog, and low clouds often form in the marine air layer along the coast. Surface heating in the interior valleys dissipates the marine layer as it moves inland (SLOAPCD 2001).

From November through April the Pacific High tends to migrate southward, allowing northern storms to move across the county. About 90 percent of the total annual rainfall is received during this period. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days. Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county with less than 12 inches of rain in a typical year (SLOAPCD 2001).

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific High-pressure system and other global patterns, by topographical factors, and by circulation patterns resulting from temperature differences between the land and sea. In spring and summer months, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze (SLOAPCD 2001).

In the Fall, onshore surface winds decline, and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alternation of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, "trapping" pollutants near the surface (SLOAPCD 2001).

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a "Santa Ana" condition in which air, often pollutant-laden, is transported into the county from the east and southeast. This can occur over a period of several days until the high-pressure system returns to its normal location, breaking the pattern. The breakup of Santa Ana conditions may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the "post-Santa Ana" conditions lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the county (SLOAPCD 2001).

Atmospheric Stability and Dispersion

Air pollutant concentrations are primarily determined by the amount of pollutant emissions in an area and the degree to which these pollutants are dispersed into the atmosphere. The stability of the atmosphere is one of the key factors affecting pollutant dispersion. Atmospheric stability regulates the amount of vertical and horizontal air exchange or mixing that can occur within a given air basin. Restricted mixing and low wind speeds are generally associated with a high degree of stability in the atmosphere. These conditions are characteristic of temperature inversions (SLOAPCD 2001).

In the atmosphere, air temperatures normally decrease as altitude increases. At varying distances above the earth's surface, however, a reversal of this gradient can occur. This condition termed an inversion, is simply a warm layer of air above a layer of cooler air, and it has the effect of limiting the vertical dispersion of pollutants. The height of the inversion determines the size of the mixing volume trapped below. Inversion strength or intensity is measured by the thickness of the layer and the difference in temperature between the base and the top of the inversion. The strength of the inversion determines how easily it can be broken by wind or solar heating (SLOAPCD 2001).

Several types of inversions are common to this area. Weak, surface inversions are caused by radiational cooling of air in contact with the cold surface of the earth at night. In valleys and low-lying areas, this condition is intensified by the addition of cold air flowing downslope from the hills and pooling on the valley floor. Surface inversions are a common occurrence throughout the county during the winter, particularly on cold mornings when the inversion is strongest. As the morning sun warms the earth and the air near the ground, the inversion lifts, gradually dissipating as the day progresses. During the late spring and early summer months, cool air over the ocean can intrude under the relatively warmer air over land, causing a marine inversion. These inversions can restrict dispersion along the coast, but they are typically shallow and will dissipate with surface heating (SLOAPCD 2001).

In contrast, in the summertime, the presence of the Pacific high-pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms it to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, is common to all of coastal California and can act as a nearly impenetrable lid to the vertical mixing of pollutants. The base of the inversion typically ranges from 1,000 to 2,500 feet above sea level; however, levels as low as 250 feet, among the lowest anywhere in the state, have been recorded on the coastal plateau in San Luis Obispo County. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest or worst-case ozone levels are often associated with the presence of this type of inversion (SLOAPCD 2001).

## Criteria Air Pollutants

For the protection of public health and welfare, the Clean Air Act (CAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The CAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

## Human Health & Welfare Effects

Common air pollutants and associated adverse health and welfare effects are summarized in Table 1. Within the SCCAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM). Health effects commonly associated with criteria air pollutants are summarized in Table 1. As depicted in Table 1, exposure to increased pollutant concentrations of ozone and PM can

result in various heart and lung ailments, cardiovascular and nervous system impairment, and premature death.

**Table 1. Common Pollutants & Adverse Effects**

| Pollutant | Human Health & Welfare Effects |
|---|---|
| Particulate Matter ($PM_{10}$ & $PM_{2.5}$) | Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze). |
| Ozone ($O_3$) | Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes. |
| Sulfur Dioxide ($SO_2$) | Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel; damage crops and natural vegetation. Impairs visibility. A precursor to acid rain. |
| Carbon Monoxide (CO) | Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death. |
| Nitrogen Dioxide ($NO_2$) | Respiratory irritant; aggravates lung and heart problems. A precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere. |
| Lead (Pb) | Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems. |

*Source: ARB 2018*

Ozone is a secondary pollutant, which is formed by the combination of oxides of nitrogen ($NO_X$) and reactive organic gases (ROG), also commonly referred to as volatile organic compounds (VOCs). Ozone is not a directly emitted pollutant. $NO_X$ and ROG are not criteria air pollutants but, when in the presence of sunlight, they can form ozone and also contribute to the formation of secondary $PM_{2.5}$. Because ozone is not a directly emitted pollutant and is created under specific meteorological conditions over a wide transport area, ozone concentrations are typically evaluated at a regional level using complex photochemical models. These models are capable of predicting concentrations that take into account variations in amounts of precursor emissions (e.g., ROG, $NO_X$), temperature, inversions, sunlight, hourly variations, ambient conditions, and wind flow over long distances (e.g., miles). At the project level of analysis, evaluation of ozone concentrations is "not practicable and not likely [to] yield valid information" (SJVAPCD 2015).

It is important to note that the health effects of criteria air pollutants are taken into consideration when the U.S. EPA establishes the NAAQS for individual pollutants. The health effects of a particular pollutant are analyzed on a regional basis based on the area's attainment of the NAAQS. As discussed later in this report, the Air Quality Index (AQI) is one common method of evaluating public health impacts for criteria air pollutants of primary concern. In addition, local air districts establish significance thresholds that are based on the evaluation of an individual project's contribution to regional air quality conditions and associated health effects.

## Odors

Typically, 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 (i.e. irritation, anger, or anxiety) to physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SLOAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be applicable to SLOAPCD's Rule 402, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the SLOAPCD. The SLOAPCD recommends that odor impacts be addressed in a qualitative manner. Such analysis shall determine if the project results in excessive nuisance odors, as defined under the California Code of Regulations, Health & Safety Code Section 41700, air quality public nuisance.

*Existing Sources of Odors*

Land uses that typically produce objectionable odors with the potential of affecting a substantial number of people include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities. Within the City of Atascadero, major sources of potential odors include the Atascadero Water Reclamation Facility, located east of the Chalk Mountain Golf Course; as well as, fast food restaurants, bakeries, and coffee roasting facilities.

## Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the Federal Clean Air Act (FCAA) or the California Clean Air Act (CCAA) and are thus not subject to National or State ambient air quality standards (AAQS). TACs are not considered criteria pollutants in that the FCAA and CCAA do not address them specifically through the setting of National or State AAQS. Instead, the U.S. EPA and California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national level, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act [Assembly Bill (AB) 1807] and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

At the state level, the ARB has authority for the regulation of emissions from motor vehicles, fuels, and consumer products. Most recently, diesel-exhaust particulate matter (DPM) was added to the ARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM

are estimated to be responsible for about 70 percent of the total ambient TAC risk. The ARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (ARB 2005).

At the local level, air districts have authority over stationary or industrial sources. All projects that require air quality permits from the SLOAPCD are evaluated for TAC emissions. The SLOAPCD limits emissions and public exposure to TACs through a number of programs. The SLOAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SLOAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

Sources of TACs generally include, major freeways and high-traffic roadways, large distribution centers involving the use of diesel-fueled heavy-duty trucks, railroad yards, ports, refineries, chrome platers, dry cleaners using perchloroethylene, and gasoline dispensing facilities (ARB 2005). In the State of California, the use of Perchloroethylne in dry cleaning operations was phased out in 2023.

*Existing Sources of TACs*

Within the City of Atascadero and surrounding areas, major sources of TACs are largely associated with on-road motor vehicles traveling along State Route 101 (SR-101) and SR-41. No major TAC-emitting facilities were identified in the City of Atascadero or surrounding areas (ARB 2026). To a lesser extent, stationary sources permitted by SLOAPCD, such as emergency-use generators and gasoline dispensing facilities, may also result in emissions of TACs. However, these stationary sources would be subject to SLOAPCD emissions limitations and permitting requirements.

*Land Use Compatibility with TAC Emission Sources*

The ARB published an informational guide entitled: Air Quality and Land Use Handbook: A Community Health Perspective (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. The ARB's Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined "buffer zones". It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies (ARB 2005). Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located within the distances identified. ARB-recommended separation distances for various sources of emissions are summarized in Table 2.

*Naturally-Occurring Asbestos*

Asbestos is the common name for a group of naturally-occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally-occurring asbestos (NOA), which was identified as a TAC in 1986 by ARB, is located in many parts of California and is commonly associated with ultramafic rock.

The western and southern areas of the City of Atascadero have been identified as having a potential for naturally-occurring ultramafic rock and serpentine soils (SLOAPCD 2018). Refer to Appendix A for a map depicting areas having a potential for naturally-occurring asbestos.

**Table 2. Recommendations on Siting New Sensitive Land Uses Near TAC Emission Sources**

| Source Category | Advisory Recommendations |
|---|---|
| Freeways and High-Traffic Roads | • Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. |
| Distribution Centers | • Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).<br>• Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points. |
| Rail Yards | • Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.<br>• Within one mile of a rail yard, consider possible siting limitations and mitigation approaches. |
| Ports | • Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks. |
| Refineries | • Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation. |
| Chrome Platers | • Avoid siting new sensitive land uses within 1,000 feet of a chrome plater. |
| Dry Cleaners Using Perchloroethylene[1] | • Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.<br>• Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations. |
| Gasoline Dispensing Facilities | • Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities. |

*Recommendations are advisory, are not site specific, and may not fully account for future (post year 2005) reductions in emissions, including those resulting from compliance with existing/future regulatory requirements.*

1. *Withing the State of California, the use of perchloroethylene was phased out in 2023.*

*Source: ARB 2005*

### *Asbestos-Containing Materials*

Asbestos-Containing Materials (ACMs) are regulated under the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation. The NESHAP regulation requires a thorough inspection of regulated structures for the identification of NOAs prior to demolition or renovation. Notification requirements may also apply. Regulated structures include institutional, commercial, and industrial buildings; as well as, residential buildings that are demolished or renovated as part of a commercial or public project (SLOAPCD 2026).

Within San Luis Obispo County, the SLOAPCD implements the asbestos NESHAP regulation. ACMs are typically more prevalent in older structures, generally considered to be 1970's era and earlier. However, it is important to note that the use of asbestos in building materials has not been banned and may also be present, to some extent, in newer construction. As a result, for structures subject to NESHAP requirements, a thorough inspection is required prior to demolition or renovation (SLOAPCD 2026).

## Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive

receptors." The term “sensitive receptors” refers to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, assisted living facilities, and hospitals are examples of sensitive land uses.

*Existing Sensitive Land Uses*

Sensitive land uses within the City of Atascadero and surrounding areas consist predominantly of residential land uses; as well as, schools, daycare facilities, assisted living facilities, and the Atascadero State Hospital.

## Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in the SCCAB. The Atascadero-Lift Station #5 monitoring station is the closest representative monitoring station with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. Ambient monitoring data was obtained for the last three years of available measurement data (i.e., 2022 through 2024) and is summarized in Table 3. As depicted, the national and state $PM_{2.5}$ standards were exceeded on multiple days over the last three years of available data. Measured 24-hour $PM_{10}$, 8-hour ozone, 1-hour ozone, and $NO_2$ concentrations did not exceed the state and federal ambient air quality standards during the last three years of available data (ARB 2026b).

## Air Quality Index

The health effects of ambient air pollutant concentrations can be evaluated and presented in various ways. The most common method is the use of the Air Quality Index (AQI). The U.S. EPA developed the AQI as an easy-to-understand measure of health impacts based on measured ambient air quality in comparison to established ambient air quality standards. Tables 4 and 5 present a summary of the health impacts for ozone and fine particulate matter ($PM_{2.5}$), respectively, based on the U.S. EPA’s AQI.

A summary of the annual air quality index for San Luis Obispo County for the last three years of available data is provided in Table 6. As depicted in Table 6, the County typically experiences "good” air quality with the total number of days ranging from 117 to 207 days per year. Days classified as “moderate” AQI ranged from 152 to 245 days per year. Over the last three years of available data, the County has experienced a total of 19 days classified as “Unhealthy for Sensitive Groups”. Over the past three years, the County has not experienced air quality conditions within the “Unhealthy”, “Very Unhealthy” or “Hazardous” range (U.S. EPA 2026).

## Table 3. Summary of Ambient Air Quality Monitoring Data

| Pollutant | Monitoring Year | | |
|---|---|---|---|
| | 2022 | 2023 | 2024 |
| **Ozone ($O_3$)** | | | |
| Maximum concentration (1-hour/8-hour average; ppm) | 0.069/0.060 | 0.073/0.059 | 0.071/0.062 |
| Number of days state/national 1-hour standard exceeded | 0/0 | 0/0 | 0/0 |
| Number of days state/national 8-hour standard exceeded | 0/0 | 0/0 | 0/0 |
| **Nitrogen Dioxide ($NO_2$)** | | | |
| Maximum 1-hour concentration (state/national; ppb) | 26/26.0 | 50/50.7 | 32/32.4 |
| Number of days state/national standard exceeded | 0/0 | 0/0 | 0/0 |
| **Suspended Particulate Matter ($PM_{2.5}$)** | | | |
| Maximum 24-hour concentration (national/state; µg/m3) | 19.1/19.1 | 24.3/24.3 | 28.7/28.7 |
| Number of days national standard exceeded (measured/calculated)(3) | 0/0 | 0/0 | 0/0 |
| **Suspended Particulate Matter ($PM_{10}$)** | | | |
| Maximum 24-hour concentration (national/state; µg/m3) | 39.7/38.8 | 49.5/48.7 | 39.3/39.3 |
| Number of days state standard exceeded (measured/calculated)(3) | 0/NA | 0/NA | 0/NA |
| Number of days national standard exceeded (measured/calculated)(3) | 0/0 | 0/0 | 0/0 |

*ppm = parts per million by volume, µg/m$^3$ = micrograms per cubic meter, NA=Not Available*
*Based on ambient concentrations obtained from the Atascadero-Lift Station #5 Monitoring Station.*
*Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that measurement would have exceeded the standard had measurements been collected every day.*
*Source: ARB 2026b*

## Table 4. Air Quality Index Summary for Ozone & Related Health Effects

| Air Quality Index / 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| *AQI 51-100: Moderate*<br>Ambient Ozone Concentrations: 55-70 ppb | *Sensitive Groups*: Children and people with asthma are the groups at most risk.<br>*Health Effects Statements*: Unusually sensitive individuals may experience respiratory symptoms.<br>*Cautionary Statements*: Unusually sensitive people should consider limiting prolonged outdoor exertion. |
| *AQI 101-150: Unhealthy for Sensitive Groups*<br>Ambient Ozone Concentrations: 71-85 ppb | *Sensitive Groups*: Children and people with asthma are the groups at most risk.<br>*Health Effects Statements*: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.<br>*Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion. |
| *AQI 151–200: Unhealthy*<br>Ambient Ozone Concentrations: 86-105 ppb | *Sensitive Groups*: Children and people with asthma are the groups at most risk.<br>*Health Effects Statements*: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.<br>*Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion. |
| *AQI 201-300: Very Unhealthy*<br>Ambient Ozone Concentrations: 106-200 ppb | *Sensitive Groups*: Children and people with asthma are the groups at most risk.<br>*Health Effects Statements*: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.<br>*Cautionary Statements*: Active children and adults, and people with respiratory disease, such as asthma, should avoid outdoor exertion; everyone else, especially children, should limit outdoor exertion. |
| *An AQI of 50 and below is categorized as "Good" and air quality is satisfactory, and poses little or no risk. An AQI of 301 or higher is categorized as "Hazardous" having a health warning of emergency conditions: everyone is more likely to be affected. Outdoor activities should be avoided for all individuals.*<br>*AQI = Air quality index, ppb = parts per billion*<br>*Source: ARB 2018* | |

## Table 5. Air Quality Index Summary for Fine Particulate Matter & Related Health Effects

| Air Quality Index / 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| *AQI 51-100: Moderate*<br>Ambient Concentrations: 12.1-35.4 µg/m$^3$ | *Sensitive Groups:* Some people who may be unusually sensitive to particulate.<br>*Health Effects Statements*: Unusually sensitive people should consider reducing prolonged or heavy exertion.<br>*Cautionary Statements*: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. |
| *AQI 101-150: Unhealthy for Sensitive Groups*<br>Ambient Concentrations: 35.5-55.4 µg/m$^3$ | *Sensitive Groups:* People with heart or lung disease, older adults, children, and teenagers.<br>*Health Effects Statements*: Increasing likelihood of respiratory symptoms for sensitive individuals, aggravation of heart or lung disease, and premature mortality in persons with cardiopulmonary disease, and the elderly.<br>*Cautionary Statements:* If you have heart disease: Symptoms such as palpations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact a health care provider. |
| *AQI 151–200: Unhealthy*<br>Ambient Concentrations: 55.5-150.4 µg/m$^3$ | *Sensitive Groups:* Everyone.<br>*Health Effects Statements*: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly; increased respiratory effects in general population.<br>*Cautionary Statements: Sensitive groups:* Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities. |
| *AQI 201-300: Very Unhealthy*<br>Ambient Concentrations: 150.5-250.4 µg/m$^3$ | *Sensitive Groups:* Everyone.<br>*Health Effects Statements*: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly; significant increase in respiratory effects in general population.<br>*Cautionary Statements: Sensitive groups:* Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or reschedule to a time when air quality is better. |
| *An AQI of 50 and below is categorized as "Good" and air quality is satisfactory and poses little or no risk. An AQI of 301 or higher is categorized as "Hazardous" having a health warning of emergency conditions: everyone is more likely to be affected. Outdoor activities should be avoided for all individuals.*<br>*AQI = Air quality index, µg/m3 = micrograms per cubic meter*<br>*Source: ARB 2018* | |

## Table 6. Air Quality Index Annual Historical Summary

| Year | Air Quality Index (AQI) - Number of Days | | | | | |
|---|---|---|---|---|---|---|
| | Good | Moderate | Unhealthy for Sensitive Groups | Unhealthy | Very Unhealthy | Hazardous |
| 2024 | 193 | 163 | 10 | 0 | 0 | 0 |
| 2023 | 207 | 152 | 6 | 0 | 0 | 0 |
| 2022 | 117 | 245 | 3 | 0 | 0 | 0 |
| *Represents overall air quality taking into account all criteria pollutants measured.*<br>*Source: U.S, EPA 2026* | | | | | | |

## Regulatory Framework

Air quality within the SCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the SLOAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation.

### Federal

*U.S. Environmental Protection Agency*

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

*Federal Clean Air Act*

The FCAA required the U.S. EPA to establish NAAQS or National AAQS, and set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 7.

### State

*California Air Resources Board*

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 7. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel, and engine used.

