249 Pennsylvania Avenue

Air Quality and Greenhouse Gas Study

prepared for

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1 Project Description

1.1 Introduction

This study analyzes the potential air quality, health risk, and greenhouse gas (GHG) impacts of the proposed 249 Pennsylvania Avenue Mixed Use Project (herein referred to as “proposed action” or “project”) in San Francisco, California in the South of Market District and Potrero Hill neighborhood. Rincon Consultants, Inc. (Rincon) prepared this study for use in support of environmental documentation being prepared pursuant to the United States Department of Housing and Urban Development (HUD) requirements for the National Environmental Policy Act (NEPA). The purpose of this study is to analyze the project’s air quality, health risk, and GHG impacts related to both temporary construction activity and long-term operation of the project.

1.2 Project Location

The project site is located at the southeastern corner of the intersection of Pennsylvania Avenue and Mariposa Street (Block 3999, Lot 015) and is located within the city of San Francisco’s South of Market District and Potrero Hill neighborhood, zoned Urban Mixed Use (UMU). The project site comprises an approximately 21,625 square foot (0.5-acre) lot that contains an existing parking lot and vacant building. The surrounding area is comprised of commercial, mixed-use, and residential land uses.

Adjacent land uses include light industrial and office buildings to the north and east and residential to the west and south. Figure 1 shows the regional location of the project site and Figure 2 shows an aerial view of the project site and surrounding area.

1.3 Project Description

The project would consist of demolition of the existing on-site building and construction of a new nine-story mixed-use building. The proposed building would contain approximately 82,900 square feet (sq. ft.) of residential space, 2,000 sq. ft. of commercial space, and 1,200 sq. ft. of social service space, as well as open space areas such as a garden, courtyard, rain garden, and roof urban farm. Residential space would consist of studio apartments, 60 units total with a unit area of 400 sq. ft. (for a total of 24,000 sq. ft. of studio apartments); 2-bedroom apartments, 30 units total with a unit area of 800 sq. ft. (for a total of 24,000 sq. ft. of 2-bedroom apartments); and 3-bedroom apartments, 30 units total with a unit area of 1,030 sq. ft. (for a total of 30,900 sq. ft. of 3-bedroom apartments.

The proposed building would include large murals that display the neighborhood’s character, would offer urban agriculture and pollinator gardens, and would include fencing to offer privacy for residents in the proposed outdoor spaces. The project would include ancillary spaces for laundry, bicycle parking, trash, storage, and property management.

Project construction is anticipated to occur in October 2026. Approximately 10,100 cubic yards of material are anticipated to be exported from the project site during construction.

Figure 1 Regional Location

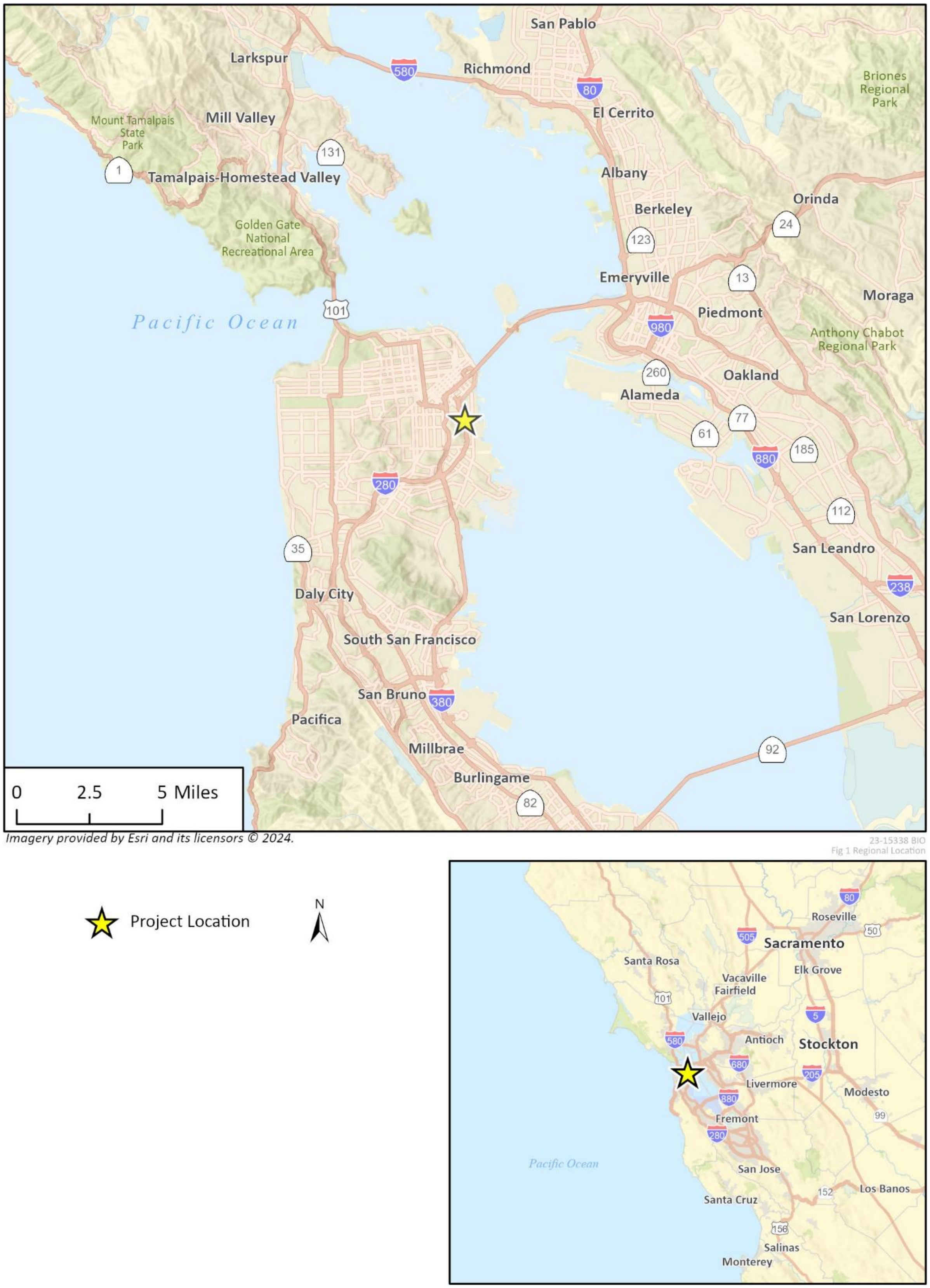

Figure 2 Location of Project Site

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Fig 2 Project Location

2 Air Quality

2.1 Environmental and Regulatory Setting

Local Climate and Meteorology

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

The City of San Francisco is located in the SFBAAB and the proximity to the Pacific Ocean and San Francisco Bay influence the climate in the city and surrounding region. The Santa Cruz Mountains and Diablo Mountain Range restrict air dispersion. The annual high temperature is approximately 70 degrees Fahrenheit (°F), while the annual low temperature is approximately 46°F (United States Climate Data 2024). The average monthly precipitation ranges between 0.01 and 4.5 inches.

Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack. The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for “criteria pollutants” and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of up to ten microns (PM_{10}) and up to 2.5 microns ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The characteristics, sources and effects of criteria pollutants are discussed in the following subsections. The following subsections describe the characteristics, sources, and health and atmospheric effects of air pollutants of primary concern.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between NO_X and ROG. ROG are composed of non-methane hydrocarbons (with some specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide. NO_X are formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many

[1] CARB defines VOC and ROG similarly as, “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this analysis.

different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including changes in breathing patterns, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes (BAAQMD 2017a). Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

Carbon monoxide is a localized pollutant that is found in high concentrations only near its source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is the incomplete combustion of petroleum fuels by automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of carbon monoxide include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. The health effects of carbon monoxide are related to its affinity for hemoglobin in the blood. Carbon monoxide causes a number of health problems, including aggravation of some heart diseases (e.g., angina), reduced tolerance for exercise, impaired mental function, and impaired fetal development. At high levels of exposure, carbon monoxide reduces the amount of oxygen in the blood, leading to mortality (BAAQMD 2017a). Carbon monoxide tends to dissipate rapidly into the atmosphere; consequently, violations of the NAAQS and/or CAAQS for carbon monoxide are generally associated with localized carbon monoxide "hotspots" that can occur at major roadway intersections during heavy peak-hour traffic conditions.

Nitrogen Dioxide

Nitrogen dioxide is a by-product of fuel combustion; the primary sources are motor vehicles and industrial boilers and furnaces. The principal form of NO_X produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form nitrogen dioxide, creating the mixture of nitric oxide and nitrogen dioxide commonly called NO_X. Nitrogen dioxide is an acute irritant that can aggravate respiratory illnesses and symptoms, particularly in sensitive groups (BAAQMD 2017a). A relationship between nitrogen dioxide and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility (BAAQMD 2017a). It can also contribute to the formation of PM_{10} and acid rain.

Sulfur Dioxide

Sulfur dioxide is included in a group of highly reactive gases known as "oxides of sulfur." The largest sources of sulfur dioxide emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of sulfur dioxide emissions include industrial processes such as extracting metal from ore and the burning of fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Sulfur dioxide is linked to a number of adverse effects on the respiratory system, including aggravation of respiratory diseases, such as asthma and emphysema, and reduced lung function (BAAQMD 2017a).

Particulate Matter

Suspended atmospheric PM_{10} and $PM_{2.5}$ is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are directly emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. Particulate matter is also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles while $PM_{2.5}$ is generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems (CARB 2020a). More than half of $PM_{2.5}$ that is inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance. Suspended particulates can also reduce lung function, aggravate respiratory and cardiovascular diseases, increase mortality rates, and reduce lung function growth in children (BAAQMD 2017a).

Lead

Lead is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. However, as a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (U.S. EPA 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. The health impacts of lead include behavioral and hearing disabilities in children and nervous system impairment (BAAQMD 2017a).

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about $1/70^{th}$ the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2020b). Within the SFBAAB, DPM accounted for approximately 85 percent of the cancer risk from air toxics in the region with mobile sources being one of the top contributors (BAAQMD 2016, 2020a)

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Diesel Particulate Matter

Particulate emissions from diesel engine fuel combustion form an important fraction of the PM emission inventory because particulates in diesel emissions are very small and readily respirable. These particles have hundreds of chemicals adsorbed onto their surfaces, including many known or suspected mutagens and carcinogens. The California Office of Environmental Health Hazard Assessment (OEHHA) reviewed and evaluated the potential for diesel exhaust to affect human health and the associated scientific uncertainties (CARB 1998). Based on the available scientific evidence, it was determined that a level of DPM exposure below which no carcinogenic effects are anticipated has not been identified.

The CARB staff have conducted risk characterization scenarios to determine the potential excess cancer risks involved when individuals are near various sources of diesel engine emissions, ranging from school buses to high volume freeways. The purpose of the risk characterization was to estimate, through air dispersion modeling, the cancer risk associated with typical diesel-fueled engine or vehicle activities based on modeled PM concentrations at the point of maximum impact. The study included various sources of DPM emissions, including idling school buses, truck stops, low- and high-volume freeways, and other sources. High-volume freeways (i.e., freeways with approximately 20,000 daily heavy-duty truck trips) were estimated to cause 800 to 1,700 potential excess cases of cancers per one million population, while low-volume freeways (i.e., freeways with approximately 2,000 daily heavy-duty truck trips) were estimated to cause about 100 to 200 per million potential excess cases of cancers per one million population (CARB 2000).

Other Vehicle-Related TACs

Several other pollutants emitted by vehicle exhaust are a public health concern. The U.S. EPA has identified six pollutants of highest priority: DPM, acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. The latter five pollutants are part of the total organic gases (TOG) emitted by diesel- and gasoline-fueled vehicles. The following list provides a brief description of each of these chemicals:

- **Acrolein** is the simplest unsaturated aldehyde. It is a widely produced substance with a piercing, disagreeable, acrid smell similar to that of burning fat. Acrolein is an unstable toxic substance that can burn the nose and throat and is a severe pulmonary irritant. It is a flammable and poisonous substance prepared industrially by the oxidation of propene. Small amounts of acrolein are formed and enter the air when trees, tobacco, other plants, gasoline, and oil are burned.
- **Acetaldehyde**, sometimes known as ethanol, is an organic chemical compound used as an intermediate in the production of acetic acid, certain esters, and a number of other chemicals. It is a flammable liquid with a fruity smell. Acetaldehyde is toxic when applied externally for prolonged periods, an irritant, and a probable carcinogen.
- **Formaldehyde** is an organic chemical compound containing a terminal carbonyl group. It is produced in the atmosphere by the action of sunlight and oxygen on atmospheric methane and other hydrocarbons, becoming a part of smog. Additionally, formaldehyde is an intermediate in the oxidation (or combustion) of methane as well as other carbon compounds including automobile exhaust. Formaldehyde is a flammable substance that can be toxic, allergenic, and carcinogenic. It is naturally made in small amounts in human bodies and is found in small

amounts in household sources, such as fiberglass, carpets, permanent press fabrics, paper products, and some household cleaners.

- **Benzene**, or benzol, is an organic chemical compound and a known carcinogen. It is a colorless and highly flammable liquid with a sweet smell and a relatively high melting point. Benzene is an important industrial solvent and precursor in the production of drugs, plastics, synthetic rubber, and dyes. Benzene is a natural constituent of crude oil and may be synthesized from other compounds present in petroleum. It is found in gasoline and cigarette smoke. Natural sources of benzene include emissions from volcanoes and forest fires.
- **1,3-Butadiene** is an important industrial chemical used in the production of synthetic rubber (about 75 percent of manufactured 1,3-butadiene), which is then used primarily in the production of automobile tires. It is a colorless gas with a mild gasoline-like odor. Gasoline contains small amounts of 1,3-butadiene that are exhausted into the air after the combustion process. It is a carcinogen, highly irritative, and flammable.

2.2 Air Quality Regulation

Federal and State Regulations

Federal and California Clean Air Acts

The federal Clean Air Act (CAA) governs air quality in the United States and is administered by the U.S. EPA at the federal level. Air quality in California is also governed by regulations under the California CAA, which is administered by CARB at the state level. At the regional and local levels, local air districts such as the BAAQMD typically administer the federal and California CAA. As part of implementing the federal and California CAA, the U.S. EPA and CARB have established ambient air quality standards (AAQS) for major pollutants at thresholds intended to protect public health. Table 1 summarizes the CAAQS and the NAAQS. The CAAQS are more restrictive than the NAAQS for several pollutants, including the one-hour standard for carbon monoxide, the 24-hour standard for sulfur dioxide, and the 24-hour standard for PM_{10}.

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “non-attainment.” Once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the federal CAA. Areas that have been redesignated to attainment are called maintenance areas. Some areas are unclassified, which means insufficient monitoring data are available; unclassified areas are considered to be in attainment. Table 1 presents the attainment status of the SFBAAB for each of the CAAQS and NAAQS. As shown therein, the SFBAAB is designated nonattainment for the federal standards for ozone and $PM_{2.5}$ and in nonattainment for the state standard for ozone, $PM_{2.5}$, and PM_{10}. The SFBAAB is designated unclassifiable or in attainment for all other federal and state standards (BAAQMD 2017a).

Table 1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Ambient Air Quality Standards		National Ambient Air Quality Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	0.09 ppm	N	–	–
Carbon Monoxide	8-Hour	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide	1-Hour	0.18 ppm	A	0.100 ppm	U/A
	Annual Arithmetic Mean	0.030 ppm	–	0.053 ppm	A
Sulfur Dioxide	24-Hour	0.04 ppm	A	0.14 ppm	A
	1-Hour	0.25 ppm	A	0.075 ppm	A
	Annual Arithmetic Mean	–	–	0.030 ppm	A
Particulate Matter – Small (PM_{10})	Annual Arithmetic Mean	20 µg/m³	N	–	–
	24-Hour	50 µg/m³	N	150 µg/m³	N
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	N	9 µg/m³	U/A
	24-Hour	–	–	35 µg/m³	N
Sulfates	24-Hour	25 µg/m³	A	–	–
Lead	Rolling 3-Month Average	–	–	0.15 µg/m³	A
	30-Day Average	1.5 µg/m³	A	–	–
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	U	–	–
Vinyl Chloride (Chloroethene)	24-Hour	0.010 ppm (26 µg/m³)	No information available	–	–
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	–	U	–	–

A = attainment; N = nonattainment; U = unclassified; ppm=parts per million; µg/m³=micrograms per cubic meter; PST = Pacific Standard Time

Source: BAAQMD 2017a and CARB 2020c

General Conformity Rule

The federal CAA requires that any federal agency taking an action, including funding an action, must make a determination that its action would not conflict with a State Implementation Plan (SIP). As part of the implementation of the federal CAA, the U.S. EPA has developed rules for transportation projects and non-transportation projects. The rule applicable to the project is referred to as the "general conformity rule." Therefore, the proposed action's conformity to the applicable SIP and consistency with the federal CAA General Conformity Rule is evaluated.

Section 176(c) of the federal CAA, as amended (42 United States Code [U.S.C.] 7401 et seq.) prohibits federal agencies from engaging in, supporting, providing financial assistance to, or issuing permits for activities, which do not conform to an applicable State Implementation Plan (SIP). The requirements for the preparation of SIPs, as provided in 40 Code of Federal Regulations (CFR) 51.

TITLE 40 CFR PART 51 SUBPART W AND 40 CFR PART 93 SUBPART B: GENERAL CONFORMITY

The federal CAA applies only to direct and/or indirect emissions caused by the actions that occur in areas designated as nonattainment or maintenance areas with respect to NAAQS. These regulations require an applicability analysis to determine whether the federal action must be supported by a conformity determination. Under the General Conformity Rule, the federal CAA applicability analysis is established for federal actions performed in locations with a history of non-compliance, as described below:

a. An area that is in nonattainment (i.e., has recorded violations of the NAAQS) for each criteria pollutant (such as ozone, carbon monoxide, and particulate matter) for which the area is designated nonattainment.
b. An area designated as nonattainment that was later re-designated by the Administrator of the USEPA as an attainment area and that is therefore required to develop a maintenance plan under section 7505a of 42 U.S.C. with respect to the specific pollutant(s) for which the area was previously designated nonattainment.

The applicability analysis involves calculation of the total emissions of criteria or precursor pollutants during the years of construction and operation of the federal action. A conformity determination must be made if the annual emissions exceed the rates specified in 40 CFR Part 93.153(b), referred to as *de minimis* emission level limit. If the applicable emissions exceed the *de minimis* emission level limit (minimum thresholds for which conformity determination must be performed pursuant to 40 CFR 93 section 153) outlined in the General Conformity Rule, then the federal agency would prepare a formal General Conformity Determination for public comment. Table 2 summarizes the *de minimis* emission level limits for nonattainment and maintenance areas.

Table 2 De Minimis Emission Levels Limits for Nonattainment and Maintenance Areas

Pollutant	De Minimis Emission Level Limit (tons/year)[1]
Nonattainment Areas	
Ozone (VOC and NO_X) – Serious	50
Ozone (VOC and NO_X) – Severe	25
Ozone (VOC and NO_X) – Extreme	10
Other ozone NAA's outside an ozone transport region	100
Other ozone NAA's inside an ozone transport region: VOC	50
Other ozone NAA's inside an ozone transport region: NO_x	100
SO_2 or NO_2	100
PM_{10} – Moderate	100
PM_{10} – Serious	70
$PM_{2.5}$ (direct emissions, SO_2, NO_x, VOC, and Ammonia) – Moderate	100
$PM_{2.5}$ (direct emissions, SO_2, NO_x, VOC, and Ammonia) – Serious	70
Pb	25
Maintenance Areas	
Ozone (VOC's)	
Ozone (VOC's) maintenance areas inside an ozone transport region	50
Ozone (VOC's) maintenance areas outside an ozone transport region	100
CO	100
PM_{10}	100
$PM_{2.5}$ (direct emissions, SO_2, NO_x, VOC, and Ammonia	100
Pb	25

NAA: nonattainment areas; VOC: volatile organic compounds; NO_x: nitrogen oxides; NO_2: nitrogen dioxide; CO: carbon monoxide; PM_{10}: particulate matter 10 microns or less in diameter; $PM_{2.5}$: particulate matter 2.5 microns or less in diameter; SO_2: sulfur dioxide; Pb: lead

Source: U.S. EPA 2021a

Regional and Local Regulations

Air Quality Management Plan

BAAQMD is responsible for assuring that the federal and State ambient air quality standards are attained and maintained in the Bay Area. BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities.

The BAAQMD adopted the 2017 Clean Air Plan (2017 Plan) as an update to the 2010 Clean Air Plan in April 2017. The 2017 Plan provides a regional strategy to protect public health and the climate. Consistent with the GHG reduction targets adopted by the state, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (BAAQMD 2017b). To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_X—and reduce transport of ozone and its precursors to neighboring air basins. The 2017 Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter TACs (BAAQMD 2017b).

BAAQMD Rules

The BAAQMD implements rules and regulations for emissions that may be generated by various uses and activities. The rules and regulations detail pollution-reduction measures that must be implemented during construction and operation of projects. Rules and regulations relevant to the project include the following:

- **Regulation 8, Rule 3 (Architectural Coatings):** This rule limits the quantity of volatile organic compounds that can be supplied, sold, applied, and manufactured within the BAAQMD region.

San Francisco Construction Dust Control Ordinance

San Francisco Health Code article 22B and San Francisco Building Code section 106.A.3.2.6 collectively constitute the Construction Dust Control Ordinance (adopted in July 2008). The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI).

2.3 Current Air Quality

The BAAQMD operates a network of air quality monitoring stations throughout the SFBAAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and to determine whether ambient air quality meets the NAAQS and CAAQS.

The SFBAAB monitoring station closest to the project site the San Francisco-Arkansas Street located at 10 Arkansas Street and approximately 0.5 miles west of the project site.

Table 3 indicates the number of days that each of the federal and state standards has been exceeded at these stations in each year from 2020 to 2022. The data indicate that the federal and state eight-hour ozone standards and state worst hour ozone standard were not exceeded. The NO_2 standards were exceeded for each year from 2020 to 2022. The state PM_{10} standard and the federal $PM_{2.5}$ standard were both exceeded only in 2020 (potentially from outlier events). As shown in Table 3, no other state or federal standards were exceeded at these monitoring stations.

Table 3 Ambient Air Quality – Monitoring Station Measurements

Pollutant	2020	2021	2022
Ozone (ppm), Worst 1-Hour[1]	0.088	0.074	0.070
Number of days above CAAQS (>0.09 ppm)	0	0	0
Number of days above NAAQS (>0.12 ppm)	0	0	0
Ozone (ppm), Worst 8-Hour Average	0.056	0.055	0.061
Number of days above CAAQS (>0.070 ppm)	0	0	0
Number of days above NAAQS (>0.070 ppm)	0	0	0
Nitrogen Dioxide (ppb), Worst 1-Hour	47.7	49.6	46.2
Number of days above CAAQS (>180 ppb)	0	0	0
Number of days above NAAQS (>100 ppb)	0	0	0
Particulate Matter <10 microns ($\mu g/m^3$), Worst 24 Hours	102.3	32.2	34.2
Number of days above CAAQS (>50 $\mu g/m^3$)	23	0	0
Number of days above NAAQS (>150 $\mu g/m^3$)	0	0	0
Particulate Matter <2.5 microns ($\mu g/m^3$), Worst 24 Hours	147.3	22.4	29.0
Number of days above NAAQS (>35 $\mu g/m^3$)	8	0	0

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard

Data from CARB at the nearest monitoring station with available data at 10 Arkansas Street in San Francisco

Source: CARB 2024

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect people most susceptible to respiratory distress, such as children under 14; persons over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore residences, schools, and hospitals. There are none of these sensitive receptors within 1,000 feet of the project site, but there are single-family residences approximately 90 feet west of the project site boundary. The project would also place new sensitive receptors on the project site (future residents of the proposed multi-family buildings).

2.4 Criteria for Evaluation and Methodology

NEPA *De Minimis* Emissions Levels

The proposed project would be funded by HUD; therefore, it must demonstrate general conformity with the Clean Air Act and the SIP pursuant to the NEPA requirements pursuant to Title 50 Section 24 CFR § 50.4(h). If the project's air quality management district or county is in non-attainment or in maintenance status for any criteria pollutants, then those pollutants must be identified, and the project's emissions be compared to the *de minimis* levels for the nonattainment and maintenance level pollutants. The project site is in the SFBAAB, which is in marginal nonattainment for O_3 (8-hour averaging time) NAAQS and moderate non-attainment for $PM_{2.5}$. It is also classified "maintenance" for CO. The region is in attainment or unclassified for all NAAQS. Therefore, only the following de minims thresholds shown in Table 4 would be applicable to the project. For the purposes of this analysis, the project would not be in general conformity to the SIP if project emissions (construction and operational emissions) would exceed the de minimis levels.

Table 4 *De Minimis* Levels for the San Francisco Bay Area Air Basin

Pollutant	SFBAAB Federal Attainment Status Designation	De Minimis Emission Rate (tons/year)[1]
Ozone (VOC and NO_X)	Nonattainment - Marginal [2]	100
$PM_{2.5}$	Nonattainment - Moderate	100
CO	Maintenance	100
NO_2	Unclassified/Attainment[2]	N/A
PM_{10}	Unclassified/Attainment[2]	N/A
SO_2	Unclassified/Attainment[2]	N/A
Lead	Unclassified/Attainment[2]	N/A

SFBAAB: San Francisco Bay Area Air Basin; N/A: not applicable (SFBAAB is not a designated nonattainment or maintenance area for these pollutants); VOC: volatile organic compounds; NO_x: nitrogen oxides; NO_2: nitrogen dioxide; CO: carbon monoxide; PM_{10}: particulate matter 10 microns or less in diameter; $PM_{2.5}$: particulate matter 2.5 microns or less in diameter; SO_2: sulfur dioxide

[1] Source: U.S. EPA 2024a
[2] Source: U.S. EPA 2024b

Regional Significance Thresholds

Table 5 shows the significance thresholds from BAAQMD's April 2022 *CEQA Guidelines* for construction and operational-related criteria air pollutant and precursor emissions being used for the purposes of this analysis. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. These thresholds are used for informational purposes only.

Table 5 BAAQMD Air Quality Significance Thresholds

Pollutant/ Precursor	Construction Emissions (average lbs/day)[1]	Operational Emissions (average lbs/day)	Operational Emissions (tpy)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10

[1] Note the thresholds for PM_{10} and $PM_{2.5}$ apply to construction exhaust emissions only.
lbs/day = pounds per day; tpy = tons per year; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases
Source: BAAQMD 2022

The BAAQMD has established the following thresholds for local community risks and hazards associated with TACs and $PM_{2.5}$ for assessing individual source impacts at a local level. Impacts would be significant if:

- The project would result in an increased cancer risk of > 10 in one-millions
- The project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 1.0 Hazard Index
- The project would result in an ambient $PM_{2.5}$ concentration increase of > 0.3 $\mu g/m^3$ annual average.

Excess cancer risks are defined as those occurring in excess of or above and beyond those risks that would normally be associated with a location or activity if toxic pollutants were not present. Non-carcinogenic health effects are expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level. These health risk thresholds are used to assess the impacts from TAC sources.

Methodology

Regional Criteria Pollutants

The projects' construction and operational emissions were estimated using the most recent version of the California Emissions Estimator Model (CalEEMod).[2] CalEEMod uses project-specific information, including the project's land uses, square footages for different uses, and location, to estimate a project's construction and operational emissions.

Modeled construction emissions from the project are conservatively based on CalEEMod defaults and include those generated by construction equipment used on-site and those generated from vehicle trips, such as worker and vendor trips. According to applicant-provided data, construction is expected to begin in October 2026 and last through November 2027 (14 months). The construction equipment list was based on CalEEMod defaults for projects of this type and size. It was assumed that project construction would comply with all applicable regulatory standards, including BAAQMD Regulation 8, Rule 3 (Architectural Coatings) for architectural coatings.

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions consist of emissions generated by vehicle trips to and from the project site. Emissions attributed to energy use include emissions from electricity consumption. Default rates and assumptions were used for the mobile and energy source emissions. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coatings. BAAQMD Regulation 8, Rule 3 was included for the operational architectural coatings.