*California Clean Air Act*

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for ozone, CO, sulfur dioxide ($SO_2$), and nitrogen dioxide ($NO_2$) by the earliest practicable date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for the implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

*Assembly Bills 1807 & 2588 - Toxic Air Contaminants*

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions

inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

**Table 7. Summary of Ambient Air Quality Standards & Attainment Designations**

| San Luis Obispo County Attainment Status | | | | | | |
|---|---|---|---|---|---|---|
| **Pollutant** | **Averaging Time** | **California Standards*** | | **Federal Standards†** | | |
| | | **Concentration** | **Attainment Status** | **Primary** | **Secondary** | **Attainment Status** |
| **Ozone ($O_3$)** | 1 Hour | 0.09 ppm | Non-Attainment | – | Same as Primary Standard | Non-Attainment Eastern SLO County - Attainment Western SLO County‡ |
| | 8 Hour | 0.070 ppm | | 0.070 ppm | | |
| **Respirable Particulate Matter (PM10)** | 24 Hour | 50 µg/m³ | Non-Attainment | 150 µg/m³ | Same as Primary Standard | Unclassified |
| | Annual Arithmetic Mean | 20 µg/m³ | | – | | |
| **Fine Particulate Matter (PM2.5)** | 24 Hour | No State Standard | Attainment | 35 µg/m³ | Same as Primary Standard | Unclassified/ Attainment |
| | Annual Arithmetic Mean | 12 µg/m³ | | 9.0 µg/m³ | 15.0 µg/m³ | No Attainment Information§ |
| **Carbon Monoxide (CO)** | 8 Hour | 9.0 ppm | Attainment | 9 ppm | – | Unclassified/ Attainment |
| | 1 Hour | 20 ppm | | 35 ppm | – | |
| **Nitrogen Dioxide ($NO_2$)** | Annual Arithmetic Mean | 0.030 ppm | Attainment | 0.053 ppm | – | Unclassified/ Attainment |
| | 1 Hour | 0.18 ppm | | 100 ppb | Same as Primary Standard | |
| **Sulfur Dioxide ($SO_2$)** | Annual Arithmetic Mean | – | Attainment | 0.030 ppm | – | Unclassified/ Attainment |
| | 24 Hour | 0.04 ppm | | 0.14 ppm | – | |
| | 3 Hour | – | | – | 0.5 ppm | |
| | 1 Hour | 0.25 ppm | | 75 ppb | – | |
| **Lead** | 30 Day Average | 1.5 µg/m³ | Attainment | – | - | Unclassified/ Attainment |
| | Calendar Quarter | – | | 1.5 µg/m³ | Same as Primary Standard | |
| | Rolling 3-Month Average* | – | | 0.15 µg/m³ | | |
| **Visibility Reducing Particles** | 8 Hour | Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. | Unclassified | **No Federal Standards** | | |
| **Sulfates** | 24 Hour | 25 µg/m³ | Attainment | | | |
| **Hydrogen Sulfide** | 1 Hour | 0.03 ppm | Attainment | | | |
| **Vinyl Chloride*** | 24 Hour | 0.01 ppm | No Attainment Information | | | |

* For more information on California standards visit: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards

† For more information on Federal standards visit: https://www.epa.gov/criteria-air-pollutants

‡ San Luis Obispo County has been designated non-attainment east of the -120.4 deg Longitude line in areas of SLO County that are south of latitude 35.45 degrees, and east of the -120.3 degrees longitude line in areas of SLO County that are north of latitude 35.45 degrees. Map of non-attainment area is available upon request from the APCD.

§ On February 7, 2024, the national annual $PM_{2.5}$ primary standard was lowered from 12.0 µg/m³ to 9.0 µg/m³. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15.0 µg/m³. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m³ also were retained. Area designations for the new standard are expected to be promulgated Feb. 2026. The county is designated as Unclassifiable/Attainment for the 2012 Annual $PM_{2.5}$ standard of 12.0 µg/m³.

Revised January 13, 2025

*Source: SLOAPCD 2025*

*In-Use Off-Road Diesel Vehicle Regulation*

On July 26, 2007, the ARB adopted a regulation to reduce DPM and oxides of nitrogen ($NO_X$) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road, as well as two-engine vehicles that drive on road, with the limited exception of two-engine sweepers. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation establishes emissions performance requirements, reporting, disclosure, and labeling requirements for off-road vehicles, and limits unnecessary idling.

*California Building Code*

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The CBC is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

*Green Building Standards*

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the CBC and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include EV-capable parking spaces which have electrical panel capacity and conduit to accommodate future installation. In addition, the 2019 Standards also required the installation of PV systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the

structure's loads. These solar requirements became effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

The most current standards are the 2025 Standards, which became effective January 1, 2026. The 2025 Standards build upon the previous standards by expanding the use of heat pumps in newly constructed residential buildings, encouraging electric-readiness, strengthens ventilation standards, and more (CEC 2026).

## Local

*County of San Luis Obispo Air Pollution Control District*

The SLOAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions within the region are maintained. Responsibilities of the SLOAPCD include but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

*City of Atascadero General Plan 2025*

The City's General Plan 2025 includes numerous policies related to transportation intended to minimize transportation impacts, reduce vehicle trip generation and vehicle miles traveled (VMT), and promote alternative means of transportation. These policies would have the added benefit of reducing local and regional air quality impacts. These policies include, but are not limited to, the following (City of Atascadero 2002):

- Policy 1.3: Maintain LOS C or better as the standard at all intersections and on all arterial and collector roads. Upon City Council approval, accept LOS D where residences are not directly impacted and improvements to meet the City's standard would be prohibitively costly or disruptive.
- Policy 2.1: Provide for a comprehensive system of creekside trails, roadside pathways, equestrian trails, multi-use trails and bikeways to connect neighborhoods, schools, commercial, and recreation areas, in accordance with the Bikeway and Trail Plan.
- Policy 2.2: Accommodate bicycles at major destinations including downtown, bus stops, schools, and other public facilities.
- Policy 2.3: Promote walking as an alternative to vehicle travel in retail district and multi-family areas.
- Policy 3.1: Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.
- Policy 3.2: Encourage expansion of public transit as needed to meet the changing needs of the area for local and regional access, including fixed route and demand response where appropriate.
- Policy 3.3: Comply with the Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

## Impact Analysis

### Thresholds of Significance

In accordance with Appendix G of the *California Environmental Quality Act (CEQA) Guidelines,* air quality impacts associated with the proposed project would be considered significant if it would:

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

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

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

To assist in the evaluation of air quality impacts, the SLOAPCD has developed recommended project-level significance thresholds, which are contained in the SLOAPCD's *CEQA Air Quality Handbook* (2012). However, at a programmatic level of environmental review, such as for the proposed 2045 GPU/ZCU, a quantitative project-level emissions analysis is not required. At the program-level of analysis, a finding of significant impact would be determined qualitatively by comparing consistency of the project with the Transportation and Land Use Planning Strategies outlined in the SLOAPCD's Clean Air Plan (CAP). Projects determined to be inconsistent with the SLOAPCD's CAP would be considered to have a potentially significant impact. Although not always applicable at a programmatic level, some project-level significance thresholds, such as exposure to odorous emissions, can be used to help inform of potentially significant impacts at a programmatic level of analysis. The SLOAPCD's project-level significance thresholds are identified as follows:

#### Construction Impacts

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for a project's short-term construction emissions are presented in Table 8 and discussed, as follows (SLOAPCD 2012):

**Table 8. SLOAPCD Thresholds of Significance for Project-Level Construction Impacts**

| Pollutant | Threshold[1] | | |
|---|---|---|---|
| | Daily (lbs/day) | Quarterly Tier 1 (tons) | Quarterly Tier 2 (tons) |
| Ozone Precursors (ROG + $NO_X$) | 137 | 2.5 | 6.3 |
| Diesel Particulate Matter (DPM) | 7 | 0.13 | 0.32 |
| Fugitive Particulate Matter ($PM_{10}$), Dust[2] | -- | 2.5 | -- |

*1. Daily and quarterly emissions thresholds are based on the California Health & Safety Code and the ARB Carl Moyer Guidelines.*
*2. Any project with a grading area greater than 4.0 acres of a worked area can exceed the 2.5 tons $PM_{10}$ quarterly threshold.*
*Source: SLOAPCD 2012*

ROG and NOx Emissions

Daily: For construction projects exceeding the 137 lbs/day threshold require Standard Mitigation Measures.

Quarterly – Tier 1: For construction projects exceeding the 2.5 tons/quarter threshold, require Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment. Off-site mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project.

Quarterly – Tier 2: For construction projects exceeding the 6.3 tons/quarter threshold, Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and off-site mitigation are required.

DPM Emissions

Daily: For construction projects exceeding the 7 lbs/day threshold, require Standard Mitigation Measures.

Quarterly - Tier 1: For construction projects lasting more than one quarter, exceedance of the 0.13 tons/quarter threshold requires Standard Mitigation Measures, BACT for construction equipment; and,

Quarterly - Tier 2: For construction projects exceeding the 0.32 tons/quarter threshold, require Standard Mitigation Measures, BACT, implementation of a CAMP, and off-site mitigation.

Fugitive Particulate Matter ($PM_{10}$), Dust Emissions

Quarterly- Tier 1: For construction projects exceeding the 2.5 tons/quarter threshold require Fugitive $PM_{10}$ dust Mitigation Measures and may require the implementation of a CAMP.

**Operational Impacts**

Criteria Air Pollutants

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for long-term operational emissions from a project are presented in Table 9.

**Table 9. SLOAPCD Thresholds of Significance for Project-Level Operational Impacts**

| Pollutant | Threshold[1] | |
|---|---|---|
| | Daily (lbs/day) | Annual (tons/year) |
| Ozone Precursors [reactive organic gas (ROG) + oxides of nitrogen ($NO_X$)] | 25 | 25 |
| Diesel Particulate Matter (DPM)[2] | 1.25 | -- |
| Fugitive Particulate Matter ($PM_{10}$), Dust | 25 | 25 |
| Carbon Monoxide (CO) | 550 | -- |

1. *Daily and annual emissions thresholds are based on the California Health & Safety Code Division 26, Part 3, Chapter 10, Section 40918 and the ARB Carl Moyer Guidelines for DPM.*
2. *Applies to on-site emissions. DPM is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations.*

*Source: SLOAPCD 2012*

For projects exceeding the 25 lbs/day operational ozone precursor threshold but not the corresponding 25 tons/year annual threshold, the project shall implement all applicable SLOAPCD-recommended mitigation measures. Off-site mitigation may be required for projects (exceeding the 25 lbs/day threshold) if all applicable SLOAPCD-recommended mitigation measures are not implemented, or if no mitigation measures are feasible for the project. Off-site mitigation is required for projects exceeding the 25 tons/year threshold (SLOAPCD 2017).

Toxic Air Contaminants

If a project has the potential to emit toxic or hazardous air pollutants or is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at a very low level of emissions. For the evaluation of new proposed land use projects that generate TACs, such as diesel-fueled engines, the SLOAPCD has defined the excess cancer risk significance threshold at 10 in a million.

Localized CO Concentrations

Localized CO concentrations associated with the proposed project would be considered a less-than-significant impact if: (1) Traffic generated by the proposed project would not result in deterioration of signalized intersection level of service (LOS) to LOS E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F (Caltrans 1996).

Odors

Screening of potential odor impacts is typically recommended for the following two situations:

- Projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate; and
- Residential or other sensitive receptor projects or other projects that may attract people locating near existing odor sources.

If the proposed project would locate receptors and known odor sources within one mile of each other, a full analysis of odor impacts is recommended. Known odor sources of primary concern, as identified by the SLOAPCD include landfills, transfer stations, asphalt batch plants, rendering plants, petroleum refineries, and painting/coating operations, as well as, composting, food processing, wastewater treatment, chemical manufacturing, and feedlot/dairy facilities.

## Methodology

Short-term emissions associated with construction activities are largely dependent on the type of development proposed, area of ground disturbance, number of buildings to be demolished, equipment required, and construction schedules. Long-term operational emissions are typically associated with the operational of mobile sources, stationary sources (e.g., boilers, generators), and area sources (e.g., landscape maintenance, and energy use. However, because much of this information for specific future development projects and the timing of such development is unknown at this time, net increases in future construction and operational emissions and associated air quality impacts were qualitatively discussed.

## Relevant Proposed GPU Goals and Policies

The 2045 General Plan includes numerous goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include, but are not limited to, the following:

**Goal PSI-6:** Increased development and use of clean, renewable energy systems

*Policy PSI-6.1: Onsite Renewable Energy*. Facilitate the installation of onsite renewable energy systems for residences and places of business.

*Policy PSI-6.2: Energy Efficient Planning and Building Design*. Encourage energy-efficient site planning and building design/construction.

- *Action A:* Implement streamlined building permit review processes for onsite energy systems.
- *Action B:* Continue to implement the California Green Building Standards.

**Goal REC-7:** Improve air quality and reduced health risks

*Policy REC-7.1: Clean Air.* Support regional efforts to maintain clean air.

- *Action A:* Require dust control and emissions limitations during project construction.
- *Action B:* Adopt circulation policies that encourage vehicle trip reductions consistent with the Mobility Element**,** and support regional programs to maintain clean air.
- *Action C:* Concentrate new intensive development at identified nodes and commercial corridors to help reduce vehicle trips.
- *Action D:* Continue to support the development of Park-and-Ride facilities in appropriate locations.

**Goal MO-1:** A safe, multimodal, interconnected, and efficient circulation system that serves all community members

*Policy MO-1.2: Multimodal Options.* Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

*Policy MO-1.3: Regional Facilities.* Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

*Policy MO-1.4: Congestion Management and Trip Reduction.* Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

*Policy MO-1.6: Truck Routes.* Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

**Goal MO-4:** Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

*Policy MO-4.1: Coordination and Planning.* Provide "backbone" pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

*Policy MO-4.2: Pedestrian Mobility.* Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

*Policy MO-4.3: Bicycle Mobility.* Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

*Policy MO-4.4: Rural Trails.* Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

*Policy MO-4.5: School and Park Connections.* Provide a comprehensive system of routes to schools and parks.

**Goal MO-5:** Reliable alternative travel modes that reduce traffic congestion and improve air quality.

*Policy MO-5.1: Single-Occupancy Vehicle Alternatives.* Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

*Policy MO-5.2: Public Transit.* Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

*Policy MO-5.3: County TDM Requirements.* Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

**Goal MO-6:** Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms.

*Policy MO-6.1: Changing Mobile Technology.* Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

*Policy MO-6.2: Autonomous Vehicles.* Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

**Goal LU-4:** A dedicated, focused area for industrial activity that minimizes impact on nearby residential neighborhoods and protected open space areas

*Policy LU-4.3: Buffer Industrial Uses.* Provide buffers between industrial and residential uses. Focus heavy industrial sites away from residential uses.

**Goal REC-3:** Dedicated system of open space that upholds the community's rural character, local biodiversity, natural landscape, and enjoyment of recreation

*Policy REC-3.3: Grading.* Prevent unnecessary intensive grading of development sites.

**Goal LU-2:** Enhanced major corridors that serve regional focused, distinct, and economically viable nodes.

*Policy LU-2.3: Mid-block Infill.* Promote flexible land use patterns in areas between activity nodes along El Camino Real and support increased residential densities adjacent to and along commercial corridors to support commercial business activity and growth.

*Policy LU-2.4: Mixed-Use Areas.* Create mixed-use districts in locations that benefit from the synergy of commercial and residential uses.

*Policy LU-2.5: Multi-Modal Corridors.* Improve pedestrian and bicycle facilities along El Camino Real and Morro Road. Major corridors should be safe, comfortable, and enjoyable for pedestrians, bicyclists, and drivers alike.

## Impacts and Mitigation Measures

***Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?***

**SLOAPCD Clean Air Plan**

As part of the CCAA, the SLOAPCD is required to develop a plan to achieve and maintain the state ozone standard by the earliest practicable date. The CAP was adopted by SLOAPCD on March 26, 2002. The SLOAPCD's 2001 CAP addresses the attainment and maintenance of state and federal ambient air quality standards. The SLOAPCD's CAP outlines the District's strategies to reduce ozone-precursor pollutants [i.e., reactive organic gas (ROG) and $NO_X$] from a wide variety of sources. The SLOAPCD's CAP includes a stationary-source control program, which includes control measures for permitted stationary sources; as well as transportation and land use management strategies to reduce motor vehicle emissions and use. The stationary-source control program is administered by SLOAPCD. Transportation and land use control measures are implemented at the local or regional level, by promoting and facilitating the use of alternative transportation options, increased pedestrian access and accessibility to community services and local destinations, reductions in VMT, and promotion of congestion management efforts. In addition, local jurisdictions also prepare population forecasts, which are used by SLOAPCD to forecast population-related emissions and air quality attainment, including those contained in the SLOAPCD's CAP. The 2001 CAP emissions forecasts and control strategies were built using regional growth assumptions, specifically the population, housing, and employment projections provided by SLOCOG. Therefore, if a project is consistent with current SLOCOG growth forecasts, it is generally considered part of the expected growth scenario that the air quality plan anticipated. For these reasons, consistency with the CAP has been evaluated based on the following questions:

1. Are the population and employment projections attributable to the 2045 GPU/ZCU equal to or less than those identified in the most recent growth forecasts adopted by SLOCOG and would implementation of the 2045 GPU/ZCU result in an improved jobs/housing ratio?
2. Is projected VMT growth attributable to the 2045 GPU/ZCU equal to or less than the corresponding projected rate of population growth?
3. Is the 2045 GPU/ZCU consistent with the land use and transportation control measures (TCMs) identified in the CAP?
4. Is projected VMT growth attributable to the 2045 GPU/ZCU equal to or less than applicable VMT thresholds established by the State Office of Planning and Research (OPR) for the evaluation of VMT impacts associated with land use plans?

If the answer to all of the above questions is yes, then the 2045 GPU/ZCU would be considered to be consistent with the CAP. If the answer to any one of the above questions is no, then the emissions reductions projected in the CAP may not be achieved, which could delay or preclude attainment of the state ozone standard and the 2045 GPU/ZCU would be considered inconsistent with the CAP.

*Projected Population & Employment Growth*

The 2045 GPU/ZCU is anticipated to guide sustainable population growth throughout the planning period and includes City population and employment growth projections based on land capacity, ability to expand infrastructure, and anticipated growth rates for both residential and commercial sectors. The City's forecasted population for the 2045 GPU/ZCU is 37,279. In comparison to year 2024 conditions, the

proposed 2045 GPU/ZCU would increase the City's population by 6,596 residents, an approximate 21.5 percent increase. Employment is expected to increase from 9,729 jobs in 2024 to 12,914 jobs in 2045, improving the City's jobs/housing ratio from 0.77 to 0.83.

According to the SLOCOG 2060 Regional Growth Forecast, the population of the City of Atascadero is projected to increase to 31,841 residents by 2040 and to 32,342 residents by 2050. Employment is projected to increase to 12,307 jobs in 2040 and 12,988 jobs in 2050 (SLOCOG 2025). Overall, the anticipated growth in the City through 2045 is similar to the SLOCOG growth projections for the City. However, projected increases in population attributable to the proposed 2045 GPU/ZCU (i.e., 37,279) would be higher than the SLOCOG's projections of 31,841 residents by 2040 and to 32,342 residents by 2050 (SLOCOG 2025).

According to SLOCOG's 2019 Regional Housing Needs Assessment, the City has more housing units than jobs, indicative of a "jobs-poor" community. The City's jobs-to-housing ratio is estimated to worsen from a year 2015 ratio of 0.77 to a 0.71 jobs-housing ratio by the year 2030 (SLOCOG 2019). With implementation of the proposed 2045 GPU/ZCU, the number of housing units would total approximately 15,550 and the number of jobs would total approximately 12,914, which would result in a jobs/housing ratio of 0.83 for year 2045. Although the 2045 GPU/ZCU would result in increased development, population, and employment, the jobs/housing ratio for the City would be projected to improve with implementation of the 2045 GPU/ZCU.

*VMT Growth*

The 2045 GPU/ZCU would be more VMT-efficient on a regional basis than the current General Plan as it would focus growth in areas with a mix of uses, more travel options, and at levels that are more supportive of transit use. The City's large geographic area and existing low-density development patterns require longer vehicle trips and reduce non-auto travel options. The 2045 GPU/ZCU focuses growth in more VMT-efficient areas at higher densities and with more travel options. In addition, projected improvements in the jobs/housing ratio with implementation of the 2045 GPU/ZCU would help to further reduce VMT by providing more jobs locally, thereby, reducing VMT travel and to out-of-City locations. As a result, the 2045 GPU/ZCU would produce less VMT per capita and per employee than the current General Plan (CCTC 2025).

Daily VMT within the City's sphere of influence is projected to increase from 556,552 daily miles in year 2024 to 602,702 daily miles in 2045, an approximate 8.3 percent increase in VMT. As noted above, the proposed 2045 GPU/ZCU would increase the City's population by approximate 21.5 percent in 2045. The percent increase in VMT attributable to the proposed 2045 GPU/ZCU (8.3 percent) would not exceed the percent increase in population (21.5 percent).