Health Risk Assessment

The health risk assessment for nearby freeway impacts on the project is described below.

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[2] CalEEMod Version 2022.1.1.21 was the current version of the model at the time this study was performed.

EMISSIONS CALCULATIONS

The CARB's *Air Quality and Land Use Handbook* (2005) indicates that siting sensitive land uses within 500 feet of freeway and urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day may result in potential for adverse health effects associated with exposures to diesel particulate matter (CARB 2005). The project site is located within 500 feet of:

- Interstate 280 (I-280), and
- The southbound off-ramp to Pennsylvania Avenue.

The traffic volume for I-280 and the ramps were based on the California Department of Transportation (Caltrans) Performance Measurement System (PeMS) for the year 2023 for the freeway segment link nearest to the project site. The nearest northbound I-280 link is ID 402863, and the nearest southbound I-280 link is ID 400231, both for 18th Street / Pennsylvania. Although there is a southbound offramp present, Caltrans did not have PeMS data available for it, so the offramp vehicle trips were conservatively assumed to equal the southbound right lane freeway trips. This is assumed to result in a conservative overestimation of potential impacts. The PeMS data provides hourly flow rates either aggregated (as used for the freeway segments) or by individual lane (as applied for the offramp assumption). The flow rates are presented as total traffic and total truck traffic values by hour for each day of 2023. The data was then aggregated to obtain average hourly flow rates for 2023.

Diesel particulate matter (DPM) is the primary toxic air contaminant (TAC) of concern from mobile sources. Even though there are TACs associated with gasoline combustion from passenger vehicle traffic, health risk impacts are generally largely dominated from DPM emissions. Therefore, DPM was quantified using PM_{10} exhaust emission rates as the driver for potential cancer risk impacts. Similarly, $PM_{2.5}$ emissions were quantified for air dispersion modeling and comparison to the corresponding BAAQMD thresholds; however, it also included fugitive dust $PM_{2.5}$ emissions.

Emission rates were obtained using CARB's onroad emission rates from the Emission Factor (EMFAC)2021 model. Emission rates were obtained to match with the first year of each age bin associated with a health risk assessment (3rd Trimester, Ages 0-2, Ages 2-16, and Ages 16-30). The first operational year is expected to be 2027, with emission factors from this year used for the 3rd Trimester and 0-2 age bins. Year 2029 and year 2043 EMFAC2021 emission rates were used for the Ages 2-16 and Ages 16-30 age bins, respectably. Truck and passenger vehicle flow was estimated to grow at an annual rate of 1 percent and were estimated for each of the age bin years analyzed.

The speed limit on I-280 in the project site vicinity is 65 miles per hour (mph), so emission factors were reviewed for speeds between 55 and 65 mph. Because this segment of the freeway ends very close to the north, it was assumed the trucks will be traveling at 60 mph and passenger vehicles at 65 mph. Travel on the offramp was assumed to occur at 15 mph as vehicles slow to merge onto Pennsylvania Avenue, a residential street. [3]

With all of the above information, DPM and $PM_{2.5}$ emission rates (in grams per second [g/s]) were calculated for each hour for each age bin for the freeway segments identified. The maximum emission rates for each were identified for use in air dispersion modeling. Hourly emission rates

[3] Between 10 and 55 mph, emission rates generally decrease with increasing speed. Some vehicles may drive at speeds above or below the posted speed limit in low-traffic or congested conditions, respectively; however, data is not available on the percentage of time that motorists are either speeding or experiencing congested conditions on I-280. Therefore, the range of 50 to 65 mph reasonably captures the average speed of vehicles traveling along the roadway and is the most appropriate speed to use for estimating emissions.

were then divided by the maximum hourly emission rate to develop hourly “scalars” for use as variable emission rates in air dispersion modeling. This expresses lower emission rates at hours when vehicles are traveling in much smaller amounts, like the middle of the night, when winds and air dispersion are also typically lower.

Please refer to Appendix A for more information related to emissions calculations.

AIR DISPERSION MODELING

The American Meteorological Society/U.S. EPA air dispersion model, AERMOD, version 21112, was utilized to calculate the concentrations of source emissions at the project site. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources. The AERMOD model requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height.

The segments of I-280 within 1,000 feet and the ramps within 500 feet of the project site were modeled as line-volume sources in AERMOD. The line-volume source is a line segment with adjacently configured volume sources to represent vehicle travel along the mainlines or the offramp. The widths of the roadway segments were measured in Google Earth and for the mainlines an additional six meters were added to account for the roadway buffers. For the ramps, the buffers were manually measured. To determine the top of the plume height (i.e., highest point exhaust emissions would reach before drifting downwind) and release height, guidance from the U.S. EPA’s March 2012 Memorandum, *Haul Road Workgroup Final Report Submission to EPA-OAAPS* and the Caltrans guidance on *Height & Low Clearances*. For $PM_{2.5}$, each source was duplicated with a release height of zero meters to account for emissions of fugitive dust, like from brake wear and tire wear.

There is a Caltrain rail segment very close to the east of the project site. The rail segment is below the project site ground level due to the topography in the vicinity of the project site. The BAAQMD *Rail and Railyard Screening Data Layers* were used to determine ground-level impacts at the project site; AERMOD was used to determine the reduction in concentrations from ground-level to the second-floor residential units. Air dispersion modeling parameters were based on those performed in the CARB 2014 Roseville Rail Yard Study (CARB 2014a).

AERMOD provides X/Q (CHI/Q = chi/q = χ/q) values, which are the unitized concentrations estimated by the air quality model based on an emission rate of one gram per second. This was used for cancer risk calculations. Actual emission rates of $PM_{2.5}$ were input into AERMOD. Variable Emissions for “By Hour-Of-Day” were implemented using the scalars calculated as discussed above.

To account for the urban heat island effect, the AERMOD urban option was used with a population of 815,201 persons, which was based on the United States Census Bureau’s 2021 total population estimate for the City of San Francisco. Specific meteorology and terrain for the site were also included in the model using the nearest available meteorological data set for the San Francisco International Airport States Geological Survey Digital Elevation Model data for the project vicinity generated by the AERMOD software program. Additionally, the presence of buildings and other structures disturbs downwind air flow. However, building downwash is only calculated for point sources and is not appropriate to include in AERMOD for this HRA.

A total of 333 representative sensitive receptor locations were modeled for the project site. Health risks at the sensitive receptors were analyzed on each of the nine (9) floors of the proposed residential building. A flagpole height (i.e., the height that a receptor is above the ground) of 1.5 meters was used for the ground-floor receptors (BAAQMD 2020b) and each subsequent residential floor elevation was obtained from site plans with the additional breathing height of 1.5 meters applied.

Please refer to Appendix B for more information related to air dispersion modeling.

RISK ASSESSMENT CALCULATIONS

The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, and a more extended exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a more extended period. According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period. Health risk was calculated using in-house spreadsheets and is consistent with the *OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015) and the BAAQMD *Health Risk Assessment Modeling Protocol* (BAAQMD 2020b).

Outputs from the air dispersion modeling were used with the emission rates developed from the PeMS data to determine ground level concentrations of DPM. Exposure durations for each age bin were determined. The exposure durations, in conjunction with the calculated ground level concentrations, inhalation dose risk factors and cancer potency factors DPM were used to calculate 30-year lifetime health risk as the modeled receptors. The maximally exposed individual resident (MEIR) is described below.

$PM_{2.5}$ concentrations are modeled and then compared to the BAAQMD threshold for significance determinations. Figure 3 depicts the sources (I-280 and ramps), sensitive receptors, and location of the MEIR to unmitigated $PM_{2.5}$ impacts. Additional post-processing was performed to account for the removal efficiency of DPM and $PM_{2.5}$ via MERV filtration to calculate mitigated health risk for cancer, chronic and $PM_{2.5}$ impacts.

Please refer to Appendix B for more information related to health risk assessment calculations.

Figure 3 Map of Sources and Receptors

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23-15338 BIO
Fig 2 Project Location

2.5 Impact Analysis

Impact AQ-1 THE PROPOSED ACTION WOULD NOT EXCEED THE APPLICABLE *DE MINIMIS* LEVELS AND WOULD BE IN GENERAL CONFORMITY.

General Conformity Assessment

Construction of the project would have the potential to generate air pollutant emissions. Operation of the residential buildings would have long-term emissions due to mobile, energy, and area sources. Table 6 presents the total annual criteria air pollutants that would be generated during construction and operation of the proposed action. The maximum project emissions are compared to their respective *de minimis* levels. As shown in Table 6, the maximum annual emissions from the proposed action would be below the applicable *de minimis* levels for ozone, $PM_{2.5}$, and CO. Thus, the proposed action conforms to the SIP, and a General Conformity determination is not necessary.

Table 6 Total Annual Emissions for Proposed Action

	Estimated Annual Emissions (tpy)					
Year	ROG	NO_X	$PM_{2.5}$	CO	SO_x	PM_{10}
Construction						
2026	**<1**	1	**<1**	1	**<1**	**<1**
2027	1	1	**<1**	2	**<1**	**<1**
Operation						
2027	**<1**	14	3	1	5	1
Maximum Annual Emissions	**1**	**14**	**3**	**2**	**<1**	**1**
De Minimis Level	100	100	100	100	–	–
De Minimis Level Exceeded?	No	No	No	N/A	N/A	N/A

tpy: tons per year; ROG: reactive organic gases; NO_X: nitrogen oxides; PM_{10}: particulate matter with a diameter of 10 microns or less; CO: carbon monoxide; SO_x: sulfur oxide; $PM_{2.5}$: particulate matter with a diameter of 2.5 or less; N/A = not applicable

Source: See CalEEMod worksheets in Appendix A. Information provided in the Detailed Report.

BAAQMD Regional Thresholds

For informational purposes only, the construction and operational project emissions are compared to the BAAQMD threshold for criteria pollutants.

Table 7 summarizes the maximum daily construction emissions. Table 8 summarizes the maximum daily and annual emissions from operation. Neither the construction nor the long-term operational emissions exceed the BAAQMD thresholds. Since project emissions would not exceed BAAQMD thresholds for construction or operation, the project would not violate an air quality standard or result in a cumulatively considerable net increase in criteria pollutants.

Table 7 Project Construction Average Daily Emissions

	Average Daily Emissions (lbs/day)					
	ROG	NO_X	CO	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)	SO_X
Average Daily Emissions	**5**	**6**	**9**	**<1**	**<1**	**<1**
BAAQMD Thresholds (average daily emissions)	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

N/A = not applicable; no BAAQMD threshold for CO or SO_X

Source: See CalEEMod worksheets in Appendix A. Information provided in the Detailed Report.

Table 8 Project Operational Average Daily and Annual Emissions

	Average Daily Emissions (lbs/day)					
Sources	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Mobile	2	1	15	3	1	**<1**
Area	3	**<1**	3	**<1**	**<1**	**<1**
Energy	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
Total Daily Emissions	**5**	**1**	**18**	**3**	**1**	**0**
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A
Annual Emissions	**1**	**<1**	**3**	**<1**	**<1**	**1**
BAAQMD Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

N/A = not applicable; no BAAQMD threshold for CO or SO_X

Source: See CalEEMod worksheets in Appendix A. Information provided in the Detailed Report.

The BAAQMD does not have quantitative thresholds for fugitive dust emissions during construction. Instead, the BAAQMD recommends Best Management Practices (BMPs) be implemented to reduce fugitive dust emissions. San Francisco's Construction Dust Control Ordinance requires a number of fugitive dust control measures to ensure that construction projects do not result in visible dust. The project would comply with these measures.

Impact AQ-2 THE PROPOSED ACTION WOULD INVOLVE THE SITING OF NEW SENSITIVE RECEPTORS IN PROXIMITY TO AN EXISTING HIGHWAY AND PERMITTED STATIONARY SOURCES OF TACS; HOWEVER, THIS WOULD NOT RESULT IN FUTURE RESIDENTS OF THE PROJECT BEING EXPOSED TO HEALTH RISKS IN EXCESS OF BAAQMD THRESHOLDS.

Toxic Air Contaminants

Construction Impacts

Construction-related activities would result in temporary project-generated DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. Generation of DPM, which was identified as a TAC by CARB in 1998, from construction projects typically occurs in a single area for a short period. The proposed project's construction would occur in phases over approximately 14 months with sensitive receptors located approximately 90 feet to the west. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, and a more extended exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a more extended period.

The proposed project would be consistent with the applicable AQMP requirements and control strategies intended to reduce emissions from construction equipment and activities. The proposed project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, based on the short-term nature of project construction activities and the minimal amount of emissions relative to the significance thresholds presented above, it is assumed that project construction would not result in potentially significant TAC emissions.

Operational Impacts

CARB's *Air Quality and Land Use Handbook, A Community Health Perspective*, provides land use advisory recommendations when siting new sensitive receptors and sensitive land uses. As described in Section 2.1.4, *Current Air Quality*, sensitive receptors include children, the elderly, and those with pre-existing serious health problems. Sensitive land uses include schools, daycares, residential communities, nursing homes, parks, and hospitals. This handbook recommends that new sensitive uses not be sited:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day
- Within 1,000 feet of a major service and maintenance rail yard
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries
- Within 300 feet of any dry-cleaning operation (for operations with two or more machines, provide 500 feet)
- Within 300 feet of a large gas station (defined as facility with a throughout of 3.6 million gallons per year or greater).

The project is primarily a residential development that would site new sensitive receptors within the area while also being sited near other sensitive uses. The project itself is not anticipated to have operational activities that would result in elevated levels of TAC emissions (like from diesel generators or frequent haul truck trips).

Cumulative Impacts

There are no ports, petroleum refineries, dry cleaning operations, or large gas stations located within 1,000 feet of the project site. However, the project is within 500 feet of the I-280 freeway and the Caltrain Express route. Additionally, BAAQMD permitted stationary sources within 1,000 feet of the project site were identified. Therefore, a cumulative analysis of I-280, the Caltrain and the permitted stationary sources was conducted for the project.

INTERSTATE 280 HEALTH RISK ASSESSMENT

Health risks for 333 sensitive receptor locations distributed throughout the project site were modeled. Each of these receptors represents a proposed location of residential structures and includes first through ninth floor elevations for their respective residential structures.

Cancer, acute, and chronic risks were determined for a 30-year residency scenario at all receptor locations. The MEIR for each building was identified at the ground-level at a flagpole height of 1.5 meters. Risk levels for the MEIRs at each residential building are shown in Table 9. Figure 3 in Section 3.1, *Methodology*, shows the location of the MEIR for cancer, chronic, and acute risk. The MEIR for the project site would be located on the first floor of the residential building. Refer to Appendix B for more detailed accounting of health risks at each receptor per pollutant of concern.

As shown in Table 9, the MEIRs would be exposed to a 30-year excess cancer risk that exceeds the BAAQMD recommended health risk criteria of 10 per million (BAAQMD 2022). Therefore, mitigation would be required to reduce impacts below the BAAQMD threshold. The chronic hazard indices would be below the hazard index value of 1.0.

Table 9 Potential Health Risks from Interstate 280 at the MEIRs

Unmitigated Scenario	249 Pennsylvania Ave MEIR[1,2]
Cancer Risk	
Incremental Excess Cancer Risk	17 per million
BAAQMD Threshold	10 per million
Threshold Exceeded?	**Yes**
$PM_{2.5}$	
Annual $PM_{2.5}$ Concentration	0.2 µg/m^3
BAAQMD Threshold	0.3 µg/m^3
Threshold Exceeded?	**No**
Hazard Index (Chronic Risk)	
Hazard Index	<0.1
BAAQMD Threshold	1
Threshold Exceeded?	**No**

[1] Based on 30-year resident exposure.

[2] The MEIR for cancer, chronic, and acute risk is located on the 4th floor of the building.

$PM_{2.5}$ concentrations were obtained from the AERMOD outputs.

See Appendix B for model outputs.

Mitigation Measure

AQ-1 Indoor Air Filtration

The mitigation actions listed below shall apply to all new residential units at the project:

- Forced air mechanical ventilation with fresh air filtration using filter screens on outside air intake ducts must be provided for all residential units proposed on the site. The filter screens must have a minimum efficiency reporting value (MERV) 13 rating per Title 24 requirements. Air intakes must be located on the side of the building facing away from Interstate 280 and windows facing Interstate 280 cannot be capable of opening unless warranted to comply with California Building Code requirements for emergency egress.

- For individual residential units with separate HVAC systems, a brochure notifying the future residents of the need for maintaining the filter screens and keeping windows closed to ensure adequate fresh air filtration must be prepared and provided at the time of lease signing. In addition, a notice of the diesel particulates risk hazard and the need for screen maintenance must be recorded in the property title and included with lease agreements.
- Install high efficiency ceiling fans.
- Windows and doors must be fully weatherproofed with caulking and weather-stripping that is rated to last at least 20 years.

Implementation of Mitigation Measure AQ-1

Table 10 shows the risks and hazards from the TAC sources adjusted to include MERV 13 filtration pursuant to Mitigation Measure AQ-1. MERV 13 filtration is assumed to have an 85 percent particulate filtration efficiency for particle sizes 1.0-3.0 microns (i.e., PM2.5) (US EPA 2023). As shown in Table 10, with MERV 13 filtration the cancer risk and $PM_{2.5}$ concentration from I-280 and offramp would be reduced below the BAAQMD single-source health risk thresholds. All other hazards would be further reduced with implementation of MERV 13 filtration.

Table 10 Mitigated Potential Health Risks from Interstate 280 at the MEIRs

Mitigated Scenario	249 Pennsylvania Ave MEIR[1,2]
Cancer Risk	
Incremental Excess Cancer Risk	2.5 per million
BAAQMD Threshold	10 per million
Threshold Exceeded?	**No**
$PM_{2.5}$	
Annual $PM_{2.5}$ Concentration	<0.1 µg/m^3
BAAQMD Threshold	0.3 µg/m^3
Threshold Exceeded?	**No**
Hazard Index (Chronic Risk)	
Hazard Index	<0.1
BAAQMD Threshold	1
Threshold Exceeded?	**No**

[1] Based on 30-year resident exposure.
[2] The MEIR for cancer, chronic, and acute risk is located on the 4th floor of the building.
See Appendix B for model outputs.

BAAQMD PERMITTED STATIONARY SOURCES AND RAIL SOURCES

There were six permitted emission sources identified within 1,000 feet of the project site using BAAQMD's *Permitted Stationary Source Risk and Hazards* mapping tool (BAAQMD 2023a). Two of the facilities were identified as having generators, while four had "no data." Of the "no data" sources, one had zero risk impacts. The screening health risks were adjusted with the BAAQMD's distance adjustment multipliers. The nearby Caltrain cancer, chronic and $PM_{2.5}$ impacts were obtained for each of our project receptor points from the Bay Area Metro CEQA Rail Screening tool, available from the BAAQMD (BAAQMD 2023b). These screening impacts are very conservative and are expected to reduce over time with Caltrain's commitment to electrification (Caltrain 2024).

Table 11 lists the risk from I-280 as well as the nearby permitted stationary and rail sources. Implementation of Mitigation Measure AQ-1 was included for the risks and hazards associated with the nearby sources. Risks from all sources of external TAC would be lower with the installation of filtration at the residential buildings. The health risks and $PM_{2.5}$ concentrations are compared to the BAAQMD single-source threshold for TAC and the cumulative sum of health risk impacts are compared to the BAAQMD cumulative source-threshold.

As shown in Table 11, all sources would not exceed the cancer risk, $PM_{2.5}$, or non-cancer risk at the project site. Furthermore, the cumulative total from the TAC sources would not exceed the BAAQMD cumulative source thresholds for cancer risk, $PM_{2.5}$ concentration, nor chronic hazard index. Additionally, impacts from the nearby rail sources are expected to continue to reduce over time with Caltrain's commitment to electrification. Therefore, risk and hazard impacts to future residents at 249 Pennsylvania Avenue from individual sources would be below applicable thresholds and not pose substantial health risk to the new receptors. See Appendix C for the BAAQMD permitted stationary source report and rail impacts.

Table 11 Individual and Cumulative Cancer Risk and Particulate Matter Concentrations at 249 Pennsylvania Avenue

Description	Cancer Risk (per million)	$PM_{2.5}$ Concentration (µg/m3)	Increased Non-Cancer Risk (Chronic Hazard Index)
Interstate 280[1]	2.5	<0.1	<0.1
Nearby Permitted Stationary Sources[2]	2.4	<0.1	0.1
Nearby Rail Sources[3]	7.5	0.13	<0.1
BAAQMD Individual Source Screening Threshold	10	0.3	1
Combined Total	**12.4**	**0.1**	**0.1**
Individual Source Threshold Exceeded?	No	No	No
BAAQMD Cumulative Screening Threshold	100	0.8	10
Cumulative Threshold Exceeded?	No	No	No

[1]Mitigated risk and hazards from I-280 and associated ramps include implementation of Mitigation Measure AQ-1

[2]Nearby stationary source risk impacts were obtained from BAAQMD Health Risk Calculator Tool and Stationary Source Screening Map.

[3] Nearby rail source risk impacts were obtained from the BAAQMD Rail and Railyard Screening Data Layers tool, adjusted for residential unit 2nd floor elevations.

Source: Appendix C

Greenhouse Gas Emissions

2.6 Environmental and Regulatory Setting

Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates from historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed a high degree of confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century (IPCC 2014a).

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (U.S. EPA 2020).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its global warming effect is 28 times greater than CO_2 on a molecule per molecule basis (IPCC 2014b).[4]

[4] The IPCC's (2014b) *Fifth Assessment Report* determined that methane has a GWP of 28. However, modeling of GHG emissions was completed using the California Emissions Estimator Model version 2016.3.2, which uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*.

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity (Forster et al. 2007). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

2.7 Greenhouse Gas Emissions Inventory

Global Emissions Inventory

In 2015, worldwide anthropogenic GHG emissions totaled 47,000 million metric tons (MMT) of CO_2e, which is a 43 percent increase from 1990 GHG levels. Specifically, 34,522 MMT of CO_2e of CO_2, 8,241 MMT of CO_2e of CH_4, 2,997 MMT of CO_2e of N_2O, and 1,001 MMT of CO_2e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed three percent. These sources account for approximately 96 percent (U.S. EPA 2022f).

United States Emissions Inventory

U.S. GHG emissions were 6,347.7 MMT of CO_2e in 2021 or 5,593.5 MMT CO_2e after accounting for sequestration. Emissions increased by 6.8 percent from 2020 to 2021. The increase from 2020 to 2021 reflects the was driven by an increase in CO_2 emissions from fossil fuel combustion which increased 7 percent relative to previous years and is primarily due to the economic rebounding after the COVID-19 Pandemic. In 2020, the energy sector (including transportation) accounted for 81 percent of nationwide GHG emissions while agriculture, industrial and waste accounted for approximately 10 percent, 6 percent, and 3 percent, respectively. (U.S. EPA 2023e).

California Emissions Inventory

Based on CARB California Greenhouse Gas Inventory for 2000-2021, California produced 381.3 MMT of CO_2e in 2021. The major source of GHG emissions in California is the transportation sector, which comprises 39 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 22 percent of the state's GHG emissions while electric power accounts for approximately 11 percent (CARB 2024). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the state of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO_2e. The annual 2030 statewide target emissions level is 260 MT of CO_2e (CARB 2017).

Local Emissions Inventory

Based on the latest GHG inventory report from the City of San Francisco, 2020 local emissions equaled 1,774,899 MT of CO_2e from transportation, 174,855 MT from municipal sources, 255,763

MT from landfilled organics, 1,784,400 MT from buildings and 84,647 MT from agriculture. (City of San Francisco 2024). This corresponds to a 48% reduction from 1990 emission rates of GHGs.

2.8 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1.0°C higher than the average GMST over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2020). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014a and 2018).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them (California Natural Resources Agency 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that the average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 3.3 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise of 0.25 to 0.94 meter by 2100 (IPCC 2018). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California’s water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the country’s vegetables and two-thirds of the country’s fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year that certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

2.9 Regulatory and Legal Setting

The following regulations and case law address both climate change and GHG emissions.

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the U.S. EPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

California Advanced Clean Cars Program

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, the U.S. EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the U.S. EPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as “LEV (Low Emission Vehicle) III GHG,” regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The “California Global Warming Solutions Act of 2006,” (AB 32), outlines California’s major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 million metric tons (MMT of CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan’s approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB’s climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state’s longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014b).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100. The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

The California Climate Crisis Act (Assembly Bill 1279)

AB 1279 was passed on September 16, 2022, and declares the State would achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045. In addition, achieve and maintain net negative greenhouse gas emissions and ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels. The bill would require updates to the scoping plan (once every five years) to implement various policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies.

2022 Update to the Climate Change Scoping Plan

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022c). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action no natural and working lands (NWL) to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's NWL and using a variety of mechanical approaches" (CARB 2022c). Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of NWL to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in NWL and explores how NWL contributes to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet our GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline California Environmental Quality Act (CEQA) processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Association of Bay Area Governments (ABAG) was assigned targets of a 3 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 6 percent reduction in per capita GHG emissions from passenger vehicles by 2035.

Senate Bill 1383

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statues of 2016) requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Building Standards Code

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2022 Title 24 standards are the applicable building energy efficiency standards for the proposed Project because they became effective on January 1, 2023 (CEC 2024).

PART 11 – CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards applicable to the project require:

- 20 percent reduction in indoor water use relative to specified baseline levels;[5]
- Waste Reduction:
  - Non-residential: Reuse and/or recycling of 100 percent of trees, stumps, rocks, and associated vegetation soils resulting from primary land clearing;
- Inspections of energy systems to ensure optimal working efficiency;

[5] Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water-reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

- Low pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Electric Vehicle (EV) Charging for New Construction:[6]
  - Non-residential land uses shall comply with the following EV charging requirements based on the number of passenger vehicle parking spaces:
    - 0-9: no EV capable spaces or charging stations required;
    - 10-25: 4 EV capable spaces but no charging stations required;
    - 26-50: 8 EV capable spaces of which 2 must be equipped with charging stations;
    - 51-75: 13 EV capable spaces of which 3 must be equipped with charging stations;
    - 76-100: 17 EV capable spaces of which 4 must be equipped with charging stations;
    - 101-150: 25 EV capable spaces of which 6 must be equipped with charging stations;
    - 151-200: 35 EV capable spaces of which 9 must be equipped with charging stations; and
    - More than 200: 20 percent of the total available parking spaces of which 25 percent must be equipped with charging stations;
  - on-residential land uses shall comply with the following EV charging requirements for medium- and heavy-duty vehicles: warehouses, grocery stores, and retail stores with planned off-street loading spaces shall install EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s), or subpanel(s) at the time of construction based on the number of off-street loading spaces as indicated in Table 5.106.5.4.1 of the California Green Building Standards;
  - Bicycle Parking:
  - Non-residential short-term bicycle parking for projects anticipated to generate visitor traffic: permanently anchored bicycle racks within 200 feet of visitor entrance for 5 percent of new visitor motorized vehicle parking spaces with a minimum of one 2-bike capacity rack; and/or
  - Non-residential buildings with tenant spaces of 10 or more employees/tenant-occupants: secure bicycle parking for 5 percent of the employee/tenant-occupant vehicle parking spaces with a minimum of one bicycle parking facility.
- Shade Trees (Non-Residential):
  - Surface parking: minimum No. 10 container size or equal shall be installed to provide shade over 50 percent of the parking within 15 years (unless parking area covered by appropriate shade structures and/or solar);
  - Landscape areas: minimum No. 10 container size or equal shall be installed to provide shade of 20 percent of the landscape area within 15 years; and/or
- Hardscape areas: minimum No. 10 container size or equal shall be installed to provide shade of 20 percent of the landscape area within 15 years (unless covered by applicable shade structures and/or solar or the marked area is for organized sports activities).

[6] EV Capable = a vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways to support EV charging; EV-ready = a vehicle space which is provided with a branch circuit and any necessary raceways to accommodate EV charging stations, including a receptacle for future installation of a charger (see 2022 California Green Building Standard Code, Title 24 Part 11 for full explanation of mandatory measures, including exceptions).