*Transportation and Land Use Control Measures*

The SLOAPCD's CAP includes multiple transportation and land use control measures intended to reduce emissions through reductions in VMT and the promotion of alternative forms of transportation. A summary of the more relevant control measures and the 2045 GPU/ZCU's consistency with these measures is provided in Table 10. As noted in Table 10, the 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype

encourages an eclectic and complementary mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses with upper-story residential and office units. The 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT. In addition, the City's jobs-housing ratio would improve from 0.75 to 0.84. Numerous other goals and policies have been included in the 2045 GPU/ZCU that would support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. However, even with implementation of the proposed goals and policies, the proposed 2045 GPU/ZCU would generate residential and employment-based VMT at levels that are above OPR's recommended thresholds (CCTC 2025). As a result, increases in VMT attributable to the 2045 GPU/ZCU would be inconsistent with regional planning efforts, such as the Regional Transportation Plan. Increases in VMT may result in long-term increases of mobile-source air pollutants not accounted for in the CAP. As a result, long-term increases of regional pollutants and consistency with the SLOAPCD's CAP would be considered a **potentially significant** impact**.**

**Table 10. Consistency with SLOAPCD Clean Air Plan Control Measures**

| SLOAPCD's Clean Air Plan Control Measures | 2045 GPU/ZCU Goals & Policies |
|---|---|
| **L-1 Planning Compact Communities**. Dwelling units for those who prefer higher density living should be clustered in urban core areas and village centers, thus creating a market for convenience retailing and services that contribute to the richness of an urban life-style. As commercial facilities become integrated into residential areas in a mixed-use development pattern, the need to use an automobile for routine trips diminishes. | ***Consistent.*** The 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype encourages a mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses. In comparison to the existing General Plan, the 2045 GPU/ZCU would result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT on a per capita basis. |
| **L-2 Providing for Mixed Land Use**. The mixing of compatible commercial and residential land uses should be encouraged when it will reduce dependence on the automobile, or it improves the balance between jobs and housing. | |
| **L-3 Balancing Jobs and Housing.** An imbalance between jobs and housing results in longer travel distances between home and work and, consequently, more air pollution from cars. | ***Consistent.*** With implementation of the 2045 GPU/ZCU, the City's jobs-housing ratio would improve from 0.75 to 0.84. |
| **L-4 Circulation Management.** The primary goal of the recommended Circulation Management Policies and Programs is to encourage the design and construction of the county's transportation system in a manner that supports alternative travel modes and decreases reliance on single occupant motor vehicles. To this end, improving accessibility for all travelers, not just drivers, is the primary transportation objective. | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional transportation planning and management efforts, including numerous measures intended to encourage the design and construction of alternative travel modes. Such policies include, but not limited to: Policies MO-1.1 – MO-1.6, MO-3.1, MO-3.2, MO-4.1 – MO-4.5, and MO-5.1 – MO-5.3, |
| **L-5 Communication, Coordination and Monitoring.** Changes in land use and circulation planning will be necessary to maintain clean air in the county over the long term. These same changes, however, will also provide benefits in reduced traffic congestion. It is very important to the long-term | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to maintain and improve coordination with other regional agencies. Such |

| SLOAPCD's Clean Air Plan Control Measures | 2045 GPU/ZCU Goals & Policies |
|---|---|
| success of the Clean Air Plan that local and regional jurisdictions and the District work together to achieve these mutual goals. | policies include, but not limited to: Policies MO-1.1, MO-1.2, MO-1.3, MO-3.1, MO-3.2, MO-4.1, MO-4.3, MO-4.4, MO-5.2, MO-5.3, and MO-6.3. |
| **T-2A Local Transit System Improvements.** The focus of this measure is on improving local transit service and infrastructure to increase ridership by enhancing the convenience and overall viability of the system. Key elements of the measure include an ongoing improvements to bus boarding areas, development of multi-modal centers, service expansion, and replacement of older diesel transit buses with new diesel-powered vehicles meeting ARB's October 31, 2002 emission certification standards or CNG vehicles meeting one of ARB's optional emission credit standards. | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. Such policies include, but not limited to: Policies MO-1.1 – MO-1.5, and MO-5.1 – MO-5.3. |
| **T-2B Regional Public Transit Improvements.** The focus of this measure is to improve regional transit service and infrastructure with the goal of increasing ridership rates in excess of countywide population growth rates. CCAT's ridership has risen by over 95% from 143,871 in 1991 to 281,504 in 2000. | |
| **T-3 Bicycling and Bikeway Enhancements.** The goal of this measure is to achieve a county-wide average bicycle mode share of 5% by 2005. | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use. Such policies include, but not limited to: Policies REC-7.1, MO-1.1 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1, MO-5.3, and LU-2.5. |
| **T-4 Park and Ride Lots.** Park and Ride (P&R) lots provide a staging area for ridesharing activities. The most common use of P&R lots in San Luis Obispo County is as a meeting point for car- and vanpoolers. Transit connections are available at some lots within a short walk, and bike lockers are available at most lots; however, the primary use is for automobile parking. In San Luis Obispo County, P&R lots are administered by Caltrans and SLOCOG. | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to improve accessibility to park and ride lots. Such policies include, but not limited to: Policies MO-5.1 – MO-5.3. Specifically, Policy 5.2 includes "Action C, Support and encourage the use and expansion of Park & Ride facilities and other rideshare infrastructure." |
| **T-6 Traffic Flow Improvements.** This control measure focuses on traffic flow improvements and "traffic-calming" to improve the flow of all transportation modes. Traffic-calming refers to a full range of methods designed to improve the flow of nonmotorized transportation by slowing down the speed of motorized traffic. Traffic-calming is generally used in residential areas on non-arterial local streets and roads. The goal of this measure is to improve the road system and infrastructure in a way that increases its efficiency, reduces emissions, and supports the other Transportation Control Measures in this Plan. | ***Consistent.*** The 2045 GPU/ZCU incorporates numerous policies to improve accessibility traffic flow to increase efficiency, reduce emissions, and support other measures, such as the use of alternative means of transportation. Such policies include, but not limited to: Policies MO-1.1 – MO-1.6, MO-2.2, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, MO-6.3, and LU-2.3 – LU-2.5. |
| **T-8 Teleworking, Teleconferencing, and Telelearning**. Rapid advances in personal computer capability and the advent of video and on-line services have made these technologies ideal trip reduction strategies. | ***Consistent.*** The 2045 GPU/ZCU incorporates various goals and policies to support regional air quality and transportation planning efforts, including policies to support emerging mobile technology. Such policies include, but not limited to: Policies MO-6.1 – MO-6.3, and LU-5.3. |

*Proposed GPU Policies that Provide Mitigation*

The proposed 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions, energy demands, and vehicle miles traveled. Some of the more relevant GPU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

*Mitigation Measures*

No additional measures have been identified that would further reduce this impact.

*Significance after Mitigation*

It is important to recognize that the 2045 GPU/ZCU focuses growth in more VMT-efficient areas at higher densities and with more travel options, so it produces less VMT per capita and per employee than the existing General Plan. However, even with this focus on VMT-reducing development and implementation of 2045 GPU/ZCU policies, estimated increases in VMT would exceed OPR's recommended thresholds (CCTC 2025). In accordance with SLOAPCD-recommended guidance, future development projects would be evaluated for consistency with the SLOAPCD's CAP, which may result in reductions in project-related VMT and associated emissions. However, no additional policy-oriented mitigation measures have been identified that would further reduce this impact. As a result, this impact would be considered **significant and unavoidable**.

***Impact AQ-2: Would the project 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?***

**Long-term Operational Emissions**

As noted above, the 2045 GPU/ZCU includes various goals and policies that would reduce long-term operational emissions, including measures to reduce vehicle miles traveled, and promote alternative means of transportation. The promotion of alternatives to automotive transportation can help to reduce local and regional mobile-source emissions and energy consumption. Refer to Impact AQ-1 for a discussion of consistency with the SLOAPCD's CAP and long-term air quality impacts attributable to the 2045 GPU/ZCU.

**Short-term Construction Emissions**

In comparison to existing conditions, the proposed 2045 GPU/ZCU would result in a net increase of approximately 205 single-family dwelling units, 2,688 multi-family dwelling units, 481,454 square feet of commercial retail use, 595,666 square feet of commercial office use, and 467,501 square feet of industrial use. Construction activity associated with these land uses would cause temporary emissions of various air pollutants associated with project construction, such as demolition, grading, construction worker travel, hauling of construction supplies, fuel combustion by equipment, and architectural coating would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. The extent of daily emissions, particularly ROGs and $NO_X$ emissions, generated by construction equipment, would depend on the equipment used and the hours of operation for each project. The extent of $PM_{2.5}$ and $PM_{10}$ emissions would depend upon the amount of disturbed soils, the length of disturbance time, whether existing structures are demolished, whether

excavation is involved, and whether transporting excavated materials offsite is necessary. Dust emissions can lead to both nuisance and health impacts.

The SLOAPCD has not established plan-level significance thresholds for construction air pollutant emissions. At this time, most projects facilitated by the proposed 2045 GPU/ZCU do not have sufficient detail to allow project-level analysis. As a result, short-term air quality impacts would be considered **potentially significant**.

**Proposed GPU Policies that Provide Mitigation**

The 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions commonly associated with construction and operational activities. Some of the more relevant GPU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

**Mitigation Measures**

No additional measures have been identified that would further reduce this impact.

**Significance After Mitigation**

The City of Atascadero development review process requires a review of consistency with local and state policies, including SLOAPCD regulations and CEQA. Current with existing practices, each new discretionary development project associated with community buildout pursuant with the 2045 General Plan and Zoning Code Update would be required to be reviewed for consistency with these policies to help reduce local and regional impacts. Potentially significant impacts would require implementation of additional project-specific mitigation measures to further reduce project-generated emissions and associated air quality impacts; however, given the region's current nonattainment status and uncertainty regarding the timing and intensity of development activities, the need for project-specific mitigation measures for individual development projects, and the effectiveness of future mitigation for individual development projects, short-term and long-term air quality impacts would be considered **significant and unavoidable**.

***Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?***

Sensitive receptors include, but are not limited to, schools, parks and playgrounds, day care facilities, nursing homes, hospitals, and residential dwelling unit(s). The 2045 GPU/ZCU would include the development of land uses considered to be sensitive receptors, as well as new development near existing sensitive receptors. Activities associated with implementation of the 2045 GPU/ZCU could potentially include short-term, construction sources of TACs and long-term, operational sources of TACs, including stationary and mobile sources. As noted earlier in this report, TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health and $PM_{2.5}$ can cause a wide range of health effects.

**Short-Term Construction Emissions**

Construction projects can result in short-term increases of TACs, as well as emissions of airborne fugitive dust. Emissions of DPM emitted from construction vehicles is of particular concern. Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest

tightness, wheezing, and bronchitis. However, various other TACs from diesel exhaust also contribute to both cancer and non-cancer health risks. Construction-generated emissions of $PM_{2.5}$ can also contribute to significant health impacts, particularly among the more sensitive population groups (i.e., children, elderly, etc.).

In addition to emissions of DPM, other pollutants of potential localized concern include, but are not limited to, fugitive dust, airborne asbestos; as well as, airborne coccidioides fungus spores, which may contribute to increased occurrences of Valley Fever (also called coccidioidomycosis or "cocci"). Emissions of fugitive dust are largely dependent on the area of potential disturbance and environmental conditions at the site, such as wind speeds, wind direction, soil moisture content. Airborne concentrations of asbestos can occur during demolition of older structures that contain asbestos-containing materials; as well as, the disturbance of asbestos-containing soils. Some areas identified by the SLOAPCD as having a potential to contain naturally-occurring asbestos have been generally identified within the western areas of the City. A map depicting areas having a potential for naturally-occurring asbestos is included in Appendix A. Valley Fever is a disease caused by the coccidioides fungus that grows in the soil and dirt in some areas of California and tends to be more prevalent in drier, previously undisturbed soils. The disturbance of such soils may result in increases in occurrences of Valley Fever.

The amount of emissions generated during construction of individual projects and potential to result in increased exposure of individuals to airborne pollutants would vary depending on numerous factors, including the size of the development, the type, age and number of pieces of equipment required, and hours of use, site conditions, and environmental conditions. Furthermore, it is anticipated that multiple construction projects could occur simultaneously within a given year and within a given area. Without detailed construction information (i.e., construction schedules, demolition, grading, excavation, and construction requirements), construction-generated emissions of TACs and other airborne pollutants of local concern associated with individual development projects cannot be quantified at this time. As a result, exposure of sensitive receptors to short-term construction emissions would be considered **potentially significant**.

**Long-Term Operational Emissions**

*Toxic Air Contaminants*

Development of future land uses may include potential stationary sources of TACs, such as diesel-powered emergency-use power generators. The type and level of TAC emissions emitted would depend upon the nature of the land use and the specific methods and operations that involve toxic air emissions. Pursuant to SLOAPCD rules and regulations, such as SLOAPCD Rule 219 (Toxics New Source Review Rule), new and modified stationary sources of emissions are required to mitigate emissions using best available control technology and to offset emissions when above thresholds

In addition to the long-term exposure to stationary emission sources, new land uses may also be exposed to emissions from mobile sources. Major roadways of potential concern with regard to mobile-source TACs typically include roadways with average-daily traffic (ADT) volumes of 100,000 or more. Within the planning area, U.S. Highway 101 (US-101) is considered the primary source of mobile-source TAC emissions. Average-daily traffic volumes along US-101 located within the city range from approximately 55,000 to approximately 65,000 (CCTC 2025).

The proposed General Plan could include opportunities for new development and redevelopment near sources of TACs, including US-101, industrial land uses, or dry cleaners. In addition, depending on the type of future development, some projects contribute substantially to existing vehicle traffic on area roadways, particularly diesel-fueled heavy-duty trucks associated with industrial development. Such development could result in the exposure of sensitive receptors to mobile-sources of TACs. Given that future development could potentially result in increased long-term exposure of sensitive land uses to TACs, this impact would be considered **potentially significant**.

*Mobile-Source Carbon Monoxide*

Buildout of the 2045 GPU/ZCU would result in new development or redevelopment that would generate additional vehicle trips on area roadways. Areas with high vehicle density, such as congested intersections, have the potential to create concentrations of CO ("CO hotspots") and could potentially expose sensitive receptors to harmful levels of pollution.

Localized CO concentrations are the result of the volume of cars along a road and the level of emissions generated by vehicles, rather than the flow of traffic. Vehicle CO emissions have declined over time due to stringent State standards for vehicle emissions and would continue to decline as more stringent standards are put in place. However, CO hotspots can occur if large numbers of vehicles are concentrated on a roadway. This becomes a concern when the LOS of a given roadway is negatively affected by a project. Of particular concern are major signalized intersections that operate at unacceptable levels of service (i.e., LOS E, or worse). According to the traffic analysis, the signalized intersection of El Camino Real/San Anselmo Road is projected to operate at LOS F under future cumulative conditions. Therefore, long-term exposure to localized CO concentrations would be considered **potentially significant**.

**Proposed GPU Policies that Provide Mitigation**

Relevant GPU policies pertaining to short-term and long-term exposure to localize pollutant concentrations include Policy REC-7.1,a, LU-4.3, and REC-3.3.

**Proposed Mitigation Measures**

No additional measures have been identified that would further reduce this impact.

**Significance After Mitigation**

The 2045 GPU/ZCU policies REC-7.1,a and REC-3.3 would help to minimize construction-generated fugitive dust associated with future land use development projects. In addition, Policy LU-4.3 would provide buffer areas between industrial and residential land uses that would help to minimize potential exposure to operational TACs. In accordance with SLOAPCD's guidance, future development projects would be evaluated for potential short-term; as well as, long-term exposure to localized pollutants, including construction-generated emissions, emissions of TACs, as well as, other airborne pollutants, such as asbestos, CO, and coccidioides fungus spores. However, even with compliance with all State and local regulations, it is conceivable that some development projects may be large enough or close enough to a sensitive receptor that applicable project-level significance thresholds would be exceeded. In the event that a significant impact is identified for an individual project, SLOAPCD-recommended mitigation measures would be required to reduce project-related impacts. However, even with mitigation, it may not be possible to reduce potential emissions of TACS or exposure to localized airborne pollutants and all

health-related risks to nearby receptors to levels below the SLOAPCD-recommended significance thresholds. As a result, this impact would be considered **significant and unavoidable**.

***Impact AQ-4: Would the General Plan result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Project-specific analysis would be assessed for new development planned for in the 2045 GPU/ZCU.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. Land uses that typically produce objectionable odors with the potential to affect a substantial number of people include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, refineries, fast food restaurants, bakeries, and coffee roasting facilities. SLOAPCD Rule 402, Nuisance, prohibits the discharge of air contaminants or other materials, including odors, that would cause injury, detriment, nuisance, or annoyance to a considerable number of individuals. As a result, with compliance with SLOAPCD Rule 402, the 2045 GPU/ZCU would not result in the exposure of a substantial number of people to objectionable odors. This impact would be considered **less than significant**.

# GREENHOUSE GAS

## Existing Setting

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide**. Carbon dioxide ($CO_2$) is a colorless, odorless gas. $CO_2$ is emitted in a number of ways, both naturally and through human activities. The largest source of $CO_2$ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. Several specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to $CO_2$ emissions. The atmospheric lifetime of $CO_2$ is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2018).

- **Methane**. Methane ($CH_4$) is a colorless, odorless gas that is not flammable under most circumstances. $CH_4$ is the major component of natural gas, about 87 percent by volume. It is also formed and released into the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane into the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2018).

- **Nitrous Oxide**. Nitrous oxide ($N_2O$) is a clear, colorless gas with a slightly sweet odor. $N_2O$ is produced by both natural and human-related sources. Primary human-related sources of $N_2O$ are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, acid production, and nitric acid production. $N_2O$ is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of $N_2O$ is approximately 114 years (U.S. EPA 2018).

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and

consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 270 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2018).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and non-toxic. There are seven PFC gases: perfluoromethane ($CF_4$), perfluoroethane ($C_2F_6$), perfluoropropane ($C_3F_8$), perfluorobutane ($C_4F_{10}$), perfluorocyclobutane ($C_4F_8$), perfluoropentane ($C_5F_{12}$), and perfluorohexane ($C_6F_{14}$). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases $CF_4$ and $C_2F_6$ as byproducts. The estimated atmospheric lifetimes for PFCs range from 2,600 to 50,000 years (U.S. EPA 2018).

- **Nitrogen Trifluoride**. Nitrogen trifluoride ($NF_3$) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 16,100 carbon dioxide equivalent ($CO_2e$). While $NF_3$ may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, $NF_3$ was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride**. Sulfur hexafluoride ($SF_6$) is an inorganic compound that is colorless, odorless, non-toxic, and generally non-flammable. $SF_6$ is primarily used as an electrical insulator in high-voltage equipment. The electric power industry uses roughly 80 percent of all $SF_6$ produced worldwide. Leaks of $SF_6$ occur from aging equipment and during equipment maintenance and servicing. $SF_6$ has an atmospheric life of 3,200 years (U.S. EPA 2018).