The voluntary Tier I and Tier II standards require:

- Tier I:
  - Stricter energy efficiency requirements;
  - Stricter water conservation requirements for specific fixtures;
  - minimum 65 percent reduction in construction waste with third-party verification, Minimum 10 percent recycled content for building materials;
  - Minimum 20 percent permeable paving;
  - Minimum 20 percent cement reduction;
- Tier II:
  - Stricter energy efficiency requirements,
  - Stricter water conservation requirements for specific fixtures;
  - Minimum 75 percent reduction in construction waste with third-party verification,
  - Minimum 15 percent recycled content for building materials;
  - Minimum 30 percent permeable paving; and/or
  - Minimum 25 percent cement reduction.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989, as modified by AB 341 in 2011, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995 through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued EO N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035;
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020)

Adopted on September 16, 2022, SB 1020 creates clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all state agencies by 2035. This bill states that to achieve this, carbon emissions should not be increased elsewhere in the western grid.

2.10 Criteria for Evaluation and Methodology

The Council on Environmental Quality (CEQ) rescinded the 2019 *Draft NEPA Guidance on Consideration of Greenhouse Gas Emissions* and on January 9, 2023, issued the interim NEPA Guidance on GHG and Climate Change. This document builds upon the 2016 guidance document to provide greater clarity and more consistency with how agencies address climate change in NEPA reviews.

Like the 2016 guidance, the 2023 interim guidance recommends the quantification of a proposed action's projected direct and indirect GHG emissions using available data and GHG quantification tools suitable for the proposed action. When quantifying the GHG emissions is infeasible or tools are not reasonably available then a qualitative analysis is acceptable, but the CEQ cautions against an in-depth analysis because climate change impacts are not attributable to a single action. Instead, it is recommended that the "rule of reason" and the "concept of proportionality" be used instead to evaluate GHG emissions. As described in the guidance, the rule of reason is inherent in NEPA and the CEQ regulations, allowing agencies to determine how to consider an environmental effect and prepare an analysis based on available information and expertise. Under the concept of proportionality, agencies should discuss impacts in proportion to their potential significance. In addition, when discussing GHG emissions the CEQ guidance allows agencies to include relevant approved federal, regional, state, tribal, or local plans, policies, or laws for GHG emissions to showcase if the proposed action's GHG emissions are consistent with such plans or laws. This approach provides more policy context for GHG emissions. The guidance does not establish a significance threshold or determination level for GHG emissions. The 2023 interim guidance includes recommendations to agencies to consider reasonable alternatives that would make the actions and affected communities more resilient to the effects of a changing climate and to incorporate environmental justice considerations into their analyses of climate-related effects.

Therefore, the annual GHG emissions generated by the proposed action were quantified using CalEEMod and compared to BAAQMD thresholds. Additionally, a qualitative assessment of the proposed action and its consistency with SB 32 was included by comparing the project to CARB's 2022 Scoping Plan. The BAAQMD threshold and CARB 2022 Scoping Plan are to show that GHG emissions are relevant to local and statewide plans that are aiming to reduce GHG emissions in California, which aligns with the national efforts to reduce GHG emissions across the United States.

BAAQMD

According to Table 3-2 in the BAAQMD 2022 *CEQA Air Quality Guidelines* (2022), a project would be less that significant if it meets A or B. The project-level thresholds of significance for climate impacts were adopted by the Air District's Board of Directors on April 20, 2022.

A. Projects must include, at a minimum, the following project design elements:

1. Buildings

    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

    b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

a. The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory: Evaluating Transportation Impacts in CEQA:

i. Residential projects: 15 percent below the existing VMT per capita

ii. Office projects: 15 percent below the existing VMT per employee

iii. Retail projects: no net increase in existing VMT

b. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Methodology

GHG emissions associated with project construction and operation were estimated using CalEEMod, with the assumptions described under Section 2.4, *Criteria for Evaluation and Methodology*. GHG emissions were modeled in the year 2027 to present the most conservative operational year. Emissions of GHGs are expected to reduce over time as technologies improve, especially related to mobile emissions.

2.11 Impact Analysis

Impact GHG-1 THE PROPOSED ACTION WOULD GENERATE TEMPORARY AND LONG-TERM INCREASES IN GHG EMISSIONS, BUT THE PROJECT WOULD BE CONSISTENT WITH THE 2022 SCOPING PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

BAAQMD CEQA Air Quality Guidelines

The project is planned to be 100 percent electric with no natural gas usage. The project is not anticipated to result in any wasteful, inefficient, or unnecessary energy usage. Therefore, the project is expected to meet the project design elements under Criteria A, discussed above, and would be less than significant.

Proposed Action Generated Greenhouse Gas Emissions

The following section summarizes the project's GHG emissions for informational purposes.

Construction Emissions

Project-related construction emissions are confined to a relatively short period in relation to the overall life of the project. Project construction would result in approximately 155 MT of CO_2e in year 2026 and 338 MT of CO_2e in year 2027, for a total of 494 MT of CO_2e.[7]

[7] Numbers may not add up due to rounding.

Operational Emissions

Table 12 shows GHG emissions associated with operation of the proposed project. As shown therein, the project would generate approximately 632 MT of CO_2e per year.

Table 12 Operational Annual Emissions

Emission Source	Annual Emissions (MT CO_2e)
Mobile	543
Area	3
Energy	49
Water	8
Waste	29
Refrigerants	0
Total Emissions	**632**

Source: See CalEEMod Detailed Report worksheets in Appendix A.

2022 Scoping Plan Consistency

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Pursuant to the SB 32 goal, the 2022 Scoping Plan was created to assess the goals and measures for the state to achieve the reductions from the 2017 Scoping Plan. The 2022 Scoping Plan's strategies that are applicable to the proposed project include reducing fossil fuel use, energy demand, and vehicle miles traveled (VMT); maximizing recycling and diversion from landfills; and increasing water conservation. The projects would be served by Pacific Gas and Electric, which is required to increase its renewable energy procurement in accordance with SB 100 targets.

The project site is approximately 0.4 mile (walking distance) north of the Caltrain 22nd Street Station. Residents can travel to the station on foot or bike. Additionally, there are multiple nearby bus stops for AC Transit bus routes. These factors would reduce future residents' VMT and associated fossil fuel usage. Therefore, the project would be consistent with the 2022 Scoping Plan and emission reduction targets per SB 32.

3 References

Bay Area Air Quality Management District (BAAQMD). 2016. Planning Healthy Places A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning. https://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en (accessed April 2024).

_______. 2022. CEQA Thresholds and Guidelines Update. San Francisco, CA. April 2022. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines (accessed April 2024).

_______. 2017b. Final 2017 Clean Air Plan. San Francisco, CA. April 19, 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed April 2024).

_______. 2020a. Diesel Free by '33 Why Replacing Diesel is a Public Health Priority Presentation. September. https://www.baaqmd.gov/~/media/dieselfree/workshops/090920/diesel_health_impacts_overview-pdf.pdf?la=en (accessed April 2024).

_______. 2020b. BAAQMD Health Risk Assessment Modeling Protocol. December. https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?la=en (accessed April 2024).

_______. 2023a. Permitted Stationary Source Risk and Hazards. Last updated April 10, 2023 https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65 (accessed April 2024).

_______. 2023b. Rail and Railyard Screening Data Layers. Last updated January 2023. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling (accessed April 2024).

California Air Resources Board (CARB). 1998. Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant: Part A. https://www.arb.ca.gov/toxics/dieseltac/part_a.pdf (accessed April 2024).

_______. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpfinal.pdf (accessed April 2024).

_______. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. https://www.arb.ca.gov/ch/handbook.pdf (accessed April 2024)

_______. 2008. Climate Change Scoping Plan. Sacramento, CA. December 2008.

_______. 2011. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles. December 7, 2011. http://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf (accessed April 2024).

_______. 2014a. Roseville Rail Yard Study. October 2004. https://ww2.arb.ca.gov/resources/documents/roseville-railyard-study (accessed April 2024)

_______. 2014b. AB 32 Scoping Plan Website. Updated June 2014. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm (accessed April 2024).

_______. 2017. California's 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (accessed April 2024).

_______. 2020a. "Inhalable Particulate Matter and Health (PM2.5 and PM10). https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health#:~:text=Short%2Dterm%20exposures%20to%20PM10,to%20years)%20exposure%20to%20PM2 (accessed April 2024).

_______. 2020b. "Overview: Diesel Exhaust & Health." https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health (accessed April 2024).

_______. 2020c. "Summaries of Historical Area Designations for State Standards." https://ww2.arb.ca.gov/our-work/programs/state-and-federal-area-designations/state-area-designations/summary-tables (accessed April 2024).

_______. 2021. Top 4 Summary. https://www.arb.ca.gov/adam/topfour/topfour1.php (accessed April 2024).

_______. 2024. "Current California Greenhouse Gas Emission Inventory – 2000-2021 GHG Inventory (2023 Edition). https://ww2.arb.ca.gov/ghg-inventory-data (accessed April 2024).

California Climate Change Center (CCCC). 2006. Climate Scenarios for California.

California Department of Transportation (Caltrans). 2024. Height & Low Clearances. https://dot.ca.gov/programs/traffic-operations/legal-truck-access/height#:~:text=No%20vehicle%20or%20load%20shall,of%2014%20feet%2C%203%20inches (accessed April 2024)

California Department of Food and Agriculture. 2020. "California Agricultural Production Statistics." https://www.cdfa.ca.gov/statistics/ (accessed April 2024).

California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf (accessed April 2024).

California Energy Commission (CEC). 2024. "2022 Building Energy Efficiency Standards." Effective January 1, 2023. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency#:~:text=The%202022%20Energy%20Code%20encourages,strengthens%20ventilation%20standards%2C%20and%20more. (accessed April 2024).

California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf (accessed April 2024).

Caltrain. (Electrification) Program Overview. https://www.caltrain.com/projects/electrification (accessed April 2024).

City of San Francisco. 2024. City Performance Scorecards; Greenhouse Gas Emissions. https://sfgov.org/scorecards/environment/greenhouse-gas-emissions (accessed April 2024)

Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz, and R. Van Dorland. 2007. Changes in Atmospheric Constituents and in Radiative Forcing. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf (accessed April 2024)

Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

______. 2014a. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

______. 2014b. Climate Change 2014 Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri, and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

______. 2018. Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. https://www.ipcc.ch/sr15/ (accessed April 2024).

National Aeronautics and Space Administration. 2020. "Global Climate Change – Vital Signs of the Planet – Sea Level." https://climate.nasa.gov/vital-signs/sea-level/ (accessed April 2024).

National Oceanic and Atmospheric Administration. 2020. "Global Climate Report for Annual 2019." State of the Climate. January 2020. https://www.ncdc.noaa.gov/sotc/global/201813 (accessed April 2024).

Office of Environmental Health Hazard Assessment. February 2015. OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf (accessed April 2024)

Parmesan, C. August 2006. Ecological and Evolutionary Responses to Recent Climate Change.

Singer, B.C., W.W. Delp, D.R. Black, and I.S. Walker. 2016. Measured performance of filtration and ventilation systems for fine and ultrafine particles and ozone in an unoccupied modern California house. Indoor Air. LBNL-1006961. https://escholarship.org/content/qt7x86h6ff/qt7x86h6ff.pdf (accessed July 2021).

State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed July 2021).

United States Climate Data. 20241. Climate San Francisco – California. N.d. https://www.usclimatedata.com/climate/oakland/california/united-states/usca2500 (accessed April 2024).

United States Environmental Protection Agency (U.S. EPA). Fox, Tyler. March 2012. Haul Road Workgroup Final Report Submission to EPA-OAAPS. https://www.epa.gov/sites/default/files/2020-10/documents/haul_road_workgroup-final_report_package-20120302.pdf (accessed April 2024)

______. 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, External Review Draft. https://www3.epa.gov/ttn/naaqs/standards/pb/data/010913_pb-draft-pa.pdf (accessed April 2024).

______. 2021a. De Minimis Tables. N.d. https://www.epa.gov/general-conformity/de-minimis-tables (accessed July 2021).

______. 2021b. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Last updated March 21, 2024. https://www3.epa.gov/airquality/greenbook/anayo_ca.html (accessed April 2024).

______. 2023. Indoor Air Quality (IAQ) What is a MERV rating? https://www.epa.gov/indoor-air-quality-iaq/what-merv-rating (accessed April 2024)

World Meteorological Organization. 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013. https://library.wmo.int/records/item/51134-a-summary-of-current-climate-change-findings-and-figures?offset=2178 (accessed April 2024).