- **Black Carbon**. Black carbon is the strongest light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands) (U.S. EPA 2018).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule. Often, estimates of GHG emissions are presented in $CO_2e$, which relates each gas by its global warming potential (GWP). Expressing GHG emissions in $CO_2e$ takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only $CO_2$ were being emitted. Table 11 provides a summary of the GWP for GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As

indicated, $CH_4$ traps over 25 times more heat per molecule than $CO_2$, and $N_2O$ absorbs roughly 298 times more heat per molecule than $CO_2$. Additional GHGs with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

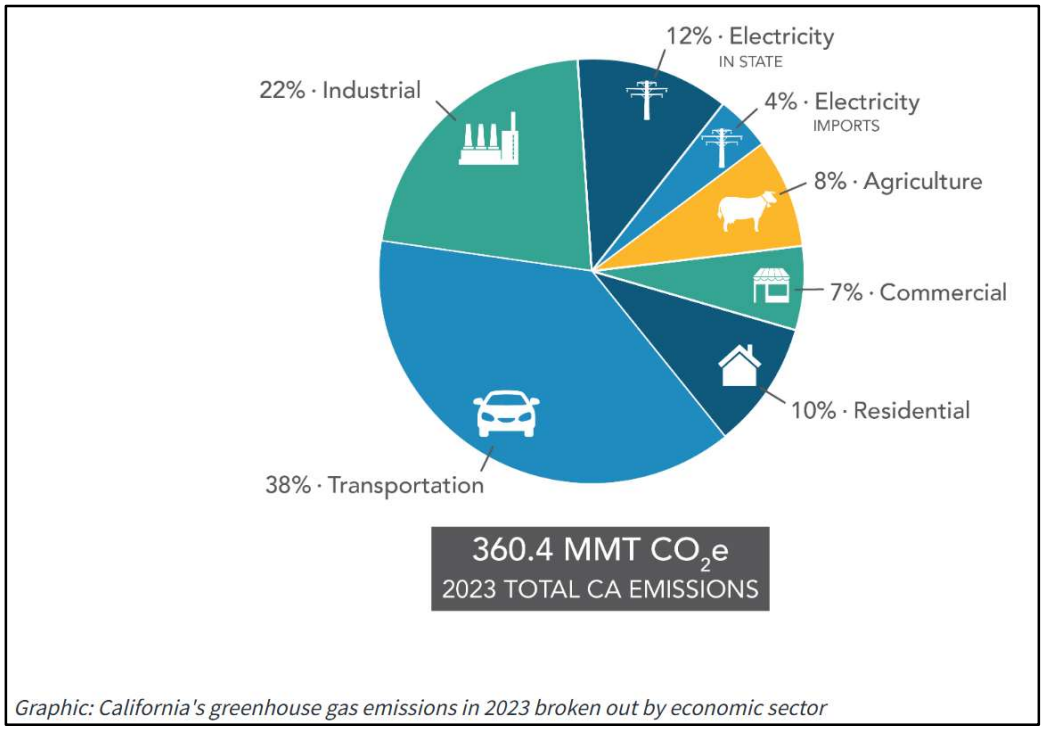
**Table 11. Global Warming Potential for Greenhouse Gases**

| Greenhouse Gas | Global Warming Potential (100-year) |
|---|---|
| Carbon Dioxide ($CO_2$) | 1 |
| Methane ($CH_4$) | 25 |
| Nitrous Dioxide ($N_2O$) | 298 |
| **Based on IPCC GWP values for 100-year time horizon*<br>*Source: IPCC 2007* | |

***Statewide GHG Emissions***

In 2023, GHG emissions within California totaled 360.4 million metric tons (MMT) of $CO_2e$. GHG emissions, by sector, are summarized in Figure 1. Within California, the transportation sector is the largest contributor, accounting for approximately 38 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second-largest contributor, totaling roughly 22 percent. Electricity generation totaled roughly 16 percent. Other major emission sources included commercial uses, residential uses, agriculture, and refrigerants (ARB 2026a).

**Figure 1. California GHG Emissions Inventory by Sector & Subsector**




*Graphic: California's greenhouse gas emissions in 2023 broken out by economic sector*

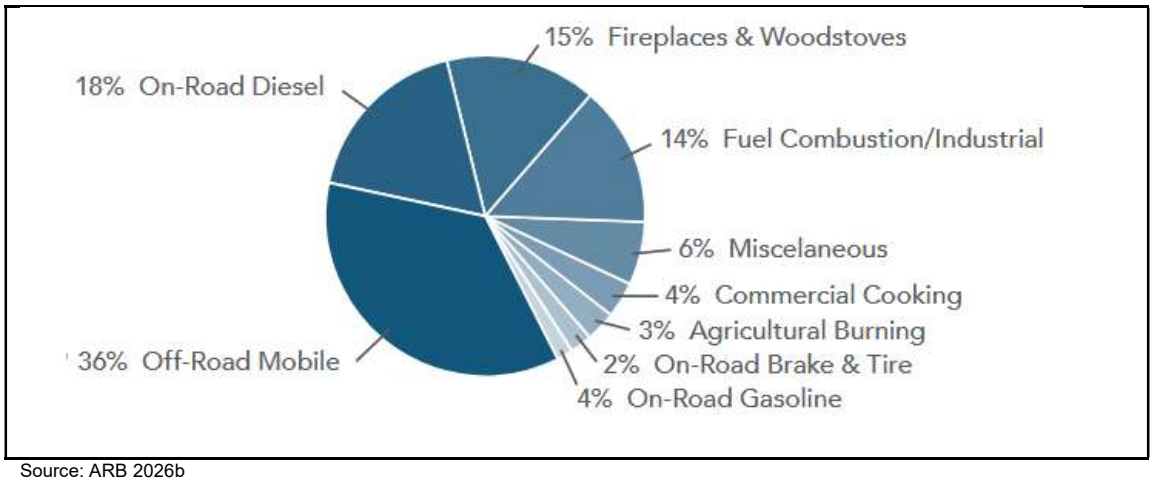
*Source: ARB 2026a*

## Short-Lived Climate Pollutants

Short-lived climate pollutants (SLCPs), such as black carbon, fluorinated gases, and $CH_4$ also have a dramatic effect on climate change. Though short-lived, these pollutants create a warming influence on the climate that is many times more potent than that of carbon dioxide.

As part of the ARB's efforts to address SLCPs, the ARB has developed a statewide emission inventory for black carbon. The black carbon inventory will help support the implementation of the SLCP Strategy, but it is not part of the State's GHG Inventory that tracks progress toward the State's climate targets. The most recent inventory for year 2013 conditions is depicted in Figure 2. As depicted, off-road mobile sources account for a majority of black carbon emissions totaling roughly 36 percent of the inventory. Other major anthropogenic sources of black carbon include on-road transportation, residential wood burning, fuel combustion, and industrial processes (ARB 2026b).

**Figure 2. California Black Carbon Emissions Inventory (Year 2013)**




Source: ARB 2026b

## Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea-level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of the precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50 percent of the state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. Earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from

hydropower. Early exhaustion of the Sierra snowpack may force electricity producers to switch to more costly or non-renewable forms of electricity generation during the spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.

## Regulatory Framework

### Federal

*2009 Greenhouse Gas Endangerment Finding*

The 2009 Greenhouse Gas Endangerment Finding, issued by the U.S. EPA on December 7, 2009, determined that six key greenhouse gases (carbon dioxide, methane, nitrous oxide, HFCs, PFCs, and SF6) threaten the public health and welfare of current and future generations. It established that emissions from new motor vehicles contribute to this pollution. This finding, rooted in the Massachusetts v. EPA (2007) ruling, required the EPA to regulate GHGs under the Clean Air Act. The 2009 Greenhouse Gas Endangerment Finding served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines. This finding provided authority for the U.S. EPA to prescribe standards for GHG emissions.

On February 12, 2026, the U.S. EPA finalized its rescission of the 2009 Greenhouse Gas Endangerment Finding, which served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines; as well as, all subsequent federal GHG emissions standards promulgated pursuant to the Endangerment Finding. Absent this finding, EPA lacks statutory authority under Section 202(a) of the Clean Air Act to prescribe standards for GHG emissions. This final action is only related to GHG emissions and does not affect vehicle regulations related to traditional criteria air pollutants (U.S. EPA 2026).

*Energy Policy and Conservation Act of 1975*

In accordance with the Energy Policy and Conservation Act of 1975 (as amended), the U.S. Department of Energy (DOE) establish minimum efficiency standards for a wide range of appliances and equipment used in residential and commercial buildings. Currently, DOE efficiency standards cover more than sixty categories of appliances and equipment. DOE's Appliance and Equipment Standards Program is part of a suite of programs under the Building Technologies Office that work in concert to help reduce building energy consumption (EESI 2026).

### State

*Assembly Bill (AB) 1279*

AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires ARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable $CO_2$ removal solutions and carbon capture, utilization, and storage technologies.

*Senate Bill (SB) 1020*

SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements.

*Executive Order (EO) N-79-20*

Governor Newsom signed EO N-79-20 in September 2020 to establish targets for the transportation sector to support the state in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are:

- 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035.
- 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks.
- 100 percent of off-road vehicles and equipment will be zero-emission by 2035 where feasible.

*EO B-55-18*

Governor Brown signed EO B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter.

*EO No. S-3-05*

EO S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The EO directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the EO, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through state incentives and regulatory programs.

*AB 32 - California Global Warming Solutions Act of 2006*

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, $NF_3$, and

$SF_6$. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

*Climate Change Scoping Plan*

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. This initial Scoping Plan contained the main strategies to be implemented in order to achieve the target emission levels identified in AB 32. The Scoping Plan included ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementing energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT $CO_2e$ will be achieved associated with the implementation of SB 375, which is discussed further below.

The initial Scoping Plan was first approved by ARB on December 11, 2008, and is updated every five years. The first update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. The 2017 Climate Change Scoping Plan was released in November 2017. The 2017 Climate Change Scoping Plan incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and EO B-30-15. Most notably, the 2017 Climate Change Scoping Pla*n* encourages zero net increases in GHG emissions. However, the 2017 Climate Change Scoping Plan recognizes that achieving net zero increases in GHG emissions may not be possible or appropriate for all projects and that the inability of a project to mitigate its GHG emissions to zero would not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.

On November 16, 2022, the ARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality. The 2022 Scoping Plan continues the path to achieve the SB 32 2030 target and expands upon earlier plans by targeting an 85 percent reduction in GHG below 1990 levels by 2045 (ARB 2022).

*SB 1078 and Governor's Order S-14-08*

SB 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed EO S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this EO in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The California Energy Commission and California Public Utilities Commission serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

*Mandatory Reporting of GHG Emissions*

The California Global Warming Solutions Act (AB 32, 2006) requires the reporting of GHGs by major sources to the ARB. Major sources required to report GHG emissions include industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and $CO_2$, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

*Cap-and-Trade Regulation*

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total GHG emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80 percent reduction from 1990 levels by 2050.

*SB 32*

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG-reductions in support of the State's ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs the ARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target.

*SB 97*

SB 97 was enacted in 2007. SB 97 required the Office of Planning and Research (OPR) to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

*SB 100*

SB 100 was signed by Governor Jerry Brown on September 10, 2018. SB 100 sets a goal of phasing out all fossil fuels from the state's electricity sector by 2045. SB 100 increases to 60 percent, from 50 percent, how much of California's electricity portfolio must come from renewables by 2030. It establishes a further goal to have an electric grid that is entirely powered by clean energy by 2045, which could include other carbon-free sources, like nuclear power, that are not renewable.

*SB 375*

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land-use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS

or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld. In 2018, ARB adopted updated SB 375 targets.

*SB 1383 & SB 1206*

SB 1383 requires California to reduce hydrofluorocarbon (HFC) emissions associated with the use of refrigerants to 40 percent below 2013 levels by 2030. Starting in 2022, new facilities will be required to use refrigerants that can reduce their emissions by up to 90 percent. The intent of the new rules is to eliminate the use of very high-GWP refrigerants in every sector that uses non-residential refrigeration systems. Compliance begins for most home air conditioning equipment in 2025. Senate Bill 1206, signed into law in September 2022, prohibits the sale or distribution of HFCs that exceed a specified GWP. Under this new law, refrigerants would not be allowed to exceed 2,200 GWP beginning January 1, 2025; 1,500 GWP beginning January 1, 2030; and 750 GWP beginning January 1, 2030.

*California Building Code*

The CBC contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

*California Green Building Standards*

In essence, green buildings standards are indistinguishable from any other building standards. Both standards are contained in the CBC and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

The 2019 Building Energy Efficiency Standards (2019 Standards), adopted in May 2018, addressed four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements. The 2019 Standards required new residential and non-residential construction; as well as major alterations to existing structures, to include EV-capable parking spaces which have electrical panel capacity and conduit to accommodate future installation. In addition, the 2019 Standards also required the installation of PV systems for low-rise residential dwellings, defined as single-family dwellings and multi-family dwellings up to three stories in height. These requirements are based on various factors, including the floor area of the home, sun exposure, and climate zone. Under the 2019 standards, nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades (CEC 2019).

The 2022 Building Energy Efficiency Standards (2022 Standards), which were approved in December 2021, encourage efficient electric heat pumps, establish electric-ready requirements when natural gas is installed, support the future installation of battery storage, further expand solar photovoltaic and battery storage standards. The 2022 Standards extend solar PV system requirements, as well as battery storage

capabilities for select land uses, including high-rise multi-family and non-residential land uses, such as office buildings, schools, restaurants, warehouses, theaters, grocery stores, and more. Depending on the land use and other factors, solar systems should be sized to meet targets of up to 60 percent of the structure's loads. These solar requirements became effective on January 1, 2023, and contribute to California's goal of reaching a net-zero carbon footprint by 2045 (CEC 2022).

The most current standards are the 2025 Standards, which became effective January 1, 2026. The 2025 Standards build upon the previous standards by expanding the use of heat pumps in newly constructed residential buildings, encouraging electric-readiness, strengthens ventilation standards, and more (CEC 2026).

*Short-Lived Climate Pollutant Reduction Strategy*

In March 2017, the ARB adopted the *Short-Lived Climate Pollutant Reduction Strategy* (*SLCP Strategy*) establishing a path to decrease GHG emissions and displace fossil-based natural gas use. Strategies include avoiding landfill methane emissions by reducing the disposal of organics through edible food recovery, composting, in-vessel digestion, and other processes; and recovering methane from wastewater treatment facilities, and manure methane at dairies, and using the methane as a renewable source of natural gas to fuel vehicles or generate electricity. The *SLCP Strategy* also identifies steps to reduce natural gas leaks from oil and gas wells, pipelines, valves, and pumps to improve safety, avoid energy losses, and reduce methane emissions associated with natural gas use. Lastly, the *SLCP Strategy* also identifies measures that can reduce HFC emissions at national and international levels, in addition to State-level action that includes an incentive program to encourage the use of low-GWP refrigerants and limitations on the use of high-GWP refrigerants in new refrigeration and air-conditioning equipment (ARB 2026b).

*Advanced Clean Cars II*

In August 2022, ARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% ZEVs and PHEVs. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive (ARB 2026c).

*Small Off-Road Engines*

In December 2021, ARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment (ARB 2026d).

### 2023 Regional Transportation Plan/Sustainable Communities Strategy

The 2023 RTP was adopted by the SLOCOG Board in June 2023. The RTP includes the region's SCS, which outlines how the region will exceed its GHG reduction targets as required by SB 375 through the promotion of a variety of transportation demand management & system management tools and techniques to maximize the efficiency of the transportation network. Consistency with the requirement of SB 375 ensures consistency with the GHG-reduction targets set by ARB. The 2023 SCS was found to be consistent with the requirement of SB 375 and is also consistent with the general plans of the region's jurisdictions (SLOCOG 2023).

### City of Atascadero Climate Action Plan

The City of Atascadero Climate Action Plan (CAP) is a long-range policy document intended to cost-effectively reduce greenhouse gas (GHG) emissions from City government operations and community activities within Atascadero. The City's CAP provided a baseline year 2005 inventory of GHG emissions and projected year 2020 emissions relative to the State's GHG emissions-reduction target for year 2020 of 15 percent below 2005 levels by the year 2020, as established under California Assembly Bill (AB) 32. According to the City's 2005 GHG emissions inventory, the City of Atascadero emitted approximately 141,428 metric tons of carbon dioxide equivalent GHG emissions ($MTCO_2e$). Major emissions sectors included transportation, residential energy use, commercial and industrial energy use, off-road vehicles and equipment, solid waste, and wastewater sectors. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals (City of Atascadero 2014).

## Impact Analysis

### Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The methodology for evaluating the 2045 GPU/ZCU's impacts related to GHG emissions focuses on consistency with statewide, regional, and local goals, targets, and plans that have been adopted for the purposes of reducing and mitigating GHG emissions. This approach has been deemed appropriate for analyzing GHG impacts by the Governor's Office of Planning and Research (OPR) and has been upheld in court challenges (Mission Bay Alliance v. Office of Community Investment & Infrastructure 2016). The evaluation of consistency with such plans serves as the sole basis for determining the significance of the project's GHG-related impacts to the environment. Estimated net increases of GHG emissions associated with implementation of the 2045 GPU/ZCU's has also been provided for informational purposes.

The State's current GHG-reduction goals for future years include reducing GHG emissions by 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, per SB 32 and EO B-30-15; as well as achieving carbon neutrality by 2045, consistent with EO B-55-18. Current plans supporting the

achievement of these goals and targets include ARB's 2022 Scoping Plan for Achieving Carbon Neutrality and SLOCOG's RTP/SCS. As previously noted, the City's CAP was developed with the primary purpose of demonstrating consistency with the State's GHG-reduction target for year 2020 conditions, consistent with AB 32. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, to include the 2030-2050 GHG-reduction targets and carbon-neutrality goals. For this reason, projected increases in development-related GHG emissions attributable to the proposed 2045 GPU/ZCU and/or associated increases in VMT that would conflict with ARB's 2022 Scoping Plan for Achieving Carbon Neutrality or SLOCOG's RTP/SCS would be considered to have a potentially significant impact.

## Methodology

Short-term GHG emissions associated with construction activities are largely dependent on the type of development proposed, off-road equipment and on-road vehicles required, and construction schedules. Because much of this information for specific future development projects is unknown at this time, construction-related impacts were qualitatively discussed.

Long-term operational increases in GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.37. Emissions were quantified based on the net increase in land uses attributable to the proposed 2045 GPU/ZCU and associated increases in VMT derived from the traffic analysis prepared for this project (CCTC 2025). ARB's Emission Factor 2021 (EMFAC2021) Off-Model Greenhouse Gas Adjustment Factors to Remove the Impact of Advanced Clean Trucks, Zero-Emission Airport Shuttle, Heavy-Duty Omnibus and Warranty Phase I Regulations were applied to mobile-source emissions (ARB 2025). To be conservative, EMFAC2021 off-model adjustment factors were based on the highest adjustment factors noted taking into account various vehicle classifications and fuel sources. Estimated GHG emissions attributable to the 2045 GPU/ZCU are provided for information purposes. Emissions modeling files are provided in Appendix A.

As noted above, evaluation of impact significance was based on consistency with applicable plans supporting the State's future GHG-reduction targets of 40 percent below 1990 levels by 2030, consistent with SB 32, and the State's goal of achieving carbon neutrality by 2045, consistent with EO B-55-18. Current plans supporting the achievement of these goals include ARB's 2022 Scoping Plan for Achieving Carbon Neutrality and SLOCOG's RTP/SCS.

## Relevant Proposed GPU Goals and Policies

The 2045 General Plan includes numerous goals and policies that would reduce air contaminant emissions. Some of the most relevant of these goals and policies include, but are not limited to, the following:

**Goal PSI-6:** Increased development and use of clean, renewable energy systems

> *Policy PSI-6.1: Onsite Renewable Energy*. Facilitate the installation of onsite renewable energy systems for residences and places of business.
>
> *Policy PSI-6.2: Energy Efficient Planning and Building Design*. Encourage energy-efficient site planning and building design/construction.
>
> - *Action A:* Implement streamlined building permit review processes for onsite energy systems.

- *Action B:* Continue to implement the California Green Building Standards.

**Goal REC-7:** Improve air quality and reduced health risks

*Policy REC-7.1: Clean Air.* Support regional efforts to maintain clean air.

- *Action A:* Require dust control and emissions limitations during project construction.
- *Action B:* Adopt circulation policies that encourage vehicle trip reductions consistent with the Mobility Element**,** and support regional programs to maintain clean air.
- *Action C:* Concentrate new intensive development at identified nodes and commercial corridors to help reduce vehicle trips.
- *Action D:* Continue to support the development of Park-and-Ride facilities in appropriate locations.

**Goal MO-1:** A safe, multimodal, interconnected, and efficient circulation system that serves all community members

*Policy MO-1.2: Multimodal Options.* Increase pedestrian and bicycle connections and safety between residential areas and commercial areas along major corridors, parks and recreation opportunities, and neighboring communities.

*Policy MO-1.3: Regional Facilities.* Provide regional roadway facilities that minimize through-traffic intrusion on local streets and mitigate impacts on local traffic.

*Policy MO-1.4: Congestion Management and Trip Reduction.* Encourage mixed-use and jobs focused infill development that is served by multi-modal facilities to support reductions in regional and local vehicle miles traveled (VMT).

*Policy MO-1.6: Truck Routes.* Ensure the new and existing business that use large trucks as a core part of their operations, more than just routine delivery, minimize maintenance impacts on City infrastructure and noise impacts on residents.

**Goal MO-4:** Safe, functional, and appealing bicycle, pedestrian, and equestrian (in rural areas) facilities that allow convenient multi-modal mobility

*Policy MO-4.1: Coordination and Planning.* Provide "backbone" pedestrian, bicycle, and equestrian systems that link residential, commercial, recreational, and regional areas.

*Policy MO-4.2: Pedestrian Mobility*. Ensure pedestrian safety, enhance pedestrian comfort, and promote walking as an alternative to vehicle travel, with priority in retail districts and multi-family neighborhoods.

*Policy MO-4.3: Bicycle Mobility.* Promote bicycle mobility and increase bicyclist safety with new/upgraded facilities and amenities.

*Policy MO-4.4: Rural Trails.* Provide for walkways, bikeways, and horse trails without curbs and sidewalks in rural areas.

*Policy MO-4.5: School and Park Connections.* Provide a comprehensive system of routes to schools and parks.

**Goal MO-5:** Reliable alternative travel modes that reduce traffic congestion and improve air quality.

*Policy MO-5.1: Single-Occupancy Vehicle Alternatives.* Promote alternatives to single-occupancy vehicle travel, particularly for commute trips.

*Policy MO-5.2: Public Transit.* Support the evolution of public transit to meet the changing needs for local and regional access, including fixed route and demand responsive service.

*Policy MO-5.3: County TDM Requirements.* Seek alternatives that bring Atascadero closer to compliance with Transportation Demand Management program requirements of the San Luis Obispo County Clean Air Plan to reduce peak period trip generation.

**Goal MO-6:** Anticipating and addressing emerging mobility technology proactively to allow new systems and industries to operate in Atascadero on the City's terms.

*Policy MO-6.1: Changing Mobile Technology.* Encourage the use of mobile or other electronic devices with similar on-demand hailing functions, particularly for seniors, persons with disabilities, and other mobility challenged people.

*Policy MO-6.2: Autonomous Vehicles.* Update, when warranted, transportation systems and policies as autonomous and automated vehicles and their attendant facilities are developed locally and regionally.

**Goal LU-2:** Enhanced major corridors that serve regional focused, distinct, and economically viable nodes

*Policy LU-2.3: Mid-block Infill.* Promote flexible land use patterns in areas between activity nodes along El Camino Real and support increased residential densities adjacent to and along commercial corridors to support commercial business activity and growth

*Policy LU-2.4: Mixed-Use Areas.* Create mixed-use districts in locations that benefit from the synergy of commercial and residential uses.

*Policy LU-2.5: Multi-Modal Corridors.* Improve pedestrian and bicycle facilities along El Camino Real and Morro Road. Major corridors should be safe, comfortable, and enjoyable for pedestrians, bicyclists, and drivers alike.

## Impacts and Mitigation Measures

| | |
|---|---|
| ***Impact GHG-1:*** | ***Would the General Plan generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and*** |
| ***Impact GHG-2:*** | ***Would the General Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*** |

Annual operational emissions associated with the 2045 GPU/ZCU buildout conditions are summarized in Table 12. As noted in Table 12, estimated increases in GHG emissions attributable to the 2045 GPU/ZCU would total approximately 145,588 $MTCO_2e$/year, with the inclusion of natural gas use. On a service population basis, net increases in GHG emissions would be approximately 14.9 $MTCO_2e$/SP. Estimated increases in GHG emissions were predominantly associated with increases in motor vehicle use. To a lesser extent, energy consumption, waste generation, water use, and area sources also contribute to overall increases in projected future community-wide GHG emissions. It is important to note that estimated year 2045 GHG emissions are conservative and do not fully account for future GHG reductions associated with existing and future building standards and/or regulations related to motor vehicle emission standards. In addition, the recent rescission of the 2009 Greenhouse Gas Endangerment Finding by the U.S. EPA, which was issued on February 12, 2026, has resulted in significant increases in projected future-year mobile-source GHG emissions. As noted earlier in this report, the 2009 Greenhouse Gas Endangerment Finding

served as a prerequisite for regulating emissions from new motor vehicles and new motor vehicle engines; as well as, all subsequent federal GHG emissions standards promulgated pursuant to the Endangerment Finding. In response to the rescission 2009 Greenhouse Gas Endangerment Finding by the U.S. EPA, the ARB has released EMFAC adjustment factors that are to be applied to on-road mobiles sources, which taking into account various vehicle classifications and fuel sources (ARB 2025). To be conservative, EMFAC adjustment factors were based on the highest values noted for the various vehicle classifications and fuel sources. As a result, actual future year GHG emissions may be lower than estimated depending on future changes related to GHG-emission reduction efforts and associated state and federal regulatory requirements.

**Table 12. Annual Operational GHG Emissions at Buildout**

| Source | Annual Emissions ($MTCO_2e$/Year)[1] |
|---|---|
| Mobile[3] | 133,857.1 |
| Energy Use[2,4] | 8,746.6 |
| Area[4] | 1,213.8 |
| Water[4,5] | 582.3 |
| Waste[4] | 1,163.7 |
| Refrigerants[4] | 24.4 |
| Total: | 145,588 |
| Service Population (Residents + Employees): | 9,781 |
| $MTCO_2e$/SP: | 14.9 |

1. *Emissions were quantified using the CalEEMod computer program based on projected future development associated with implementation of the General Plan Update.*
2. *Includes natural gas use. Excludes wood burning hearths per SLOAPCD Rule 4901.*
3. *Emissions quantified based on trip-generation rates derived from the traffic analysis prepared for this project (CCTC 2025). Includes EMFAC2021 off-model adjustment factors (ARB 2025).*
4. *Emissions associated with area sources, water use, energy use, refrigerants, and waste generation were quantified based on projected increases in future development, by land use type, and default usage/generation rates identified in the CalEEMod computer program for San Luis Obispo County.*
5. *Includes the use of low-flow water fixtures per current building standards.*

*Totals may not sum due to rounding. Refer to Appendix A for emissions modeling assumptions and results.*

**Consistency with ARB's 2022 Scoping Plan for Achieving Carbon Neutrality**

The 2022 Climate Change Scoping Plan is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward meeting the State's year 2030 GHG-reduction goals. The 2030 target is an important but interim step toward achieving the State's future-year GHG-reduction and carbon-neutrality goals.

To achieve the State's future-year GHG-reduction goals, including carbon neutrality by 2045, the State will need to reduce emissions from carbon-based sources commonly associated with community development. The Scoping Plan identifies numerous action items in support of the State's future-year GHG-reduction goals. Such action items include, to the extent possible, the installation of all-electric appliances for new residential and commercial development, replacement of residential and commercial-use natural-gas appliances with electric appliances at end of life, prevention of conversion of natural land, provision of lower income affordable housing, and incorporation of smart-growth measures that would support reductions in VMT and associated mobile-source emissions.

The 2045 GPU/ZCU uses a designator system consisting of "Placetypes." Each Placetype category defines both the primary uses of land allowed and the character of those uses. For instance, the Mixed Use Placetype is intended to promote a flexible and compatible mix of residential and commercial uses in focused areas. The Downtown Mixed Use Placetype encourages an eclectic and complementary mix of uses, pedestrian-scale development, and locally owned retail and restaurant businesses with upper-story residential and office units. The 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths, improved accessibility to alternative means of transportation (e.g., transit), and overall reductions in VMT. In addition, the City's jobs-housing ratio would improve from 0.77 to 0.83. Numerous other goals and policies have been included in the 2045 GPU/ZCU that would support regional transportation planning efforts, including policies to improve accessibility to transit, bicycle and public transit improvements, park and ride lots, traffic flow improvements, and various other policies intended to reduce vehicle use and VMT. In addition, the 2045 GPU/ZCU includes policies that would encourage energy-efficient site planning and building design/construction and incorporation of onsite renewable energy systems.

However, even with implementation of the 2045 GPU/ZCU goals and policies, the 2045 GPU/ZCU would generate residential and employment-based VMT at levels that are above OPR's recommended thresholds. In addition, the 2045 GPU/ZCU does not include policies for encouraging all-electric development of future residential and commercial land uses. As a result, the 2045 GPU/ZCU would be inconsistent with the 2022 Scoping Plan for Achieving Carbon Neutrality.

**Consistency with SLOCOG's RTP/SCS**

The RTP includes the region's SCS, which outlines how the region will exceed its GHG reduction targets as required by SB 375 through the promotion of a variety of transportation demand management & system management tools and techniques to maximize the efficiency of the transportation network. Consistency with the requirement of SB 375 ensures consistency with the GHG-reduction targets set by ARB. The 2023 SCS was found to be consistent with the requirement of SB 375 and is also consistent with the existing general plans of the region's jurisdictions (SLOCOG 2023).

As noted above, the proposed 2045 GPU/ZCU is expected to result in reductions in vehicle trips/ trip lengths and improved accessibility to alternative means of transportation (e.g., transit). In addition, the 2045 GPU/ZCU would not be anticipated to result in a wasteful, inefficient, or unnecessary consumption of energy associated with future development. Although implementation of the 2045 General Plan and Zoning Code Update would result in increased development, population, and jobs, in excess of what is currently projected by SLOCOG, the jobs/housing ratio for the City would be projected to improve with implementation of the project. Therefore, the goals, policies, and actions included in the 2045 General Plan Update are generally consistent with the goals and policies established within SLOCOG's RTP/SCS.

## Consistency with City of Atascadero Climate Action Plan

The City of Atascadero Climate Action Plan (CAP) is a long-range policy document intended to cost-effectively reduce GHG emissions from City government operations and community activities within Atascadero. Appendix C of the City's CAP contains a CAP Consistency Worksheet. The CAP worksheet includes various mandatory and voluntary GHG-reduction measures that projects can implement to demonstrate consistency with the City's CAP. These project-level mandatory measures include the following (City of Atascadero 2014):

- *Measure TL-1: Bicycle Network*.
    - Incorporation of bicycle lanes, routes, and/or shared use paths into street system, as currently required by the General Plan and Municipal Code, to provide a continuous network or routes, facilitated with markings, signage, and bicycle parking.
- *Measure TL-2: Pedestrian Network*.
    - Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site, as currently required by the General Plan and Municipal Code.
    - Minimize barriers to pedestrian access and interconnectivity, as currently required by the General Plan and Municipal Code.
    - Implement traffic calming improvements as appropriate (e.g., marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, median islands, mini-circles, tight corner radii, etc.), as currently required by the General Plan and Municipal Code.
- *Measure TL-3: Expand Transit Network*.
    - Provide safe and convenient access to public transit within and/or contiguous to the project area, as currently required by the General Plan and Municipal Code
- *Measure TL-8: Atascadero General Plan.*
    - Consistent with the City's land use and zoning code.
- *Measure S-1: Solid Waste Diversion Rate.*
    - If the project involves demolition, divert 70 percent of non-hazardous debris

The mandatory measures identified above must be incorporated as binding and enforceable components of a project for it to be found consistent with the CAP. If the project cannot meet one or more of the mandatory measures, voluntary or other City-approved measures may be substituted provided the measures would achieve equivalent GHG reductions. Additional voluntary measures include those related to reducing GHG emissions from the energy, transportation, and land use sectors.

The 2045 General Plan includes numerous goals and policies that would reduce GHG emissions, specifically those associated with the energy, transportation, and land use sectors, consistent with the CAP worksheet. As noted earlier in this report, these goals and policies include the promotion of emerging mobility technologies; promotion of alternative means of transportation; providing safe, functional, and appealing multi-modal mobility alternatives; promoting clean, renewable energy systems; and various measures to reduce regional and local VMT.

It is important to note that the City's CAP was developed to address the State's year 2020 GHG emissions-reduction target, as established under California Assembly Bill (AB) 32. The City's CAP has not been updated to address the State's more recent GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals. The goals and policies contained in the 2045 GPU/ZCU would facilitate future project consistency with the City's current CAP, as well as, GHG reductions in support of the State's current GHG-reduction targets for future years, including the 2030-2035 GHG-reduction targets and carbon-neutrality goals. As a result, the 2045 GPU/ZCU would be considered consistent with the City's CAP.

Because the 2045 GPU/ZCU would conflict with CARB's 2022 Scoping Plan, this impact would be considered **potentially significant**.

**Proposed GPU Policies that Provide Mitigation**

The 2045 GPU/ZCU includes numerous goals and policies that would help to reduce criteria pollutant emissions, energy demands, and VMT. Some of the more relevant 2045 GPU/ZCU policies include Policy REC-7.1,a, PSI-6.1, PSI-6.2, MO-1.2 – MO-1.6, MO-4.1 – MO-4.5, MO-5.1 – MO-5.3, MO-6.1, MO-6.2, and LU-2.3 – LU-2.5.

**Proposed Mitigation Measures**

GHG-1: Update the City of Atascadero Climate Action Plan to identify ways to reduce GHG emissions and limit climate change impacts on the residents to the extent possible. The Climate Action Plan shall integrate the State's future GHG-reduction goals, such as the State's goal of attaining carbon neutrality by 2045.

GHG-2: Until the City adopts a qualified Climate Action Plan consistent with Mitigation Measure GHG-1 the City shall incorporate development standards into the Municipal Code for new development projects located along existing or planned public transit routes that require features that promote the use of public transit. Examples include the installation of sidewalks or pathways that facilitate ease of access from onsite locations to nearby transit stops, installation of transit improvements (e.g., benches, bus turn outs) for future planned transit stops located adjacent to the development site.

GHG-3: The City shall participate in SLOCOG's Sustainable Communities Strategy/Regional Blueprint Planning effort to ensure that local development plans and associated population and employment growth are consistent with the Regional Transportation Plan/Sustainable Communities Strategy.

**Significance After Mitigation**

Implementation of Mitigation Measure GHG-1 would require the update of the City's Climate Action Plan to identify ways to achieve GHG-reductions in support of the State's future GHG-reduction efforts. Mitigation Measure GHG-2 would require implementation of additional measures for land use development projects in support of the State's future year 2045 carbon-neutrality goal. Mitigation Measure GHG-3 would require that the City participate in SLOCOG's Sustainable Communities Strategy/Regional Blueprint Planning effort to ensure that local development plans and associated population and employment growth are consistent with the Regional Transportation Plan/Sustainable Communities Strategy. However, while policies contained in the GPU, proposed Mitigation Measures, and implementation of future regulatory requirements would reduce the GHG emissions at buildout, the extent of GHG reductions attributable to these measures cannot be accurately quantified at this time and projected future year GHG emissions could potentially exceed applicable thresholds given uncertainties in the timing and effectiveness of these measures. In addition, projected increases in VMT attributable to the 2045 GPU/ZCU would still exceed applicable OPR thresholds. Therefore, this impact would be considered **significant and unavoidable**.

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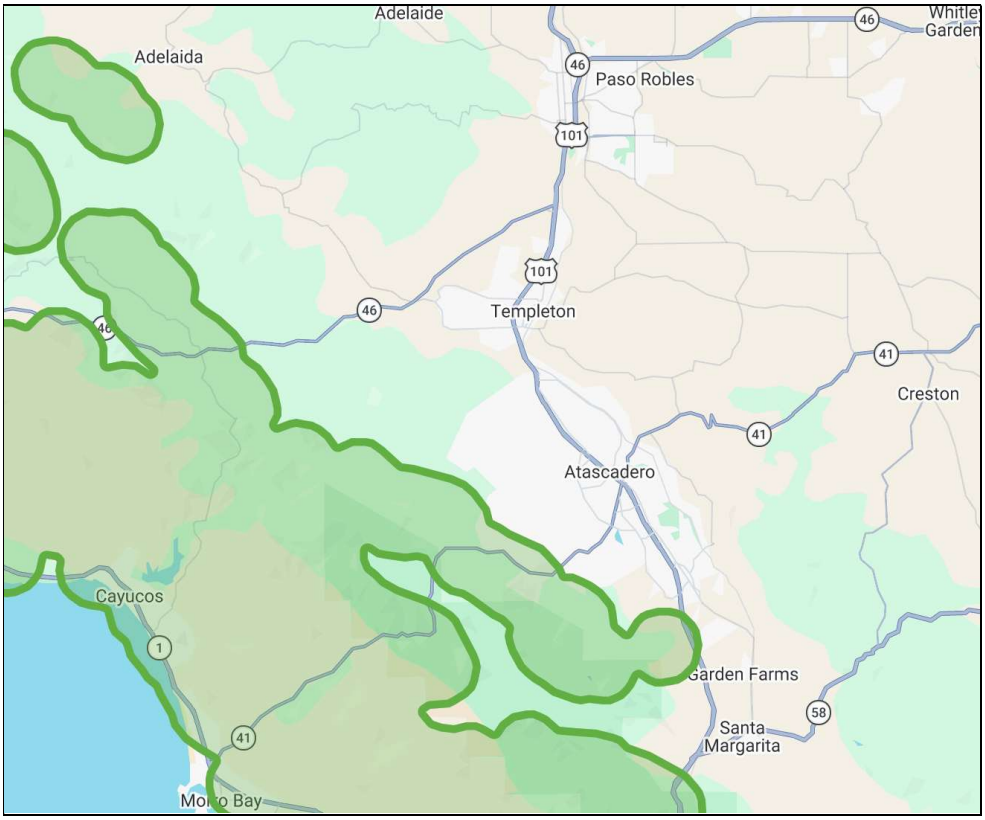
# APPENDIX A

**Emissions Modeling & Supportive Documentation**

**SLOAPCD NOA BUFFER AREAS**

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**2. Emissions Summary**

**2.5 Operations Emissions by Sector, Unmitigated**

| Sector | $CO_2T$ | $CH_4$ | $N_2O$ | R | $CO_2e$ | |
|---|---|---|---|---|---|---|
| **Annual** | | | | | | |
| Mobile - Unadjusted | 57702.371479 | 1.0236253744 | 1.7226151381 | 10.20 | **58251.50** | |
| EmFac21 Adj Factors | 2.29 | 2.43 | 2.70 | 0.00 | | |
| Mobile -Adjusted | 132408.92 | 2.49 | 4.65 | 10.20 | **133857.01** | |
| Area | 1212.2292549 | 0.0252900985 | 0.0029807031 | 0.00 | **1213.75** | |
| Energy | 8699.1911577 | 1.0097190828 | 0.0744000290 | 0.00 | **8746.61** | |
| Water | 289.78605893 | 10.989116735 | 0.2639815364 | 0.00 | **643.18** | |
| Waste | 332.60546283 | 33.242721083 | 0 | 0.00 | **1163.67** | |
| Refrig. | 0.00 | 0.00 | 0.00 | 24.42 | **24.42** | |
| Total | 142942.74 | 47.76 | 4.99 | 34.62 | **145624.22** | |
| | | | | | | CO2e INCREASE WITH EMFAC ADJUSTMENT |
| **Total Mobile-Adjusted:** | **328008.94** | **116.23** | **13.48** | **34.62** | **334965.13** | 276713.63 |