______. 2020. "Greenhouse Gases." https://wmo.int/topics/greenhouse-gases (accessed April 2024).

Appendix A

CalEEMod Outputs

249 Pennsylvania Avenue Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	249 Pennsylvania Avenue
Construction Start Date	10/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	2.60
Location	249 Pennsylvania Ave, San Francisco, CA 94107, USA
County	San Francisco
City	San Francisco
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1052
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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

Apartments Mid Rise	120	Dwelling Unit	3.16	115,200	10,800	—	280	—
Office Park	3.20	1000sqft	0.07	3,200	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.1. Construction 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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.54	1.26	10.1	16.2	0.03	0.34	0.82	1.16	0.31	0.20	0.51	—	3,541	3,541	0.16	0.08	3.22	3,573
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.25	92.1	38.7	37.2	0.17	1.24	7.81	9.05	1.14	3.97	5.12	—	16,107	16,107	2.95	2.16	0.61	16,826
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.90	5.26	5.94	9.29	0.01	0.20	0.47	0.67	0.18	0.12	0.30	—	2,023	2,023	0.10	0.06	0.79	2,044
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.96	1.08	1.69	< 0.005	0.04	0.09	0.12	0.03	0.02	0.05	—	335	335	0.02	0.01	0.13	338

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.54	1.26	10.1	16.2	0.03	0.34	0.82	1.16	0.31	0.20	0.51	—	3,541	3,541	0.16	0.08	3.22	3,573
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	5.25	3.19	38.7	37.2	0.17	1.24	7.81	9.05	1.14	3.97	5.12	—	16,107	16,107	2.95	2.16	0.61	16,826
2027	1.54	92.1	10.2	16.0	0.03	0.34	0.82	1.16	0.31	0.20	0.51	—	3,500	3,500	0.16	0.10	0.08	3,536
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.45	0.33	3.27	3.64	0.01	0.11	0.31	0.43	0.10	0.12	0.23	—	919	919	0.09	0.06	0.37	939
2027	0.90	5.26	5.94	9.29	0.01	0.20	0.47	0.67	0.18	0.11	0.30	—	2,023	2,023	0.10	0.06	0.79	2,044
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.08	0.06	0.60	0.66	< 0.005	0.02	0.06	0.08	0.02	0.02	0.04	—	152	152	0.01	0.01	0.06	155
2027	0.16	0.96	1.08	1.69	< 0.005	0.04	0.09	0.12	0.03	0.02	0.05	—	335	335	0.02	0.01	0.13	338

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.54	1.26	10.1	16.2	0.03	0.34	0.82	1.16	0.31	0.20	0.51	—	3,541	3,541	0.16	0.08	3.22	3,573
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	5.25	3.19	38.7	37.2	0.17	1.24	7.81	9.05	1.14	3.97	5.12	—	16,107	16,107	2.95	2.16	0.61	16,826
2027	1.54	92.1	10.2	16.0	0.03	0.34	0.82	1.16	0.31	0.20	0.51	—	3,500	3,500	0.16	0.10	0.08	3,536

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.45	0.33	3.27	3.64	0.01	0.11	0.31	0.43	0.10	0.12	0.23	—	919	919	0.09	0.06	0.37	939
2027	0.90	5.26	5.94	9.29	0.01	0.20	0.47	0.67	0.18	0.11	0.30	—	2,023	2,023	0.10	0.06	0.79	2,044
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.08	0.06	0.60	0.66	< 0.005	0.02	0.06	0.08	0.02	0.02	0.04	—	152	152	0.01	0.01	0.06	155
2027	0.16	0.96	1.08	1.69	< 0.005	0.04	0.09	0.12	0.03	0.02	0.05	—	335	335	0.02	0.01	0.13	338

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.19	5.91	1.71	23.5	0.04	0.05	3.17	3.22	0.05	0.81	0.85	57.3	4,642	4,699	6.11	0.19	11.2	4,919
Mit.	3.16	5.89	1.44	23.4	0.04	0.03	3.17	3.20	0.03	0.81	0.83	57.3	4,304	4,362	6.08	0.19	11.2	4,581
% Reduced	1%	< 0.5%	16%	< 0.5%	5%	43%	—	1%	46%	—	3%	—	7%	7%	< 0.5%	—	—	7%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.51	5.25	1.86	16.6	0.04	0.05	3.17	3.22	0.04	0.81	0.85	57.3	4,473	4,530	6.13	0.20	1.10	4,744
Mit.	2.48	5.24	1.59	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	57.3	4,135	4,192	6.10	0.20	1.10	4,406
% Reduced	1%	< 0.5%	14%	1%	5%	47%	—	1%	48%	—	3%	—	8%	7%	< 0.5%	—	—	7%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.64	5.39	1.72	18.4	0.03	0.05	2.96	3.01	0.04	0.75	0.80	57.3	3,890	3,948	6.04	0.18	5.02	4,157
Mit.	2.61	5.37	1.45	18.3	0.03	0.02	2.96	2.99	0.02	0.75	0.78	57.3	3,553	3,610	6.01	0.18	5.02	3,819

% Reduced	1%	< 0.5%	15%	1%	5%	46%	—	1%	48%	—	3%	—	9%	9%	< 0.5%	—	—	8%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.48	0.98	0.31	3.35	0.01	0.01	0.54	0.55	0.01	0.14	0.15	9.49	644	654	1.00	0.03	0.83	688
Mit.	0.48	0.98	0.27	3.33	0.01	< 0.005	0.54	0.55	< 0.005	0.14	0.14	9.49	588	598	1.00	0.03	0.83	632
% Reduced	1%	< 0.5%	15%	1%	5%	46%	—	1%	48%	—	3%	—	9%	9%	< 0.5%	< 0.5%	—	8%

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.50	2.28	1.35	16.4	0.04	0.02	3.17	3.20	0.02	0.81	0.83	—	3,597	3,597	0.22	0.15	10.4	3,659
Area	0.66	3.61	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	401	401	0.06	0.01	—	404
Energy	0.03	0.02	0.29	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	630	630	0.08	0.01	—	633
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	3.19	5.91	1.71	23.5	0.04	0.05	3.17	3.22	0.05	0.81	0.85	57.3	4,642	4,699	6.11	0.19	11.2	4,919
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.48	2.25	1.57	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	—	3,446	3,446	0.24	0.17	0.27	3,503
Area	0.00	2.99	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Energy	0.03	0.02	0.29	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	630	630	0.08	0.01	—	633
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	2.51	5.25	1.86	16.6	0.04	0.05	3.17	3.22	0.04	0.81	0.85	57.3	4,473	4,530	6.13	0.20	1.10	4,744
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.29	2.08	1.40	14.8	0.03	0.02	2.96	2.98	0.02	0.75	0.77	—	3,227	3,227	0.21	0.15	4.19	3,282
Area	0.32	3.29	0.03	3.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.7	18.7	< 0.005	< 0.005	—	18.8
Energy	0.03	0.02	0.29	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	630	630	0.08	0.01	—	633
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	2.64	5.39	1.72	18.4	0.03	0.05	2.96	3.01	0.04	0.75	0.80	57.3	3,890	3,948	6.04	0.18	5.02	4,157
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.42	0.38	0.26	2.70	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	534	534	0.04	0.03	0.69	543
Area	0.06	0.60	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.09	3.09	< 0.005	< 0.005	—	3.11
Energy	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	104	104	0.01	< 0.005	—	105
Water	—	—	—	—	—	—	—	—	—	—	—	1.30	2.50	3.80	0.13	< 0.005	—	8.09
Waste	—	—	—	—	—	—	—	—	—	—	—	8.19	0.00	8.19	0.82	0.00	—	28.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Total	0.48	0.98	0.31	3.35	0.01	0.01	0.54	0.55	0.01	0.14	0.15	9.49	644	654	1.00	0.03	0.83	688

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.50	2.28	1.35	16.4	0.04	0.02	3.17	3.20	0.02	0.81	0.83	—	3,597	3,597	0.22	0.15	10.4	3,659
Area	0.66	3.61	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	401	401	0.06	0.01	—	404

Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	292	292	0.05	0.01	—	295
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	3.16	5.89	1.44	23.4	0.04	0.03	3.17	3.20	0.03	0.81	0.83	57.3	4,304	4,362	6.08	0.19	11.2	4,581
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.48	2.25	1.57	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	—	3,446	3,446	0.24	0.17	0.27	3,503
Area	0.00	2.99	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	292	292	0.05	0.01	—	295
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	2.48	5.24	1.59	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	57.3	4,135	4,192	6.10	0.20	1.10	4,406
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.29	2.08	1.40	14.8	0.03	0.02	2.96	2.98	0.02	0.75	0.77	—	3,227	3,227	0.21	0.15	4.19	3,282
Area	0.32	3.29	0.03	3.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.7	18.7	< 0.005	< 0.005	—	18.8
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	292	292	0.05	0.01	—	295
Water	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Waste	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Total	2.61	5.37	1.45	18.3	0.03	0.02	2.96	2.99	0.02	0.75	0.78	57.3	3,553	3,610	6.01	0.18	5.02	3,819
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.42	0.38	0.26	2.70	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	534	534	0.04	0.03	0.69	543
Area	0.06	0.60	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.09	3.09	< 0.005	< 0.005	—	3.11
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	48.3	48.3	0.01	< 0.005	—	48.8
Water	—	—	—	—	—	—	—	—	—	—	—	1.30	2.50	3.80	0.13	< 0.005	—	8.09

Waste	—	—	—	—	—	—	—	—	—	—	—	8.19	0.00	8.19	0.82	0.00	—	28.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Total	0.48	0.98	0.27	3.33	0.01	< 0.005	0.54	0.55	< 0.005	0.14	0.14	9.49	588	598	1.00	0.03	0.83	632

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	126	126	< 0.005	< 0.005	0.01	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	0.01	6.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	126	126	< 0.005	< 0.005	0.01	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	0.01	6.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.40	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	72.6	72.6	< 0.005	< 0.005	—	72.8
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.55	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	147	147	< 0.005	0.01	0.01	148
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.40	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	72.6	72.6	< 0.005	< 0.005	—	72.8
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.05	0.05	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.55	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	147	147	< 0.005	0.01	0.01	148
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.96	1.65	15.0	17.4	0.03	0.65	—	0.65	0.59	—	0.59	—	2,960	2,960	0.12	0.02	—	2,970
Dust From Material Movement	—	—	—	—	—	—	2.81	2.81	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	126	126	< 0.005	< 0.005	0.01	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	3.25	0.35	23.7	19.3	0.14	0.14	3.07	3.21	0.14	0.87	1.01	—	13,022	13,022	2.82	2.13	0.60	13,729
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.76	2.76	< 0.005	< 0.005	< 0.005	2.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.01	0.51	0.42	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	285	285	0.06	0.05	0.22	301
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.09	0.08	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.3	47.3	0.01	0.01	0.04	49.9

3.6. Grading (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.96	1.65	15.0	17.4	0.03	0.65	—	0.65	0.59	—	0.59	—	2,960	2,960	0.12	0.02	—	2,970
Dust From Material Movement	—	—	—	—	—	—	2.81	2.81	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	126	126	< 0.005	< 0.005	0.01	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	3.25	0.35	23.7	19.3	0.14	0.14	3.07	3.21	0.14	0.87	1.01	—	13,022	13,022	2.82	2.13	0.60	13,729
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.76	2.76	< 0.005	< 0.005	< 0.005	2.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.01	0.51	0.42	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	285	285	0.06	0.05	0.22	301
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.09	0.08	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.3	47.3	0.01	0.01	0.04	49.9

3.7. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.83	1.09	< 0.005	0.03	—	0.03	0.03	—	0.03	—	202	202	0.01	< 0.005	—	202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.4	33.4	< 0.005	< 0.005	—	33.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.22	0.19	2.76	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	733	733	0.02	0.03	0.07	742
Vendor	0.07	0.01	0.65	0.45	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	394	394	0.06	0.06	0.02	413
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	61.8	61.8	< 0.005	< 0.005	0.10	62.6
Vendor	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.1	33.1	< 0.005	< 0.005	0.03	34.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.02	10.4
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.75
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.83	1.09	< 0.005	0.03	—	0.03	0.03	—	0.03	—	202	202	0.01	< 0.005	—	202
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.4	33.4	< 0.005	< 0.005	—	33.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.25	0.22	0.19	2.76	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	733	733	0.02	0.03	0.07	742
Vendor	0.07	0.01	0.65	0.45	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	394	394	0.06	0.06	0.02	413
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	61.8	61.8	< 0.005	< 0.005	0.10	62.6
Vendor	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.1	33.1	< 0.005	< 0.005	0.03	34.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.02	10.4
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.75
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	5.15	7.09	0.01	0.18	—	0.18	0.17	—	0.17	—	1,313	1,313	0.05	0.01	—	1,318
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.94	1.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	217	217	0.01	< 0.005	—	218
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.16	2.87	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	761	761	0.01	0.01	2.43	765
Vendor	0.07	0.01	0.58	0.43	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	384	384	0.05	0.06	0.79	403
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.19	2.60	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	720	720	0.02	0.03	0.06	728
Vendor	0.07	0.01	0.61	0.44	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	384	384	0.05	0.06	0.02	402
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.09	1.39	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.02	0.57	400
Vendor	0.04	0.01	0.33	0.24	< 0.005	< 0.005	0.05	0.06	< 0.005	0.02	0.02	—	210	210	0.03	0.03	0.19	220
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.4	65.4	< 0.005	< 0.005	0.10	66.3
Vendor	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	0.03	36.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	5.15	7.09	0.01	0.18	—	0.18	0.17	—	0.17	—	1,313	1,313	0.05	0.01	—	1,318
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.94	1.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	217	217	0.01	< 0.005	—	218

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.16	2.87	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	761	761	0.01	0.01	2.43	765
Vendor	0.07	0.01	0.58	0.43	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	384	384	0.05	0.06	0.79	403
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.19	2.60	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	720	720	0.02	0.03	0.06	728
Vendor	0.07	0.01	0.61	0.44	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	384	384	0.05	0.06	0.02	402
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.09	1.39	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.02	0.57	400
Vendor	0.04	0.01	0.33	0.24	< 0.005	< 0.005	0.05	0.06	< 0.005	0.02	0.02	—	210	210	0.03	0.03	0.19	220
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.4	65.4	< 0.005	< 0.005	0.10	66.3
Vendor	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	0.03	36.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	0.66	6.09	8.83	0.01	0.24	—	0.24	0.22	—	0.22	—	1,350	1,350	0.05	0.01	—	1,355
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.6	66.6	< 0.005	< 0.005	—	66.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.60	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	165	165	< 0.005	0.01	0.01	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.08	0.01	0.56	0.48	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	321	321	0.07	0.05	0.01	338
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.13	8.13	< 0.005	< 0.005	0.01	8.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.01	16.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.62	2.62	< 0.005	< 0.005	< 0.005	2.76

3.12. Paving (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	0.66	6.09	8.83	0.01	0.24	—	0.24	0.22	—	0.22	—	1,350	1,350	0.05	0.01	—	1,355
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.6	66.6	< 0.005	< 0.005	—	66.8

Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.60	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	165	165	< 0.005	0.01	0.01	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.01	0.56	0.48	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	321	321	0.07	0.05	0.01	338
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.13	8.13	< 0.005	< 0.005	0.01	8.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.01	16.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.62	2.62	< 0.005	< 0.005	< 0.005	2.76