**Total with Nat Gas**

| | | | | | | |
|---|---|---|---|---|---|---|
| Mobile (Adjusted): | 132408.92 | 2.49 | 4.65 | 10.20 | 133857.01 | |
| Energy (Electricity & Nat Gas): | 8699.1911577 | 1.0097190828 | 0.0744000290 | 0.00 | 8746.61 | |
| Area | 1212.2292549 | 0.0252900985 | 0.0029807031 | 0.00 | 1213.75 | |
| Water (With Low Flow Fixtures): | 263.10416991 | 9.9251980126 | 0.2384456819 | 0 | 582.2909334466693 | GHG/SP WITHOUT EMFAC ADJUSTMENT |
| Waste: | 332.60546283 | 33.242721083 | 0 | 0.00 | 1163.67 | |
| Refrigerants: | 0 | 0 | 0 | 24.42 | 24.42 | |
| Total: | **142916.05** | **46.69** | **4.97** | **34.62** | **145587.75** | -131125.88 |
| **Based on MIG SP data** | | | **Net Increase Service Population (SP):** | | **9781** | |
| | | | | **GHG/SP:** | **14.88475077** | |

| **Service Population** | **Existing** | **GPU 2045** | **Net Increase** |
|---|---|---|---|
| Residents | 30683 | 37279 | 6596 |
| Employees | 9729 | 12914 | 3185 |
| Total Net Increase | | | 9781 |

# AGPU Operational Yr 2045 - Net Increase Detailed Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | AGPU Operational Yr 2045 - Net Increase |
| Operational Year | 2045 |
| Lead Agency | — |
| Land Use Scale | Plan/community |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 3.00000 |
| Precipitation (days) | 29.6000 |
| Location | 35.489982894823555, -120.66750601348814 |
| County | San Luis Obispo |
| City | Atascadero |
| Air District | San Luis Obispo County APCD |
| Air Basin | South Central Coast |
| TAZ | 3311 |
| EDFZ | 6 |
| Electric Utility | Pacific Gas & Electric Company |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.37 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 205.000 | Dwelling Unit | 66.5584 | 399,750 | 2,401,136 | — | 492.000 | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 2,688.00 | Dwelling Unit | 70.7368 | 2,580,480 | 0.00000 | — | 6,451.00 | — |
| Strip Mall | 481.454 | 1000sqft | 11.0527 | 481,454 | 0.00000 | — | — | — |
| General Office Building | 594.666 | 1000sqft | 13.6517 | 594,666 | 0.00000 | — | — | — |
| Industrial Park | 467.501 | 1000sqft | 10.7323 | 467,501 | 0.00000 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Water | W-4 | Require Low-Flow Water Fixtures |

# 2. Emissions Summary

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 160.381 | 126.460 | 1,228.14 | 3.91304 | 6.24729 | 409.534 | 415.781 | 6.11780 | 103.670 | 109.787 | 456,681 | 280.361 | 12.1016 | 290.118 | 467,587 |
| Mit. | 160.381 | 126.460 | 1,228.14 | 3.91304 | 6.24729 | 409.534 | 415.781 | 6.11780 | 103.670 | 109.787 | 456,520 | 273.935 | 11.9474 | 290.118 | 467,219 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | < 0.5% | 2% | 1% | — | < 0.5% |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 134.645 | 130.327 | 891.929 | 3.77711 | 6.05468 | 409.534 | 415.588 | 5.97210 | 103.670 | 109.642 | 443,342 | 280.155 | 12.5662 | 151.181 | 454,242 |
| Mit. | 134.645 | 130.327 | 891.929 | 3.77711 | 6.05468 | 409.534 | 415.588 | 5.97210 | 103.670 | 109.642 | 443,181 | 273.729 | 12.4120 | 151.181 | 453,874 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | < 0.5% | 2% | 1% | — | < 0.5% |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 156.073 | 105.160 | 1,106.99 | 3.63725 | 4.06734 | 401.707 | 405.774 | 3.94235 | 101.713 | 105.655 | 412,150 | 279.597 | 12.4665 | 209.071 | 423,064 |
| Mit. | 156.073 | 105.160 | 1,106.99 | 3.63725 | 4.06734 | 401.707 | 405.774 | 3.94235 | 101.713 | 105.655 | 411,989 | 273.171 | 12.3123 | 209.071 | 422,697 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | < 0.5% | 2% | 1% | — | < 0.5% |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 28.4832 | 19.1918 | 202.026 | 0.66380 | 0.74229 | 73.3115 | 74.0538 | 0.71948 | 18.5626 | 19.2821 | 68,236.2 | 46.2905 | 2.06398 | 34.6141 | 70,043.1 |
| Mit. | 28.4832 | 19.1918 | 202.026 | 0.66380 | 0.74229 | 73.3115 | 74.0538 | 0.71948 | 18.5626 | 19.2821 | 68,209.5 | 45.2266 | 2.03844 | 34.6141 | 69,982.2 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | < 0.5% | 2% | 1% | — | < 0.5% |

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.8974 | 66.1337 | 968.272 | 3.53289 | 1.38041 | 409.534 | 410.914 | 1.29783 | 103.670 | 104.967 | 359,054 | 6.30530 | 9.97529 | 142.636 | 362,327 |
| Area | 123.973 | 34.0733 | 245.709 | 0.21534 | 2.77929 | — | 2.77929 | 2.73238 | — | 2.73238 | 41,324.7 | 0.79459 | 0.08248 | — | 41,369.1 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,750.32 | 66.3749 | 1.59446 | — | 3,884.85 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 160.381 | 126.460 | 1,228.14 | 3.91304 | 6.24729 | 409.534 | 415.781 | 6.11780 | 103.670 | 109.787 | 456,681 | 280.361 | 12.1016 | 290.118 | 467,587 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.4515 | 72.0811 | 864.152 | 3.40809 | 1.38041 | 409.534 | 410.914 | 1.29783 | 103.670 | 104.967 | 346,429 | 6.12886 | 10.4459 | 3.69892 | 349,699 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Area | 98.6824 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,750.32 | 66.3749 | 1.59446 | — | 3,884.85 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 134.645 | 130.327 | 891.929 | 3.77711 | 6.05468 | 409.534 | 415.588 | 5.97210 | 103.670 | 109.642 | 443,342 | 280.155 | 12.5662 | 151.181 | 454,242 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.5781 | 71.7675 | 880.751 | 3.42881 | 1.38041 | 401.707 | 403.087 | 1.29783 | 101.713 | 103.011 | 348,525 | 6.18275 | 10.4047 | 61.5895 | 351,842 |
| Area | 119.984 | 7.13979 | 212.077 | 0.04363 | 0.59935 | — | 0.59935 | 0.55694 | — | 0.55694 | 7,321.93 | 0.15275 | 0.01800 | — | 7,331.12 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,750.32 | 66.3749 | 1.59446 | — | 3,884.85 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 156.073 | 105.160 | 1,106.99 | 3.63725 | 4.06734 | 401.707 | 405.774 | 3.94235 | 101.713 | 105.655 | 412,150 | 279.597 | 12.4665 | 209.071 | 423,064 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 6.31050 | 13.0976 | 160.737 | 0.62576 | 0.25192 | 73.3115 | 73.5634 | 0.23685 | 18.5626 | 18.7995 | 57,702.4 | 1.02363 | 1.72262 | 10.1968 | 58,251.5 |
| Area | 21.8970 | 1.30301 | 38.7041 | 0.00796 | 0.10938 | — | 0.10938 | 0.10164 | — | 0.10164 | 1,212.23 | 0.02529 | 0.00298 | — | 1,213.75 |
| Energy | 0.27571 | 4.79120 | 2.58468 | 0.03008 | 0.38098 | — | 0.38098 | 0.38098 | — | 0.38098 | 8,699.19 | 1.00972 | 0.07440 | — | 8,746.61 |
| Water | — | — | — | — | — | — | — | — | — | — | 289.786 | 10.9891 | 0.26398 | — | 643.180 |
| Waste | — | — | — | — | — | — | — | — | — | — | 332.605 | 33.2427 | 0.00000 | — | 1,163.67 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 24.4173 | 24.4173 |
| Total | 28.4832 | 19.1918 | 202.026 | 0.66380 | 0.74229 | 73.3115 | 74.0538 | 0.71948 | 18.5626 | 19.2821 | 68,236.2 | 46.2905 | 2.06398 | 34.6141 | 70,043.1 |

## 2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.8974 | 66.1337 | 968.272 | 3.53289 | 1.38041 | 409.534 | 410.914 | 1.29783 | 103.670 | 104.967 | 359,054 | 6.30530 | 9.97529 | 142.636 | 362,327 |
| Area | 123.973 | 34.0733 | 245.709 | 0.21534 | 2.77929 | — | 2.77929 | 2.73238 | — | 2.73238 | 41,324.7 | 0.79459 | 0.08248 | — | 41,369.1 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,589.16 | 59.9487 | 1.44022 | — | 3,517.07 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 160.381 | 126.460 | 1,228.14 | 3.91304 | 6.24729 | 409.534 | 415.781 | 6.11780 | 103.670 | 109.787 | 456,520 | 273.935 | 11.9474 | 290.118 | 467,219 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.4515 | 72.0811 | 864.152 | 3.40809 | 1.38041 | 409.534 | 410.914 | 1.29783 | 103.670 | 104.967 | 346,429 | 6.12886 | 10.4459 | 3.69892 | 349,699 |
| Area | 98.6824 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,589.16 | 59.9487 | 1.44022 | — | 3,517.07 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 134.645 | 130.327 | 891.929 | 3.77711 | 6.05468 | 409.534 | 415.588 | 5.97210 | 103.670 | 109.642 | 443,181 | 273.729 | 12.4120 | 151.181 | 453,874 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 34.5781 | 71.7675 | 880.751 | 3.42881 | 1.38041 | 401.707 | 403.087 | 1.29783 | 101.713 | 103.011 | 348,525 | 6.18275 | 10.4047 | 61.5895 | 351,842 |
| Area | 119.984 | 7.13979 | 212.077 | 0.04363 | 0.59935 | — | 0.59935 | 0.55694 | — | 0.55694 | 7,321.93 | 0.15275 | 0.01800 | — | 7,331.12 |
| Energy | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 52,543.6 | 6.09876 | 0.44938 | — | 52,830.0 |
| Water | — | — | — | — | — | — | — | — | — | — | 1,589.16 | 59.9487 | 1.44022 | — | 3,517.07 |
| Waste | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Total | 156.073 | 105.160 | 1,106.99 | 3.63725 | 4.06734 | 401.707 | 405.774 | 3.94235 | 101.713 | 105.655 | 411,989 | 273.171 | 12.3123 | 209.071 | 422,697 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mobile | 6.31050 | 13.0976 | 160.737 | 0.62576 | 0.25192 | 73.3115 | 73.5634 | 0.23685 | 18.5626 | 18.7995 | 57,702.4 | 1.02363 | 1.72262 | 10.1968 | 58,251.5 |
| Area | 21.8970 | 1.30301 | 38.7041 | 0.00796 | 0.10938 | — | 0.10938 | 0.10164 | — | 0.10164 | 1,212.23 | 0.02529 | 0.00298 | — | 1,213.75 |
| Energy | 0.27571 | 4.79120 | 2.58468 | 0.03008 | 0.38098 | — | 0.38098 | 0.38098 | — | 0.38098 | 8,699.19 | 1.00972 | 0.07440 | — | 8,746.61 |
| Water | — | — | — | — | — | — | — | — | — | — | 263.104 | 9.92520 | 0.23845 | — | 582.291 |
| Waste | — | — | — | — | — | — | — | — | — | — | 332.605 | 33.2427 | 0.00000 | — | 1,163.67 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | 24.4173 | 24.4173 |
| Total | 28.4832 | 19.1918 | 202.026 | 0.66380 | 0.74229 | 73.3115 | 74.0538 | 0.71948 | 18.5626 | 19.2821 | 68,209.5 | 45.2266 | 2.03844 | 34.6141 | 69,982.2 |

# 4. Operations Emissions Details

## 4.1. Mobile Emissions by Land Use

### 4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

### 4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 694.653 | 0.11238 | 0.01362 | — | 701.522 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 4,458.40 | 0.72127 | 0.08743 | — | 4,502.49 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 2,227.10 | 0.36030 | 0.04367 | — | 2,249.12 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 6,936.26 | 1.12214 | 0.13602 | — | 7,004.84 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 5,452.99 | 0.88217 | 0.10693 | — | 5,506.91 |
| Total | — | — | — | — | — | — | — | — | — | — | 19,769.4 | 3.19826 | 0.38767 | — | 19,964.9 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 694.653 | 0.11238 | 0.01362 | — | 701.522 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 4,458.40 | 0.72127 | 0.08743 | — | 4,502.49 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 2,227.10 | 0.36030 | 0.04367 | — | 2,249.12 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 6,936.26 | 1.12214 | 0.13602 | — | 7,004.84 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 5,452.99 | 0.88217 | 0.10693 | — | 5,506.91 |
| Total | — | — | — | — | — | — | — | — | — | — | 19,769.4 | 3.19826 | 0.38767 | — | 19,964.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 115.008 | 0.01861 | 0.00226 | — | 116.145 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 738.139 | 0.11941 | 0.01447 | — | 745.438 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 368.721 | 0.05965 | 0.00723 | — | 372.367 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 1,148.38 | 0.18578 | 0.02252 | — | 1,159.73 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 902.805 | 0.14605 | 0.01770 | — | 911.732 |
| Total | — | — | — | — | — | — | — | — | — | — | 3,273.05 | 0.52951 | 0.06418 | — | 3,305.41 |

### 4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 694.653 | 0.11238 | 0.01362 | — | 701.522 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 4,458.40 | 0.72127 | 0.08743 | — | 4,502.49 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 2,227.10 | 0.36030 | 0.04367 | — | 2,249.12 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 6,936.26 | 1.12214 | 0.13602 | — | 7,004.84 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 5,452.99 | 0.88217 | 0.10693 | — | 5,506.91 |
| Total | — | — | — | — | — | — | — | — | — | — | 19,769.4 | 3.19826 | 0.38767 | — | 19,964.9 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 694.653 | 0.11238 | 0.01362 | — | 701.522 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 4,458.40 | 0.72127 | 0.08743 | — | 4,502.49 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 2,227.10 | 0.36030 | 0.04367 | — | 2,249.12 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | — | — | — | — | — | — | — | — | — | — | 6,936.26 | 1.12214 | 0.13602 | — | 7,004.84 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 5,452.99 | 0.88217 | 0.10693 | — | 5,506.91 |
| Total | — | — | — | — | — | — | — | — | — | — | 19,769.4 | 3.19826 | 0.38767 | — | 19,964.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 115.008 | 0.01861 | 0.00226 | — | 116.145 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 738.139 | 0.11941 | 0.01447 | — | 745.438 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 368.721 | 0.05965 | 0.00723 | — | 372.367 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 1,148.38 | 0.18578 | 0.02252 | — | 1,159.73 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 902.805 | 0.14605 | 0.01770 | — | 911.732 |
| Total | — | — | — | — | — | — | — | — | — | — | 3,273.05 | 0.52951 | 0.06418 | — | 3,305.41 |

### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.12084 | 2.06520 | 0.87881 | 0.01318 | 0.16697 | — | 0.16697 | 0.16697 | — | 0.16697 | 2,621.42 | 0.23199 | 0.00494 | — | 2,628.69 |
| Apartments Mid Rise | 0.99300 | 16.9712 | 7.22180 | 0.10833 | 1.37214 | — | 1.37214 | 1.37214 | — | 1.37214 | 21,542.0 | 1.90646 | 0.04056 | — | 21,601.8 |
| Strip Mall | 0.04248 | 0.77241 | 0.64882 | 0.00463 | 0.05870 | — | 0.05870 | 0.05870 | — | 0.05870 | 921.608 | 0.08156 | 0.00174 | — | 924.165 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 0.19844 | 3.60792 | 3.03065 | 0.02165 | 0.27420 | — | 0.27420 | 0.27420 | — | 0.27420 | 4,304.85 | 0.38098 | 0.00811 | — | 4,316.79 |
| Industrial Park | 0.15600 | 2.83639 | 2.38257 | 0.01702 | 0.21557 | — | 0.21557 | 0.21557 | — | 0.21557 | 3,384.29 | 0.29951 | 0.00637 | — | 3,393.68 |
| Total | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 32,774.2 | 2.90050 | 0.06171 | — | 32,865.1 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.12084 | 2.06520 | 0.87881 | 0.01318 | 0.16697 | — | 0.16697 | 0.16697 | — | 0.16697 | 2,621.42 | 0.23199 | 0.00494 | — | 2,628.69 |
| Apartments Mid Rise | 0.99300 | 16.9712 | 7.22180 | 0.10833 | 1.37214 | — | 1.37214 | 1.37214 | — | 1.37214 | 21,542.0 | 1.90646 | 0.04056 | — | 21,601.8 |
| Strip Mall | 0.04248 | 0.77241 | 0.64882 | 0.00463 | 0.05870 | — | 0.05870 | 0.05870 | — | 0.05870 | 921.608 | 0.08156 | 0.00174 | — | 924.165 |
| General Office Building | 0.19844 | 3.60792 | 3.03065 | 0.02165 | 0.27420 | — | 0.27420 | 0.27420 | — | 0.27420 | 4,304.85 | 0.38098 | 0.00811 | — | 4,316.79 |
| Industrial Park | 0.15600 | 2.83639 | 2.38257 | 0.01702 | 0.21557 | — | 0.21557 | 0.21557 | — | 0.21557 | 3,384.29 | 0.29951 | 0.00637 | — | 3,393.68 |
| Total | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 32,774.2 | 2.90050 | 0.06171 | — | 32,865.1 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.02205 | 0.37690 | 0.16038 | 0.00241 | 0.03047 | — | 0.03047 | 0.03047 | — | 0.03047 | 434.006 | 0.03841 | 0.00082 | — | 435.209 |
| Apartments Mid Rise | 0.18122 | 3.09725 | 1.31798 | 0.01977 | 0.25042 | — | 0.25042 | 0.25042 | — | 0.25042 | 3,566.53 | 0.31564 | 0.00672 | — | 3,576.42 |
| Strip Mall | 0.00775 | 0.14096 | 0.11841 | 0.00085 | 0.01071 | — | 0.01071 | 0.01071 | — | 0.01071 | 152.583 | 0.01350 | 0.00029 | — | 153.006 |
| General Office Building | 0.03621 | 0.65845 | 0.55309 | 0.00395 | 0.05004 | — | 0.05004 | 0.05004 | — | 0.05004 | 712.717 | 0.06308 | 0.00134 | — | 714.694 |
| Industrial Park | 0.02847 | 0.51764 | 0.43482 | 0.00311 | 0.03934 | — | 0.03934 | 0.03934 | — | 0.03934 | 560.308 | 0.04959 | 0.00106 | — | 561.862 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | 0.27571 | 4.79120 | 2.58468 | 0.03008 | 0.38098 | — | 0.38098 | 0.38098 | — | 0.38098 | 5,426.14 | 0.48021 | 0.01022 | — | 5,441.19 |

### 4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.12084 | 2.06520 | 0.87881 | 0.01318 | 0.16697 | — | 0.16697 | 0.16697 | — | 0.16697 | 2,621.42 | 0.23199 | 0.00494 | — | 2,628.69 |
| Apartments Mid Rise | 0.99300 | 16.9712 | 7.22180 | 0.10833 | 1.37214 | — | 1.37214 | 1.37214 | — | 1.37214 | 21,542.0 | 1.90646 | 0.04056 | — | 21,601.8 |
| Strip Mall | 0.04248 | 0.77241 | 0.64882 | 0.00463 | 0.05870 | — | 0.05870 | 0.05870 | — | 0.05870 | 921.608 | 0.08156 | 0.00174 | — | 924.165 |
| General Office Building | 0.19844 | 3.60792 | 3.03065 | 0.02165 | 0.27420 | — | 0.27420 | 0.27420 | — | 0.27420 | 4,304.85 | 0.38098 | 0.00811 | — | 4,316.79 |
| Industrial Park | 0.15600 | 2.83639 | 2.38257 | 0.01702 | 0.21557 | — | 0.21557 | 0.21557 | — | 0.21557 | 3,384.29 | 0.29951 | 0.00637 | — | 3,393.68 |
| Total | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 32,774.2 | 2.90050 | 0.06171 | — | 32,865.1 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.12084 | 2.06520 | 0.87881 | 0.01318 | 0.16697 | — | 0.16697 | 0.16697 | — | 0.16697 | 2,621.42 | 0.23199 | 0.00494 | — | 2,628.69 |
| Apartments Mid Rise | 0.99300 | 16.9712 | 7.22180 | 0.10833 | 1.37214 | — | 1.37214 | 1.37214 | — | 1.37214 | 21,542.0 | 1.90646 | 0.04056 | — | 21,601.8 |
| Strip Mall | 0.04248 | 0.77241 | 0.64882 | 0.00463 | 0.05870 | — | 0.05870 | 0.05870 | — | 0.05870 | 921.608 | 0.08156 | 0.00174 | — | 924.165 |
| General Office Building | 0.19844 | 3.60792 | 3.03065 | 0.02165 | 0.27420 | — | 0.27420 | 0.27420 | — | 0.27420 | 4,304.85 | 0.38098 | 0.00811 | — | 4,316.79 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Industrial Park | 0.15600 | 2.83639 | 2.38257 | 0.01702 | 0.21557 | — | 0.21557 | 0.21557 | — | 0.21557 | 3,384.29 | 0.29951 | 0.00637 | — | 3,393.68 |
| Total | 1.51075 | 26.2532 | 14.1627 | 0.16481 | 2.08759 | — | 2.08759 | 2.08759 | — | 2.08759 | 32,774.2 | 2.90050 | 0.06171 | — | 32,865.1 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | 0.02205 | 0.37690 | 0.16038 | 0.00241 | 0.03047 | — | 0.03047 | 0.03047 | — | 0.03047 | 434.006 | 0.03841 | 0.00082 | — | 435.209 |
| Apartments Mid Rise | 0.18122 | 3.09725 | 1.31798 | 0.01977 | 0.25042 | — | 0.25042 | 0.25042 | — | 0.25042 | 3,566.53 | 0.31564 | 0.00672 | — | 3,576.42 |
| Strip Mall | 0.00775 | 0.14096 | 0.11841 | 0.00085 | 0.01071 | — | 0.01071 | 0.01071 | — | 0.01071 | 152.583 | 0.01350 | 0.00029 | — | 153.006 |
| General Office Building | 0.03621 | 0.65845 | 0.55309 | 0.00395 | 0.05004 | — | 0.05004 | 0.05004 | — | 0.05004 | 712.717 | 0.06308 | 0.00134 | — | 714.694 |
| Industrial Park | 0.02847 | 0.51764 | 0.43482 | 0.00311 | 0.03934 | — | 0.03934 | 0.03934 | — | 0.03934 | 560.308 | 0.04959 | 0.00106 | — | 561.862 |
| Total | 0.27571 | 4.79120 | 2.58468 | 0.03008 | 0.38098 | — | 0.38098 | 0.38098 | — | 0.38098 | 5,426.14 | 0.48021 | 0.01022 | — | 5,441.19 |

## 4.3. Area Emissions by Source

### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 1.87194 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Consumer Products | 96.8104 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landscape Equipmen | 25.2907 | 2.08010 | 232.095 | 0.01112 | 0.19261 | — | 0.19261 | 0.14570 | — | 0.14570 | 714.903 | 0.02992 | 0.00601 | — | 717.442 |
| Total | 123.973 | 34.0733 | 245.709 | 0.21534 | 2.77929 | — | 2.77929 | 2.73238 | — | 2.73238 | 41,324.7 | 0.79459 | 0.08248 | — | 41,369.1 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 1.87194 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Consumer Products | 96.8104 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 98.6824 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.05616 | 0.95980 | 0.40842 | 0.00613 | 0.07760 | — | 0.07760 | 0.07760 | — | 0.07760 | 1,105.22 | 0.02081 | 0.00208 | — | 1,106.36 |
| Consumer Products | 17.6679 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 4.17297 | 0.34322 | 38.2957 | 0.00184 | 0.03178 | — | 0.03178 | 0.02404 | — | 0.02404 | 107.011 | 0.00448 | 0.00090 | — | 107.391 |
| Total | 21.8970 | 1.30301 | 38.7041 | 0.00796 | 0.10938 | — | 0.10938 | 0.10164 | — | 0.10164 | 1,212.23 | 0.02529 | 0.00298 | — | 1,213.75 |

### 4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 1.87194 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Products | 96.8104 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 25.2907 | 2.08010 | 232.095 | 0.01112 | 0.19261 | — | 0.19261 | 0.14570 | — | 0.14570 | 714.903 | 0.02992 | 0.00601 | — | 717.442 |
| Total | 123.973 | 34.0733 | 245.709 | 0.21534 | 2.77929 | — | 2.77929 | 2.73238 | — | 2.73238 | 41,324.7 | 0.79459 | 0.08248 | — | 41,369.1 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 1.87194 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Consumer Products | 96.8104 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 98.6824 | 31.9932 | 13.6141 | 0.20421 | 2.58668 | — | 2.58668 | 2.58668 | — | 2.58668 | 40,609.8 | 0.76467 | 0.07647 | — | 40,651.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.05616 | 0.95980 | 0.40842 | 0.00613 | 0.07760 | — | 0.07760 | 0.07760 | — | 0.07760 | 1,105.22 | 0.02081 | 0.00208 | — | 1,106.36 |
| Consumer Products | 17.6679 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.00000 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 4.17297 | 0.34322 | 38.2957 | 0.00184 | 0.03178 | — | 0.03178 | 0.02404 | — | 0.02404 | 107.011 | 0.00448 | 0.00090 | — | 107.391 |
| Total | 21.8970 | 1.30301 | 38.7041 | 0.00796 | 0.10938 | — | 0.10938 | 0.10164 | — | 0.10164 | 1,212.23 | 0.02529 | 0.00298 | — | 1,213.75 |

## 4.4. Water Emissions by Land Use

### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 116.671 | 1.23430 | 0.03098 | — | 156.760 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 401.307 | 16.0018 | 0.38407 | — | 915.804 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 176.172 | 7.02470 | 0.16860 | — | 402.033 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 522.116 | 20.8190 | 0.49969 | — | 1,191.50 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 534.058 | 21.2951 | 0.51112 | — | 1,218.75 |
| Total | — | — | — | — | — | — | — | — | — | — | 1,750.32 | 66.3749 | 1.59446 | — | 3,884.85 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 116.671 | 1.23430 | 0.03098 | — | 156.760 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 401.307 | 16.0018 | 0.38407 | — | 915.804 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 176.172 | 7.02470 | 0.16860 | — | 402.033 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 522.116 | 20.8190 | 0.49969 | — | 1,191.50 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 534.058 | 21.2951 | 0.51112 | — | 1,218.75 |
| Total | — | — | — | — | — | — | — | — | — | — | 1,750.32 | 66.3749 | 1.59446 | — | 3,884.85 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 19.3162 | 0.20435 | 0.00513 | — | 25.9535 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 66.4409 | 2.64928 | 0.06359 | — | 151.622 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 29.1672 | 1.16302 | 0.02791 | — | 66.5612 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 86.4423 | 3.44682 | 0.08273 | — | 197.266 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 88.4194 | 3.52565 | 0.08462 | — | 201.778 |
| Total | — | — | — | — | — | — | — | — | — | — | 289.786 | 10.9891 | 0.26398 | — | 643.180 |

### 4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 113.834 | 1.12117 | 0.02826 | — | 150.286 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 364.106 | 14.5184 | 0.34847 | — | 830.909 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 159.083 | 6.34331 | 0.15225 | — | 363.036 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 470.688 | 18.7683 | 0.45047 | — | 1,074.14 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 481.453 | 19.1976 | 0.46077 | — | 1,098.70 |
| Total | — | — | — | — | — | — | — | — | — | — | 1,589.16 | 59.9487 | 1.44022 | — | 3,517.07 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 113.834 | 1.12117 | 0.02826 | — | 150.286 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 364.106 | 14.5184 | 0.34847 | — | 830.909 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 159.083 | 6.34331 | 0.15225 | — | 363.036 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 470.688 | 18.7683 | 0.45047 | — | 1,074.14 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 481.453 | 19.1976 | 0.46077 | — | 1,098.70 |
| Total | — | — | — | — | — | — | — | — | — | — | 1,589.16 | 59.9487 | 1.44022 | — | 3,517.07 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 18.8465 | 0.18562 | 0.00468 | — | 24.8815 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 60.2818 | 2.40369 | 0.05769 | — | 137.567 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 26.3380 | 1.05021 | 0.02521 | — | 60.1048 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 77.9277 | 3.10730 | 0.07458 | — | 177.835 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 79.7101 | 3.17837 | 0.07629 | — | 181.903 |
| Total | — | — | — | — | — | — | — | — | — | — | 263.104 | 9.92520 | 0.23845 | — | 582.291 |

## 4.5. Waste Emissions by Land Use

### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 54.7937 | 5.47644 | 0.00000 | — | 191.705 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 1,071.24 | 107.066 | 0.00000 | — | 3,747.89 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 272.448 | 27.2302 | 0.00000 | — | 953.203 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 298.054 | 29.7895 | 0.00000 | — | 1,042.79 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 312.423 | 31.2256 | 0.00000 | — | 1,093.06 |
| Total | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 54.7937 | 5.47644 | 0.00000 | — | 191.705 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 1,071.24 | 107.066 | 0.00000 | — | 3,747.89 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 272.448 | 27.2302 | 0.00000 | — | 953.203 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 298.054 | 29.7895 | 0.00000 | — | 1,042.79 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 312.423 | 31.2256 | 0.00000 | — | 1,093.06 |
| Total | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 9.07173 | 0.90669 | 0.00000 | — | 31.7389 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 177.355 | 17.7260 | 0.00000 | — | 620.506 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 45.1069 | 4.50827 | 0.00000 | — | 157.814 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 49.3463 | 4.93199 | 0.00000 | — | 172.646 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 51.7253 | 5.16976 | 0.00000 | — | 180.969 |
| Total | — | — | — | — | — | — | — | — | — | — | 332.605 | 33.2427 | 0.00000 | — | 1,163.67 |

### 4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 54.7937 | 5.47644 | 0.00000 | — | 191.705 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 1,071.24 | 107.066 | 0.00000 | — | 3,747.89 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 272.448 | 27.2302 | 0.00000 | — | 953.203 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 298.054 | 29.7895 | 0.00000 | — | 1,042.79 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 312.423 | 31.2256 | 0.00000 | — | 1,093.06 |
| Total | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 54.7937 | 5.47644 | 0.00000 | — | 191.705 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 1,071.24 | 107.066 | 0.00000 | — | 3,747.89 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 272.448 | 27.2302 | 0.00000 | — | 953.203 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 298.054 | 29.7895 | 0.00000 | — | 1,042.79 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 312.423 | 31.2256 | 0.00000 | — | 1,093.06 |
| Total | — | — | — | — | — | — | — | — | — | — | 2,008.96 | 200.788 | 0.00000 | — | 7,028.65 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | 9.07173 | 0.90669 | 0.00000 | — | 31.7389 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | 177.355 | 17.7260 | 0.00000 | — | 620.506 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | 45.1069 | 4.50827 | 0.00000 | — | 157.814 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | 49.3463 | 4.93199 | 0.00000 | — | 172.646 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | 51.7253 | 5.16976 | 0.00000 | — | 180.969 |
| Total | — | — | — | — | — | — | — | — | — | — | 332.605 | 33.2427 | 0.00000 | — | 1,163.67 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.86301 | 2.86301 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 18.4814 | 18.4814 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.99861 | 2.99861 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.44623 | 1.44623 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 121.693 | 121.693 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.86301 | 2.86301 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 18.4814 | 18.4814 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.99861 | 2.99861 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.44623 | 1.44623 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 121.693 | 121.693 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.47400 | 0.47400 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 3.05981 | 3.05981 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.49645 | 0.49645 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.23944 | 0.23944 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 20.1476 | 20.1476 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 24.4173 | 24.4173 |

### 4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.86301 | 2.86301 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 18.4814 | 18.4814 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.99861 | 2.99861 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.44623 | 1.44623 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 121.693 | 121.693 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.86301 | 2.86301 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 18.4814 | 18.4814 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.99861 | 2.99861 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.44623 | 1.44623 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 121.693 | 121.693 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 147.482 | 147.482 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Single Family Housing | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.47400 | 0.47400 |
| Apartments Mid Rise | — | — | — | — | — | — | — | — | — | — | — | — | — | 3.05981 | 3.05981 |
| Strip Mall | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.49645 | 0.49645 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.23944 | 0.23944 |
| Industrial Park | — | — | — | — | — | — | — | — | — | — | — | — | — | 20.1476 | 20.1476 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | 24.4173 | 24.4173 |

## 4.7. Offroad Emissions By Equipment Type

### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.8. Stationary Emissions By Equipment Type

### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.9. User Defined Emissions By Equipment Type

### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sequester | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Total all Land Uses | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 582,755 | 582,755 | 582,755 | 212,705,575 |

### 5.9.2. Mitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Total all Land Uses | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 582,755 | 582,755 | 582,755 | 212,705,575 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

| Land Use | Hearth Type | Unmitigated (number) | Mitigated (number) |
|---|---|---|---|
| Single Family Housing | Wood Fireplaces | 0 | 0 |
| Single Family Housing | Gas Fireplaces | 205 | 205 |
| Single Family Housing | Propane Fireplaces | 0 | 0 |
| Single Family Housing | Electric Fireplaces | 0 | 0 |
| Single Family Housing | No Fireplaces | 0 | 0 |
| Single Family Housing | Conventional Wood Stoves | 0 | 0 |

| | | | |
|---|---|---|---|
| Single Family Housing | Catalytic Wood Stoves | 0 | 0 |
| Single Family Housing | Non-Catalytic Wood Stoves | 0 | 0 |
| Single Family Housing | Pellet Wood Stoves | 0 | 0 |
| Apartments Mid Rise | Wood Fireplaces | 0 | 0 |
| Apartments Mid Rise | Gas Fireplaces | 2,688 | 2,688 |
| Apartments Mid Rise | Propane Fireplaces | 0 | 0 |
| Apartments Mid Rise | Electric Fireplaces | 0 | 0 |
| Apartments Mid Rise | No Fireplaces | 0 | 0 |
| Apartments Mid Rise | Conventional Wood Stoves | 0 | 0 |
| Apartments Mid Rise | Catalytic Wood Stoves | 0 | 0 |
| Apartments Mid Rise | Non-Catalytic Wood Stoves | 0 | 0 |
| Apartments Mid Rise | Pellet Wood Stoves | 0 | 0 |
| Strip Mall | Wood Fireplaces | 0 | 0 |
| Strip Mall | Gas Fireplaces | 0 | 0 |
| Strip Mall | Propane Fireplaces | 0 | 0 |
| Strip Mall | Electric Fireplaces | 0 | 0 |
| Strip Mall | No Fireplaces | 0 | 0 |
| Strip Mall | Conventional Wood Stoves | 0 | 0 |
| Strip Mall | Catalytic Wood Stoves | 0 | 0 |
| Strip Mall | Non-Catalytic Wood Stoves | 0 | 0 |
| Strip Mall | Pellet Wood Stoves | 0 | 0 |
| General Office Building | Wood Fireplaces | 0 | 0 |
| General Office Building | Gas Fireplaces | 0 | 0 |
| General Office Building | Propane Fireplaces | 0 | 0 |
| General Office Building | Electric Fireplaces | 0 | 0 |
| General Office Building | No Fireplaces | 0 | 0 |
| General Office Building | Conventional Wood Stoves | 0 | 0 |
| General Office Building | Catalytic Wood Stoves | 0 | 0 |

| | | | |
|---|---|---|---|
| General Office Building | Non-Catalytic Wood Stoves | 0 | 0 |
| General Office Building | Pellet Wood Stoves | 0 | 0 |
| Industrial Park | Wood Fireplaces | 0 | 0 |
| Industrial Park | Gas Fireplaces | 0 | 0 |
| Industrial Park | Propane Fireplaces | 0 | 0 |
| Industrial Park | Electric Fireplaces | 0 | 0 |
| Industrial Park | No Fireplaces | 0 | 0 |
| Industrial Park | Conventional Wood Stoves | 0 | 0 |
| Industrial Park | Catalytic Wood Stoves | 0 | 0 |
| Industrial Park | Non-Catalytic Wood Stoves | 0 | 0 |
| Industrial Park | Pellet Wood Stoves | 0 | 0 |

## 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|
| 6,034,966 | 2,011,655 | 2,315,432 | 771,811 | — |

## 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00000 |
| Summer Days | day/yr | 330.000 |

## 5.10.4. Landscape Equipment - Mitigated

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00000 |
| Summer Days | day/yr | 330.000 |

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Single Family Housing | 1,242,987 | 203.983 | 0.0330 | 0.0040 | 8,179,524 |
| Apartments Mid Rise | 7,977,704 | 203.983 | 0.0330 | 0.0040 | 67,216,897 |
| Strip Mall | 3,985,087 | 203.983 | 0.0330 | 0.0040 | 2,875,665 |
| General Office Building | 12,411,497 | 203.983 | 0.0330 | 0.0040 | 13,432,288 |
| Industrial Park | 9,757,388 | 203.983 | 0.0330 | 0.0040 | 10,559,891 |

### 5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Single Family Housing | 1,242,987 | 203.983 | 0.0330 | 0.0040 | 8,179,524 |
| Apartments Mid Rise | 7,977,704 | 203.983 | 0.0330 | 0.0040 | 67,216,897 |
| Strip Mall | 3,985,087 | 203.983 | 0.0330 | 0.0040 | 2,875,665 |
| General Office Building | 12,411,497 | 203.983 | 0.0330 | 0.0040 | 13,432,288 |
| Industrial Park | 9,757,388 | 203.983 | 0.0330 | 0.0040 | 10,559,891 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Single Family Housing | 6,195,510 | 39,808,014 |
| Apartments Mid Rise | 81,236,736 | 0.00000 |
| Strip Mall | 35,662,512 | 0.00000 |
| General Office Building | 105,692,217 | 0.00000 |

| | | |
|---|---|---|
| Industrial Park | 108,109,606 | 0.00000 |

### 5.12.2. Mitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Single Family Housing | 5,621,186 | 39,808,014 |
| Apartments Mid Rise | 73,706,091 | 0.00000 |
| Strip Mall | 32,203,248 | 0.00000 |
| General Office Building | 95,281,534 | 0.00000 |
| Industrial Park | 97,460,810 | 0.00000 |

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Single Family Housing | 101.670 | 0.00000 |
| Apartments Mid Rise | 1,987.68 | 0.00000 |
| Strip Mall | 505.527 | 0.00000 |
| General Office Building | 553.039 | 0.00000 |
| Industrial Park | 579.701 | 0.00000 |

### 5.13.2. Mitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Single Family Housing | 101.670 | 0.00000 |
| Apartments Mid Rise | 1,987.68 | 0.00000 |
| Strip Mall | 505.527 | 0.00000 |
| General Office Building | 553.039 | 0.00000 |
| Industrial Park | 579.701 | 0.00000 |

# 5.14. Operational Refrigeration and Air Conditioning Equipment

## 5.14.1. Unmitigated

| Land Use | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| Single Family Housing | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088.00 | 0.00225 | 2.50000 | 2.50000 | 10.00000 |
| Single Family Housing | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.11538 | 0.60000 | 0.00000 | 1.000000 |
| Apartments Mid Rise | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088.00 | 0.00225 | 2.50000 | 2.50000 | 10.00000 |
| Apartments Mid Rise | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.11538 | 0.60000 | 0.00000 | 1.000000 |
| Strip Mall | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.00180 | 4.00000 | 4.00000 | 18.0000 |
| Strip Mall | Stand-alone retail refrigerators and freezers | R-134a | 1,430.00 | 0.03750 | 1.000000 | 0.00000 | 1.000000 |
| Strip Mall | Walk-in refrigerators and freezers | R-404A | 3,922.00 | 0.00040 | 7.50000 | 7.50000 | 20.0000 |
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.01679 | 0.60000 | 0.00000 | 1.000000 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.00180 | 4.00000 | 4.00000 | 18.0000 |
| Industrial Park | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.30000 | 4.00000 | 4.00000 | 18.0000 |