3.13. Architectural Coating (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	92.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	—	4.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.09	1.09	< 0.005	< 0.005	—	1.09
Architectural Coatings	—	0.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.52	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	144	144	< 0.005	0.01	0.01	146
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.11	7.11	< 0.005	< 0.005	0.01	7.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	92.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	—	4.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.09	1.09	< 0.005	< 0.005	—	1.09
Architectural Coatings	—	0.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.52	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	144	144	< 0.005	0.01	0.01	146
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.11	7.11	< 0.005	< 0.005	0.01	7.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.35	2.15	1.26	15.2	0.03	0.02	2.93	2.96	0.02	0.75	0.77	—	3,328	3,328	0.20	0.14	9.59	3,386
Office Park	0.15	0.13	0.09	1.15	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	269	269	0.01	0.01	0.78	273
Total	2.50	2.28	1.35	16.4	0.04	0.02	3.17	3.20	0.02	0.81	0.83	—	3,597	3,597	0.22	0.15	10.4	3,659
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.33	2.12	1.46	15.3	0.03	0.02	2.93	2.96	0.02	0.75	0.77	—	3,189	3,189	0.22	0.16	0.25	3,241

Office Park	0.15	0.13	0.11	1.12	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	257	257	0.02	0.01	0.02	261
Total	2.48	2.25	1.57	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	—	3,446	3,446	0.24	0.17	0.27	3,503
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.40	0.36	0.24	2.56	0.01	< 0.005	0.51	0.51	< 0.005	0.13	0.13	—	502	502	0.03	0.02	0.65	511
Office Park	0.02	0.02	0.01	0.15	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	31.8	31.8	< 0.005	< 0.005	0.04	32.3
Total	0.42	0.38	0.26	2.70	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	534	534	0.04	0.03	0.69	543

4.1.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.35	2.15	1.26	15.2	0.03	0.02	2.93	2.96	0.02	0.75	0.77	—	3,328	3,328	0.20	0.14	9.59	3,386
Office Park	0.15	0.13	0.09	1.15	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	269	269	0.01	0.01	0.78	273
Total	2.50	2.28	1.35	16.4	0.04	0.02	3.17	3.20	0.02	0.81	0.83	—	3,597	3,597	0.22	0.15	10.4	3,659
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.33	2.12	1.46	15.3	0.03	0.02	2.93	2.96	0.02	0.75	0.77	—	3,189	3,189	0.22	0.16	0.25	3,241
Office Park	0.15	0.13	0.11	1.12	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	257	257	0.02	0.01	0.02	261
Total	2.48	2.25	1.57	16.5	0.03	0.02	3.17	3.20	0.02	0.81	0.83	—	3,446	3,446	0.24	0.17	0.27	3,503

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.40	0.36	0.24	2.56	0.01	< 0.005	0.51	0.51	< 0.005	0.13	0.13	—	502	502	0.03	0.02	0.65	511
Office Park	0.02	0.02	0.01	0.15	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	31.8	31.8	< 0.005	< 0.005	0.04	32.3
Total	0.42	0.38	0.26	2.70	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	534	534	0.04	0.03	0.69	543

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	229	229	0.04	< 0.005	—	231
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	37.9	37.9	0.01	< 0.005	—	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	267	267	0.04	0.01	—	269
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	229	229	0.04	< 0.005	—	231
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	37.9	37.9	0.01	< 0.005	—	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	267	267	0.04	0.01	—	269
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	37.9	37.9	0.01	< 0.005	—	38.3
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	6.27	6.27	< 0.005	< 0.005	—	6.33
Total	—	—	—	—	—	—	—	—	—	—	—	—	44.1	44.1	0.01	< 0.005	—	44.6

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	230	230	0.04	< 0.005	—	232
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	37.9	37.9	0.01	< 0.005	—	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	268	268	0.04	0.01	—	270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	230	230	0.04	< 0.005	—	232
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	37.9	37.9	0.01	< 0.005	—	38.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	268	268	0.04	0.01	—	270
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	38.0	38.0	0.01	< 0.005	—	38.4

Office Park	—	—	—	—	—	—	—	—	—	—	—	—	6.27	6.27	< 0.005	< 0.005	—	6.33
Total	—	—	—	—	—	—	—	—	—	—	—	—	44.3	44.3	0.01	< 0.005	—	44.7

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.03	0.02	0.27	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	339	339	0.03	< 0.005	—	340
Office Park	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Total	0.03	0.02	0.29	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	363	363	0.03	< 0.005	—	364
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.03	0.02	0.27	0.11	< 0.005	0.02	—	0.02	0.02	—	0.02	—	339	339	0.03	< 0.005	—	340
Office Park	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Total	0.03	0.02	0.29	0.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	363	363	0.03	< 0.005	—	364
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.1	56.1	< 0.005	< 0.005	—	56.2
Office Park	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04
Total	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.1	60.1	0.01	< 0.005	—	60.3

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Office Park	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Office Park	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.4	24.4	< 0.005	< 0.005	—	24.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Office Park	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Consumer Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.66	0.62	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Total	0.66	3.61	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	401	401	0.06	0.01	—	404
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Consumer Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	2.99	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	1.56	1.56	< 0.005	< 0.005	—	1.57

Consumer Products	—	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.53	1.53	< 0.005	< 0.005	—	1.54
Total	0.06	0.60	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.09	3.09	< 0.005	< 0.005	—	3.11

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Consumer Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.66	0.62	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Total	0.66	3.61	0.07	6.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	401	401	0.06	0.01	—	404
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386

Consum Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	2.99	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	382	382	0.06	0.01	—	386
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	1.56	1.56	< 0.005	< 0.005	—	1.57
Consumer Products	—	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.53	1.53	< 0.005	< 0.005	—	1.54
Total	0.06	0.60	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	3.09	3.09	< 0.005	< 0.005	—	3.11

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.75	13.1	19.8	0.69	0.02	—	42.1

Office Park	—	—	—	—	—	—	—	—	—	—	—	1.09	2.06	3.15	0.11	< 0.005	—	6.75
Total	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.75	13.1	19.8	0.69	0.02	—	42.1
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.09	2.06	3.15	0.11	< 0.005	—	6.75
Total	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1.12	2.16	3.28	0.11	< 0.005	—	6.98
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.18	0.34	0.52	0.02	< 0.005	—	1.12
Total	—	—	—	—	—	—	—	—	—	—	—	1.30	2.50	3.80	0.13	< 0.005	—	8.09

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.75	13.1	19.8	0.69	0.02	—	42.1
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.09	2.06	3.15	0.11	< 0.005	—	6.75
Total	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.75	13.1	19.8	0.69	0.02	—	42.1
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.09	2.06	3.15	0.11	< 0.005	—	6.75
Total	—	—	—	—	—	—	—	—	—	—	—	7.84	15.1	23.0	0.81	0.02	—	48.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1.12	2.16	3.28	0.11	< 0.005	—	6.98
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.18	0.34	0.52	0.02	< 0.005	—	1.12
Total	—	—	—	—	—	—	—	—	—	—	—	1.30	2.50	3.80	0.13	< 0.005	—	8.09

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	47.9	0.00	47.9	4.79	0.00	—	168
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.60	0.00	1.60	0.16	0.00	—	5.61
Total	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	47.9	0.00	47.9	4.79	0.00	—	168
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.60	0.00	1.60	0.16	0.00	—	5.61
Total	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	7.93	0.00	7.93	0.79	0.00	—	27.7
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.27	0.00	0.27	0.03	0.00	—	0.93
Total	—	—	—	—	—	—	—	—	—	—	—	8.19	0.00	8.19	0.82	0.00	—	28.7

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	47.9	0.00	47.9	4.79	0.00	—	168
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.60	0.00	1.60	0.16	0.00	—	5.61
Total	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	47.9	0.00	47.9	4.79	0.00	—	168
Office Park	—	—	—	—	—	—	—	—	—	—	—	1.60	0.00	1.60	0.16	0.00	—	5.61
Total	—	—	—	—	—	—	—	—	—	—	—	49.5	0.00	49.5	4.95	0.00	—	173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	7.93	0.00	7.93	0.79	0.00	—	27.7
Office Park	—	—	—	—	—	—	—	—	—	—	—	0.27	0.00	0.27	0.03	0.00	—	0.93
Total	—	—	—	—	—	—	—	—	—	—	—	8.19	0.00	8.19	0.82	0.00	—	28.7

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83

Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/1/2026	10/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	10/30/2026	11/6/2026	5.00	5.00	—
Grading	Grading	11/7/2026	11/18/2026	5.00	8.00	—
Building Construction	Building Construction	11/19/2026	10/7/2027	5.00	230	—
Paving	Paving	10/8/2027	11/2/2027	5.00	18.0	—
Architectural Coating	Architectural Coating	11/3/2027	11/28/2027	5.00	18.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41

Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41

Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	158	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	87.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	13.4	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	4.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	17.5	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	158	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	87.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	13.4	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	4.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	17.5	11.7	LDA,LDT1,LDT2

Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	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)
Architectural Coating	233,280	77,760	4,800	1,600	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	7.50	0.00	—
Grading	—	10,100	8.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Office Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

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
Apartments Mid Rise	653	589	491	226,509	4,127	3,725	3,103	1,432,069
Office Park	35.4	5.25	2.43	9,636	337	49.9	23.1	91,642

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	653	589	491	226,509	4,127	3,725	3,103	1,432,069
Office Park	35.4	5.25	2.43	9,636	337	49.9	23.1	91,642

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	62
No Fireplaces	59
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	62
No Fireplaces	59
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	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)
233280	77,760	4,800	1,600	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

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)
Apartments Mid Rise	409,374	204	0.0330	0.0040	1,056,489
Office Park	67,740	204	0.0330	0.0040	76,001

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)

Apartments Mid Rise	411,043	204	0.0330	0.0040	0.00
Office Park	67,740	204	0.0330	0.0040	76,001

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,520,863	117,540
Office Park	568,748	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,520,863	117,540
Office Park	568,748	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	88.9	—
Office Park	2.98	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	88.9	—
Office Park	2.98	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

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	5.86	annual days of extreme heat
Extreme Precipitation	7.45	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	4.41	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	2	0	0	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	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	3.12
AQ-PM	21.5
AQ-DPM	93.6
Drinking Water	15.0
Lead Risk Housing	37.1
Pesticides	17.9
Toxic Releases	45.8
Traffic	74.7
Effect Indicators	—
CleanUp Sites	81.6
Groundwater	68.4

Haz Waste Facilities/Generators	98.8
Impaired Water Bodies	96.3
Solid Waste	55.7
Sensitive Population	—
Asthma	48.7
Cardio-vascular	17.8
Low Birth Weights	31.1
Socioeconomic Factor Indicators	—
Education	16.8
Housing	3.08
Linguistic	13.3
Poverty	4.72
Unemployment	4.23

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	98.47298858
Employed	99.98716797
Median HI	98.57564481
Education	—
Bachelor's or higher	96.85615296
High school enrollment	100
Preschool enrollment	86.71885025
Transportation	—
Auto Access	35.49339151

Active commuting	97.35660208
Social	—
2-parent households	94.45656358
Voting	84.40908508
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	93.9304504
Supermarket access	94.25125112
Tree canopy	69.10047479
Housing	—
Homeownership	23.72642115
Housing habitability	71.58988836
Low-inc homeowner severe housing cost burden	57.37200051
Low-inc renter severe housing cost burden	95.31630951
Uncrowded housing	55.74233286
Health Outcomes	—
Insured adults	84.88387014
Arthritis	91.8
Asthma ER Admissions	42.8
High Blood Pressure	94.9
Cancer (excluding skin)	42.8
Asthma	88.8
Coronary Heart Disease	92.9
Chronic Obstructive Pulmonary Disease	97.2
Diagnosed Diabetes	97.0
Life Expectancy at Birth	92.3

Cognitively Disabled	88.7
Physically Disabled	97.3
Heart Attack ER Admissions	57.9
Mental Health Not Good	94.2
Chronic Kidney Disease	93.4
Obesity	88.9
Pedestrian Injuries	19.6
Physical Health Not Good	97.7
Stroke	95.7
Health Risk Behaviors	—
Binge Drinking	1.9
Current Smoker	86.5
No Leisure Time for Physical Activity	98.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	65.5
English Speaking	81.2
Foreign-born	38.5
Outdoor Workers	95.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	4.1
Traffic Density	79.9
Traffic Access	87.4
Other Indices	—
Hardship	0.4

Other Decision Support	—
2016 Voting	98.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	22.0
Healthy Places Index Score for Project Location (b)	100
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

Screen	Justification
Construction: Trips and VMT	Assuming haul trips for paving.
Operations: Hearths	Information provided indicates no natural gas, assuming fireplaces would be electric.