## 5.14.2. Mitigated

| Land Use | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Single Family Housing | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088.00 | 0.00225 | 2.50000 | 2.50000 | 10.00000 |
| Single Family Housing | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.11538 | 0.60000 | 0.00000 | 1.000000 |
| Apartments Mid Rise | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088.00 | 0.00225 | 2.50000 | 2.50000 | 10.00000 |
| Apartments Mid Rise | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.11538 | 0.60000 | 0.00000 | 1.000000 |
| Strip Mall | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.00180 | 4.00000 | 4.00000 | 18.0000 |
| Strip Mall | Stand-alone retail refrigerators and freezers | R-134a | 1,430.00 | 0.03750 | 1.000000 | 0.00000 | 1.000000 |
| Strip Mall | Walk-in refrigerators and freezers | R-404A | 3,922.00 | 0.00040 | 7.50000 | 7.50000 | 20.0000 |
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430.00 | 0.01679 | 0.60000 | 0.00000 | 1.000000 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.00180 | 4.00000 | 4.00000 | 18.0000 |
| Industrial Park | Other commercial A/C and heat pumps | R-410A | 2,088.00 | 0.30000 | 4.00000 | 4.00000 | 18.0000 |

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

### 5.15.2. Mitigated

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

### 5.16.2. Process Boilers

## 5.17. User Defined

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

#### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

#### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

#### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 21.2000 | annual days of extreme heat |
| Extreme Precipitation | 9.85000 | annual days with precipitation above 20 mm |
| Sea Level Rise | — | meters of inundation depth |
| Wildfire | 34.1100 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |

| | | | | |
|---|---|---|---|---|
| Flooding | N/A | N/A | N/A | N/A |
| Drought | 0 | 0 | 0 | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | 1 | 1 | 1 | 2 |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 32.1469 |
| AQ-PM | 2.93715 |
| AQ-DPM | 12.6696 |
| Drinking Water | 31.2851 |
| Lead Risk Housing | 44.5117 |
| Pesticides | 45.0000 |
| Toxic Releases | 12.4531 |
| Traffic | 30.6125 |
| Effect Indicators | — |
| CleanUp Sites | 0.00000 |
| Groundwater | 0.00000 |
| Haz Waste Facilities/Generators | 50.1390 |
| Impaired Water Bodies | 51.2180 |
| Solid Waste | 75.6701 |
| Sensitive Population | — |
| Asthma | 39.7183 |
| Cardio-vascular | 16.4756 |
| Low Birth Weights | 15.8712 |
| Socioeconomic Factor Indicators | — |
| Education | 30.4100 |
| Housing | 30.2028 |
| Linguistic | 29.5304 |
| Poverty | 48.9196 |
| Unemployment | 28.2015 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 50.94315411 |
| Employed | 57.44899269 |
| Median HI | 43.46208136 |
| Education | — |
| Bachelor's or higher | 34.96727833 |
| High school enrollment | 5.787244963 |
| Preschool enrollment | 60.90080842 |
| Transportation | — |
| Auto Access | 47.37585012 |
| Active commuting | 46.70858463 |
| Social | — |
| 2-parent households | 13.1271654 |
| Voting | 69.79340434 |
| Neighborhood | — |
| Alcohol availability | 65.10971385 |
| Park access | 9.033748236 |
| Retail density | 39.11202361 |
| Supermarket access | 35.78852817 |
| Tree canopy | 90.65828307 |
| Housing | — |
| Homeownership | 38.44475812 |
| Housing habitability | 68.77967407 |
| Low-inc homeowner severe housing cost burden | 57.70563326 |
| Low-inc renter severe housing cost burden | 71.42307199 |

| | |
|---|---|
| Uncrowded housing | 65.16104196 |
| Health Outcomes | — |
| Insured adults | 62.95393302 |
| Arthritis | 0.0 |
| Asthma ER Admissions | 58.7 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 17.9 |
| Cognitively Disabled | 32.0 |
| Physically  Disabled | 55.6 |
| Heart Attack ER Admissions | 71.4 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 52.2 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 8.3 |
| SLR Inundation Area | 0.0 |

| | |
|---|---|
| Children | 22.0 |
| Elderly | 63.3 |
| English Speaking | 87.4 |
| Foreign-born | 2.3 |
| Outdoor Workers | 24.5 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 90.1 |
| Traffic Density | 24.3 |
| Traffic Access | 0.0 |
| Other Indices | — |
| Hardship | 44.5 |
| Other Decision Support | — |
| 2016 Voting | 74.0 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 15.0000 |
| Healthy Places Index Score for Project Location (b) | 45.0000 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

## 8.1. Justifications

| Screen | Justification |
|---|---|
| Operations: Hearths | Excludes wood-burning fireplaces. To be conservative, assumes all new residential units would include gas-fired fireplaces. Assumes an average of 2 hrs/day, 60 days/yr based on model defaults. |

## 8.5. Operations

### 8.5.2. Area Sources

#### 8.5.2.1. Hearths

| Land Use | Model Parameter | Default Value | New Value |
|---|---|---|---|
| Single Family Housing | Gas Fireplaces | 0 | 205 |
| Single Family Housing | No Fireplaces | 205 | 0 |
| Single Family Housing | Hours/Day | 0 | 2 |
| Single Family Housing | Days/Year | 0 | 60 |
| Apartments Mid Rise | Gas Fireplaces | 0 | 2,688 |
| Apartments Mid Rise | No Fireplaces | 2,688 | 0 |
| Apartments Mid Rise | Hours/Day | 0 | 2 |
| Apartments Mid Rise | Days/Year | 0 | 60 |

| Calendar Year | EMFAC2021 Vehicle Category | Fuel Type | Exhaust CO2 | Exhaust CH4 | Exhaust N2O |
|---|---|---|---|---|---|
| 2045 | All Other Buses | DSL | 1 | 1 | 1 |
| 2045 | All Other Buses | NG | 1 | 1 | 1 |
| 2045 | All Other Buses | ELEC | 0 | 0 | 0 |
| 2045 | LDA | GAS | 1 | 1 | 1 |
| 2045 | LDA | DSL | 1 | 1 | 1 |
| 2045 | LDA | ELEC | 1 | 1 | 1 |
| 2045 | LDA | PHE | 1 | 1 | 1 |
| 2045 | LDT1 | GAS | 1 | 1 | 1 |
| 2045 | LDT1 | DSL | 1 | 1 | 1 |
| 2045 | LDT1 | ELEC | 1 | 1 | 1 |
| 2045 | LDT1 | PHE | 1 | 1 | 1 |
| 2045 | LDT2 | GAS | 1 | 1 | 1 |
| 2045 | LDT2 | DSL | 1 | 1 | 1 |
| 2045 | LDT2 | ELEC | 1 | 1 | 1 |
| 2045 | LDT2 | PHE | 1 | 1 | 1 |
| 2045 | LHD1 | GAS | 1.625233765 | 1.566391721 | 1.612440372 |
| 2045 | LHD1 | DSL | 1.586890542 | 1.606223669 | 1.586890542 |
| 2045 | LHD1 | ELEC | 0 | 0 | 0 |
| 2045 | LHD2 | GAS | 1.594353597 | 1.519354002 | 1.573976909 |
| 2045 | LHD2 | DSL | 1.556295501 | 1.541099403 | 1.556295501 |
| 2045 | LHD2 | ELEC | 0 | 0 | 0 |
| 2045 | MCY | GAS | 1 | 1 | 1 |
| 2045 | MDV | GAS | 1 | 1 | 1 |
| 2045 | MDV | DSL | 1 | 1 | 1 |
| 2045 | MDV | ELEC | 1 | 1 | 1 |
| 2045 | MDV | PHE | 1 | 1 | 1 |
| 2045 | MH | GAS | 1 | 1 | 1 |
| 2045 | MH | DSL | 1 | 1 | 1 |
| 2045 | MH | ELEC | 0 | 0 | 0 |
| 2045 | Motor Coach | DSL | 1 | 1 | 1 |
| 2045 | Motor Coach | ELEC | 0 | 0 | 0 |
| 2045 | OBUS | GAS | 1.908523492 | 1.535626665 | 2.543996189 |
| 2045 | OBUS | ELEC | 0 | 0 | 0 |
| 2045 | PTO | DSL | 1.803485583 | 1.786556153 | 1.803485583 |
| 2045 | PTO | ELEC | 0 | 0 | 0 |
| 2045 | SBUS | GAS | 1.333174415 | 1.436540079 | 1.52836209 |
| 2045 | SBUS | DSL | 1.583661815 | 1.534945941 | 1.583661815 |
| 2045 | SBUS | NG | 1.537550324 | 1.625388497 | 1.537550324 |
| 2045 | SBUS | ELEC | 0 | 0 | 0 |
| 2045 | T6 CAIRP Class 4 | DSL | 2.260146672 | 2.342620402 | 2.260146672 |
| 2045 | T6 CAIRP Class 4 | ELEC | 0 | 0 | 0 |
| 2045 | T6 CAIRP Class 5 | DSL | 2.256103779 | 2.336573798 | 2.256103779 |
| 2045 | T6 CAIRP Class 5 | ELEC | 0 | 0 | 0 |
| 2045 | T6 CAIRP Class 6 | DSL | 2.267324628 | 2.351788051 | 2.267324628 |
| 2045 | T6 CAIRP Class 6 | ELEC | 0 | 0 | 0 |
| 2045 | T6 CAIRP Class 7 | DSL | 1.260104459 | 1.298702965 | 1.260104459 |
| 2045 | T6 CAIRP Class 7 | NG | 1.206948773 | 1.316145571 | 1.206948773 |
| 2045 | T6 CAIRP Class 7 | ELEC | 0 | 0 | 0 |
| 2045 | T6 Instate Delivery Class 4 | DSL | 1.928272398 | 1.982620091 | 1.928272398 |
| 2045 | T6 Instate Delivery Class 4 | NG | 1.876732831 | 2.080599564 | 1.876732831 |
| 2045 | T6 Instate Delivery Class 4 | ELEC | 0 | 0 | 0 |
| 2045 | T6 Instate Delivery Class 5 | DSL | 1.927081738 | 1.981968488 | 1.927081738 |
| 2045 | T6 Instate Delivery Class 5 | NG | 1.891400552 | 2.097049707 | 1.891400552 |
| 2045 | T6 Instate Delivery Class 5 | ELEC | 0 | 0 | 0 |
| 2045 | T6 Instate Delivery Class 6 | DSL | 1.930831639 | 1.985426629 | 1.930831639 |
| 2045 | T6 Instate Delivery Class 6 | NG | 1.893725174 | 2.099698829 | 1.893725174 |
| 2045 | T6 Instate Delivery Class 6 | ELEC | 0 | 0 | 0 |
| 2045 | T6 Instate Delivery Class 7 | DSL | 1.499589013 | 1.476006978 | 1.499589013 |
| 2045 | T6 Instate Delivery Class 7 | NG | 1.401444907 | 1.526829508 | 1.401444907 |
| 2045 | T6 Instate Delivery Class 7 | ELEC | 0 | 0 | 0 |
| 2045 | T6 Instate Other Class 4 | DSL | 1.986592759 | 2.02130179 | 1.986592759 |

| | | | | |
|---|---|---|---|---|
| 2045 T6 Instate Other Class 4 | NG | 1.909961541 | 2.108734188 | 1.909961541 |
| 2045 T6 Instate Other Class 4 | ELEC | 0 | 0 | 0 |
| 2045 T6 Instate Other Class 5 | DSL | 1.987989581 | 2.02102998 | 1.987989581 |
| 2045 T6 Instate Other Class 5 | NG | 1.918461452 | 2.116924594 | 1.918461452 |
| 2045 T6 Instate Other Class 5 | ELEC | 0 | 0 | 0 |
| 2045 T6 Instate Other Class 6 | DSL | 1.986969621 | 2.020625577 | 1.986969621 |
| 2045 T6 Instate Other Class 6 | NG | 1.91065848 | 2.108010116 | 1.91065848 |
| 2045 T6 Instate Other Class 6 | ELEC | 0 | 0 | 0 |
| 2045 T6 Instate Other Class 7 | DSL | 1.620248979 | 1.528126657 | 1.620248979 |
| 2045 T6 Instate Other Class 7 | NG | 1.51109084 | 1.614799674 | 1.51109084 |
| 2045 T6 Instate Other Class 7 | ELEC | 0 | 0 | 0 |
| 2045 T6 Instate Tractor Class 6 | DSL | 2.0384636 | 2.050485047 | 2.0384636 |
| 2045 T6 Instate Tractor Class 6 | NG | 1.962738637 | 2.159181999 | 1.962738637 |
| 2045 T6 Instate Tractor Class 6 | ELEC | 0 | 0 | 0 |
| 2045 T6 Instate Tractor Class 7 | DSL | 1.176736256 | 1.180771669 | 1.176736256 |
| 2045 T6 Instate Tractor Class 7 | NG | 1.138259876 | 1.2151928 | 1.138259876 |
| 2045 T6 Instate Tractor Class 7 | ELEC | 0 | 0 | 0 |
| 2045 T6 OOS Class 4 | DSL | 1 | 1 | 1 |
| 2045 T6 OOS Class 4 | ELEC | 0 | 0 | 0 |
| 2045 T6 OOS Class 5 | DSL | 1 | 1 | 1 |
| 2045 T6 OOS Class 5 | ELEC | 0 | 0 | 0 |
| 2045 T6 OOS Class 6 | DSL | 1 | 1 | 1 |
| 2045 T6 OOS Class 6 | ELEC | 0 | 0 | 0 |
| 2045 T6 OOS Class 7 | DSL | 1 | 1 | 1 |
| 2045 T6 OOS Class 7 | ELEC | 0 | 0 | 0 |
| 2045 T6 Public Class 4 | DSL | 1.705462353 | 1.522944343 | 1.705462353 |
| 2045 T6 Public Class 4 | NG | 1.660789344 | 1.808261815 | 1.660789344 |
| 2045 T6 Public Class 4 | ELEC | 0 | 0 | 0 |
| 2045 T6 Public Class 5 | DSL | 1.703186046 | 1.546634975 | 1.703186046 |
| 2045 T6 Public Class 5 | NG | 1.625287755 | 1.7561386 | 1.625287755 |
| 2045 T6 Public Class 5 | ELEC | 0 | 0 | 0 |
| 2045 T6 Public Class 6 | DSL | 1.704442022 | 1.585678166 | 1.704442022 |
| 2045 T6 Public Class 6 | NG | 1.636916979 | 1.781260372 | 1.636916979 |
| 2045 T6 Public Class 6 | ELEC | 0 | 0 | 0 |
| 2045 T6 Public Class 7 | DSL | 1.575874108 | 1.483825001 | 1.575874108 |
| 2045 T6 Public Class 7 | NG | 1.50053842 | 1.637967823 | 1.50053842 |
| 2045 T6 Public Class 7 | ELEC | 0 | 0 | 0 |
| 2045 T6 Utility Class 5 | DSL | 2.261598693 | 2.366768041 | 2.261598693 |
| 2045 T6 Utility Class 5 | NG | 2.150256725 | 2.402390224 | 2.150256725 |
| 2045 T6 Utility Class 5 | ELEC | 0 | 0 | 0 |
| 2045 T6 Utility Class 6 | DSL | 2.260663191 | 2.365503668 | 2.260663191 |
| 2045 T6 Utility Class 6 | NG | 2.149528695 | 2.401491252 | 2.149528695 |
| 2045 T6 Utility Class 6 | ELEC | 0 | 0 | 0 |
| 2045 T6 Utility Class 7 | DSL | 2.294687728 | 2.389912934 | 2.294687728 |
| 2045 T6 Utility Class 7 | NG | 2.181976653 | 2.433821293 | 2.181976653 |
| 2045 T6 Utility Class 7 | ELEC | 0 | 0 | 0 |
| 2045 T6TS | GAS | 1.948665831 | 1.812150386 | 2.646232773 |
| 2045 T6TS | ELEC | 0 | 0 | 0 |
| 2045 T7 CAIRP Class 8 | DSL | 1.23266703 | 1.276945037 | 1.23266703 |
| 2045 T7 CAIRP Class 8 | NG | 1.168325027 | 1.285576147 | 1.168325027 |
| 2045 T7 CAIRP Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 NNOOS Class 8 | DSL | 1 | 1 | 1 |
| 2045 T7 NNOOS Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 NOOS Class 8 | DSL | 1 | 1 | 1 |
| 2045 T7 NOOS Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Other Port Class 8 | DSL | 1.204990253 | 1.234317082 | 1.204990253 |
| 2045 T7 Other Port Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 POAK Class 8 | DSL | 1.186097079 | 1.22780555 | 1.186097079 |
| 2045 T7 POAK Class 8 | NG | 1.114049348 | 1.229386418 | 1.114049348 |
| 2045 T7 POAK Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 POLA Class 8 | DSL | 1.138385562 | 1.172797263 | 1.138385562 |
| 2045 T7 POLA Class 8 | NG | 1.076405653 | 1.182094195 | 1.076405653 |

| | | | | |
|---|---|---|---|---|
| 2045 T7 POLA Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Public Class 8 | DSL | 1.502391447 | 1.391370266 | 1.502391447 |
| 2045 T7 Public Class 8 | NG | 1.556514394 | 1.714004358 | 1.556514394 |
| 2045 T7 Public Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Single Concrete/Transit Mix Class 8 | DSL | 2.160092575 | 2.214678366 | 2.160092575 |
| 2045 T7 Single Concrete/Transit Mix Class 8 | NG | 2.026275116 | 2.275349847 | 2.026275116 |
| 2045 T7 Single Concrete/Transit Mix Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Single Dump Class 8 | DSL | 1.704055109 | 1.644961143 | 1.704055109 |
| 2045 T7 Single Dump Class 8 | NG | 1.605675448 | 1.752536314 | 1.605675448 |
| 2045 T7 Single Dump Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Single Other Class 8 | DSL | 1.789275157 | 1.741557433 | 1.789275157 |
| 2045 T7 Single Other Class 8 | NG | 1.696931821 | 1.856843867 | 1.696931821 |
| 2045 T7 Single Other Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 SWCV Class 8 | DSL | 1.26695296 | 1.361450416 | 1.26695296 |
| 2045 T7 SWCV Class 8 | NG | 1.507835231 | 1.105684997 | 1.507835231 |
| 2045 T7 SWCV Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Tractor Class 8 | DSL | 1.153835943 | 1.17706537 | 1.153835943 |
| 2045 T7 Tractor Class 8 | NG | 1.086951942 | 1.181896804 | 1.086951942 |
| 2045 T7 Tractor Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7 Utility Class 8 | DSL | 1.629301501 | 1.647109549 | 1.629301501 |
| 2045 T7 Utility Class 8 | ELEC | 0 | 0 | 0 |
| 2045 T7IS | GAS | 1.897138164 | 1.926772857 | 2.699580817 |
| 2045 T7IS | ELEC | 0 | 0 | 0 |
| 2045 UBUS | ELEC | 1 | 1 | 1 |
| 2045 UBUS | NG | 0.90399137 | 1 | 0.90399137 |
| 2045 UBUS | GAS | 0.904166491 | 1 | 1 |
| 2045 UBUS | DSL | 0.90399137 | 1 | 0.90399137 |
| 2045 UBUS | ELEC | 0 | 0 | 0 |
| **HIGHEST VALUE ALL VEHICLE CATEGORIES:** | | **2.294687728** | **2.433821293** | **2.699580817** |