Appendix B

Interstate 280 Health Risk Assessment Modeling, Results, and Mitigation

249 Pennsylvania Avenue

DPM Emission Calculations

	On/Off Ramps	Freeway Traffic
Annual Growth Rate	1%	1%
Traffic Data Year	2023	2023
Analysis Start Year	2027	2027
Analysis End Year	2028	2028
Averaging Period (years)	2	2
Analysis Start Year	2029	2029
Analysis End Year	2042	2042
Averaging Period (years)	14	14
Analysis Start Year	2043	2043
Analysis End Year	2056	2056
Averaging Period (years)	14	14

I-280 Mainline North *2023* *2027* *2027* *2029* *2043*

								EMISSION FACTORS Truck PM10 EF (diesel) [grams/mile]				EMISSION RATES Truck PM10 Exhaust Emissions [grams/second]				SCALAR VALUES FOR AERMOD Truck PM10 Scalar			
Time	Length (mi)	2023 Truck Flow (vehicle / hr)	2027 Average Truck Flow (vehicle / hr)	2027-2028 Average Truck Flow (vehicle / hr)	2029 - 2042 Average Truck Flow (vehicle / hr)	2043 - 2056 Average Truck Flow (vehicle / hr)	Truck Speed mph	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.45036984	9.41	9.79	10.19	10.82	13.20	60	0.0268833	0.026883295	0.025801655	0.024239954	3.29421E-05	3.42797E-05	3.49245E-05	4.00352E-05	0.0787	0.0787	0.0787	0.0787
1:00:00 AM	0.45036984	1.58	1.64	1.71	1.81	2.21	60	0.0268833	0.026883295	0.025801655	0.024239954	5.5162E-06	5.74018E-06	5.84815E-06	6.70394E-06	0.0132	0.0132	0.0132	0.0132
2:00:00 AM	0.45036984	0.11	0.11	0.11	0.12	0.15	60	0.0268833	0.026883295	0.025801655	0.024239954	3.69416E-07	3.84416E-07	3.91647E-07	4.48959E-07	0.0009	0.0009	0.0009	0.0009
3:00:00 AM	0.45036984	0.16	0.17	0.18	0.19	0.23	60	0.0268833	0.026883295	0.025801655	0.024239954	5.71978E-07	5.95203E-07	6.06399E-07	6.95137E-07	0.0014	0.0014	0.0014	0.0014
4:00:00 AM	0.45036984	4.90	5.10	5.30	5.63	6.87	60	0.0268833	0.026883295	0.025801655	0.024239954	1.714E-05	1.78359E-05	1.81714E-05	2.08305E-05	0.0410	0.0410	0.0410	0.0410
5:00:00 AM	0.45036984	25.88	26.93	28.03	29.75	36.30	60	0.0268833	0.026883295	0.025801655	0.024239954	9.05859E-05	9.4264E-05	9.60371E-05	0.000110091	0.2164	0.2164	0.2164	0.2164
6:00:00 AM	0.45036984	58.39	60.76	63.23	67.12	81.90	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000204361	0.000212659	0.000216659	0.000248364	0.4883	0.4883	0.4883	0.4883
7:00:00 AM	0.45036984	86.69	90.21	93.87	99.65	121.59	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000303391	0.00031571	0.000321648	0.000368717	0.7249	0.7249	0.7249	0.7249
8:00:00 AM	0.45036984	95.54	99.42	103.45	109.82	134.00	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000334355	0.000347931	0.000354476	0.000406349	0.7989	0.7989	0.7989	0.7989
9:00:00 AM	0.45036984	97.31	101.26	105.38	111.86	136.49	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000340569	0.000354398	0.000361064	0.000413901	0.8137	0.8137	0.8137	0.8137
10:00:00 AM	0.45036984	99.20	103.22	107.42	114.02	139.13	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000347162	0.000361258	0.000368053	0.000421913	0.8295	0.8295	0.8295	0.8295
11:00:00 AM	0.45036984	100.06	104.12	108.35	115.02	140.34	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000350186	0.000364405	0.00037126	0.000425589	0.8367	0.8367	0.8367	0.8367
12:00:00 PM	0.45036984	103.50	107.70	112.07	118.97	145.16	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000362217	0.000376925	0.000384015	0.00044021	0.8655	0.8655	0.8655	0.8655
1:00:00 PM	0.45036984	107.48	111.85	116.39	123.55	150.76	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000376168	0.000391442	0.000398805	0.000457164	0.8988	0.8988	0.8988	0.8988
2:00:00 PM	0.45036984	114.66	119.32	124.17	131.80	160.83	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000401296	0.00041759	0.000425445	0.000487703	0.9588	0.9588	0.9588	0.9588
3:00:00 PM	0.45036984	118.66	123.48	128.50	136.40	166.44	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000415292	0.000432154	0.000440283	0.000504712	0.9923	0.9923	0.9923	0.9923
4:00:00 PM	0.45036984	119.59	124.44	129.50	137.46	167.73	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000418527	0.000435521	0.000443713	0.000508644	1.0000	1.0000	1.0000	1.0000
5:00:00 PM	0.45036984	115.93	120.63	125.53	133.26	162.60	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000405714	0.000422188	0.000430129	0.000493072	0.9694	0.9694	0.9694	0.9694
6:00:00 PM	0.45036984	103.27	107.46	111.82	118.70	144.84	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000361404	0.000376078	0.000383152	0.000439221	0.8635	0.8635	0.8635	0.8635
7:00:00 PM	0.45036984	82.09	85.42	88.89	94.36	115.14	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000287292	0.000298957	0.00030458	0.000349151	0.6864	0.6864	0.6864	0.6864
8:00:00 PM	0.45036984	66.53	69.23	72.04	76.47	93.31	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000232825	0.000242279	0.000246836	0.000282957	0.5563	0.5563	0.5563	0.5563
9:00:00 PM	0.45036984	53.60	55.77	58.04	61.61	75.17	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000187574	0.00019519	0.000198862	0.000227962	0.4482	0.4482	0.4482	0.4482
10:00:00 PM	0.45036984	38.80	40.38	42.02	44.60	54.43	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000135803	0.000141317	0.000143976	0.000165044	0.3245	0.3245	0.3245	0.3245
11:00:00 PM	0.45036984	21.36	22.22	23.13	24.55	29.95	60	0.0268833	0.026883295	0.025801655	0.024239954	7.47394E-05	7.77741E-05	7.9237E-05	9.08322E-05	0.1786	0.1786	0.1786	0.1786
											MAX:	**0.000418527**	**0.000435521**	**0.000443713**	**0.000508644**				

I-280 Mainline South

								EMISSION FACTORS Truck PM10 EF (diesel) [grams/mile]				EMISSION RATES Truck PM10 Exhaust Emissions [grams/second]				SCALAR VALUES FOR AERMOD Truck PM10 Scalar			
Time	Length (mi)	2023 Truck Flow (vehicle / hr)	2027 Average Truck Flow (vehicle / hr)	2027-2028 Average Truck Flow (vehicle / hr)	2029 - 2042 Average Truck Flow (vehicle / hr)	2043 - 2056 Average Truck Flow (vehicle / hr)	Truck Speed mph	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.445026048	9.62	10.01	10.42	11.06	13.49	60	0.0268833	0.026883295	0.025801655	0.024239954	3.32697E-05	3.46206E-05	3.52718E-05	4.04333E-05	0.0726	0.0726	0.0726	0.0726
1:00:00 AM	0.445026048	1.67	1.74	1.81	1.92	2.35	60	0.0268833	0.026883295	0.025801655	0.024239954	5.78603E-06	6.02097E-06	6.13422E-06	7.03188E-06	0.0126	0.0126	0.0126	0.0126
2:00:00 AM	0.445026048	0.11	0.11	0.11	0.12	0.15	60	0.0268833	0.026883295	0.025801655	0.024239954	3.65033E-07	3.79855E-07	3.87E-07	4.43632E-07	0.0008	0.0008	0.0008	0.0008
3:00:00 AM	0.445026048	0.01	0.01	0.01	0.01	0.02	60	0.0268833	0.026883295	0.025801655	0.024239954	3.83181E-08	3.98739E-08	4.0624E-08	4.65687E-08	0.0001	0.0001	0.0001	0.0001
4:00:00 AM	0.445026048	4.35	4.53	4.71	5.00	6.10	60	0.0268833	0.026883295	0.025801655	0.024239954	1.50398E-05	1.56505E-05	1.59449E-05	1.82782E-05	0.0328	0.0328	0.0328	0.0328
5:00:00 AM	0.445026048	22.56	23.48	24.43	25.93	31.65	60	0.0268833	0.026883295	0.025801655	0.024239954	7.80252E-05	8.11933E-05	8.27206E-05	9.48255E-05	0.1704	0.1704	0.1704	0.1704
6:00:00 AM	0.445026048	50.55	52.60	54.74	58.11	70.90	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000174817	0.000181915	0.000185337	0.000212458	0.3817	0.3817	0.3817	0.3817
7:00:00 AM	0.445026048	83.78	87.18	90.72	96.30	117.51	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000289723	0.000301487	0.000307158	0.000352106	0.6326	0.6326	0.6326	0.6326
8:00:00 AM	0.445026048	94.94	98.79	102.80	109.13	133.16	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000328309	0.00034164	0.000348066	0.000399001	0.7169	0.7169	0.7169	0.7169

9:00:00 AM	0.445026048	98.37	102.36	106.52	113.07	137.97	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000340169	0.000353981	0.000360639	0.000413414	0.7428	0.7428	0.7428	0.7428
10:00:00 AM	0.445026048	103.50	107.71	112.08	118.98	145.17	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000357939	0.000372472	0.000379479	0.00043501	0.7816	0.7816	0.7816	0.7816
11:00:00 AM	0.445026048	106.52	110.84	115.34	122.44	149.40	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000368352	0.000383308	0.000390518	0.000447665	0.8043	0.8043	0.8043	0.8043
12:00:00 PM	0.445026048	111.58	116.12	120.83	128.26	156.51	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000385882	0.000401551	0.000409104	0.00046897	0.8426	0.8426	0.8426	0.8426
1:00:00 PM	0.445026048	116.67	121.40	126.33	134.11	163.64	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000403461	0.000419843	0.00042774	0.000490334	0.8810	0.8810	0.8810	0.8810
2:00:00 PM	0.445026048	127.34	132.51	137.89	146.38	178.61	60	0.0268833	0.026883295	0.025801655	0.024239954	0.00044038	0.000458261	0.000466881	0.000535203	0.9616	0.9616	0.9616	0.9616
3:00:00 PM	0.445026048	132.43	137.80	143.40	152.22	185.74	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000457953	0.000476548	0.000485512	0.000556559	1.0000	1.0000	1.0000	1.0000
4:00:00 PM	0.445026048	130.64	135.95	141.47	150.17	183.23	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000451785	0.000470129	0.000478973	0.000549063	0.9865	0.9865	0.9865	0.9865
5:00:00 PM	0.445026048	125.62	130.72	136.02	144.39	176.19	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000434407	0.000452046	0.000460549	0.000527943	0.9486	0.9486	0.9486	0.9486
6:00:00 PM	0.445026048	115.15	119.82	124.69	132.36	161.50	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000398207	0.000414376	0.00042217	0.000483949	0.8695	0.8695	0.8695	0.8695
7:00:00 PM	0.445026048	93.18	96.97	100.90	107.11	130.70	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000322243	0.000335327	0.000341635	0.000391628	0.7037	0.7037	0.7037	0.7037
8:00:00 PM	0.445026048	73.81	76.81	79.93	84.85	103.53	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000255258	0.000265623	0.000270619	0.00031022	0.5574	0.5574	0.5574	0.5574
9:00:00 PM	0.445026048	59.87	62.31	64.83	68.82	83.98	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000207056	0.000215464	0.000219517	0.00025164	0.4521	0.4521	0.4521	0.4521
10:00:00 PM	0.445026048	44.62	46.44	48.32	51.29	62.59	60	0.0268833	0.026883295	0.025801655	0.024239954	0.000154321	0.000160587	0.000163608	0.00018755	0.3370	0.3370	0.3370	0.3370
11:00:00 PM	0.445026048	23.74	24.71	25.71	27.29	33.30	60	0.0268833	0.026883295	0.025801655	0.024239954	8.21058E-05	8.54396E-05	8.70467E-05	9.97847E-05	0.1793	0.1793	0.1793	0.1793
											MAX:	**0.000457953**	**0.000476548**	**0.000485512**	**0.000556559**				

I-280 OFFRAMP South

Time	Length (mi)	2023 Truck Flow (vehicle / hr)	2027 Average Truck Flow (vehicle / hr)	2027-2028 Average Truck Flow (vehicle / hr)	2029 - 2042 Average Truck Flow (vehicle / hr)	2043 - 2056 Average Truck Flow (vehicle / hr)	Truck Speed mph	EMISSION FACTORS Truck PM10 EF (diesel) [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Truck PM10 Exhaust Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Truck PM10 Scalar 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.19908733	8.36	8.70	9.05	9.61	11.73	15	0.02599962	0.025999618	0.020646904	0.007918837	1.25085E-05	1.30164E-05	1.09725E-05	5.13501E-06	0.0901	0.0901	0.0901	0.0901
1:00:00 AM	0.19908733	1.63	1.69	1.76	1.87	2.28	15	0.02599962	0.025999618	0.020646904	0.007918837	2.43705E-06	2.536E-06	2.13779E-06	1.00046E-06	0.0176	0.0176	0.0176	0.0176
2:00:00 AM	0.19908733	0.10	0.11	0.11	0.12	0.14	15	0.02599962	0.025999618	0.020646904	0.007918837	1.53778E-07	1.60021E-07	1.34895E-07	6.31289E-08	0.0011	0.0011	0.0011	0.0011
3:00:00 AM	0.19908733	0.01	0.01	0.01	0.01	0.02	15	0.02599962	0.025999618	0.020646904	0.007918837	1.65785E-08	1.72517E-08	1.45428E-08	6.80584E-09	0.0001	0.0001	0.0001	0.0001
4:00:00 AM	0.19908733	4.01	4.17	4.34	4.61	5.62	15	0.02599962	0.025999618	0.020646904	0.007918837	5.99729E-06	6.2408E-06	5.26086E-06	2.46201E-06	0.0432	0.0432	0.0432	0.0432
5:00:00 AM	0.19908733	17.15	17.85	18.57	19.72	24.06	15	0.02599962	0.025999618	0.020646904	0.007918837	2.56636E-05	2.67056E-05	2.25123E-05	1.05354E-05	0.1849	0.1849	0.1849	0.1849
6:00:00 AM	0.19908733	36.43	37.91	39.45	41.88	51.10	15	0.02599962	0.025999618	0.020646904	0.007918837	5.45144E-05	5.67279E-05	4.78204E-05	2.23793E-05	0.3927	0.3927	0.3927	0.3927
7:00:00 AM	0.19908733	59.09	61.49	63.99	67.92	82.88	15	0.02599962	0.025999618	0.020646904	0.007918837	8.84134E-05	9.20033E-05	7.75568E-05	3.62956E-05	0.6368	0.6368	0.6368	0.6368
8:00:00 AM	0.19908733	66.71	69.42	72.24	76.68	93.57	15	0.02599962	0.025999618	0.020646904	0.007918837	9.98153E-05	0.000103868	8.75586E-05	4.09763E-05	0.7190	0.7190	0.7190	0.7190
9:00:00 AM	0.19908733	69.06	71.87	74.79	79.39	96.87	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000103334	0.00010753	9.06453E-05	4.24208E-05	0.7443	0.7443	0.7443	0.7443
10:00:00 AM	0.19908733	72.66	75.61	78.68	83.52	101.91	15	0.02599962	0.025999618	0.020646904	0.007918837	0.00010871	0.000113124	9.53608E-05	4.46276E-05	0.7830	0.7830	0.7830	0.7830
11:00:00 AM	0.19908733	74.73	77.77	80.92	85.90	104.82	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000111814	0.000116354	9.80839E-05	4.5902E-05	0.8054	0.8054	0.8054	0.8054
12:00:00 PM	0.19908733	78.11	81.28	84.58	89.78	109.55	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000116866	0.000121612	0.000102516	4.79761E-05	0.8418	0.8418	0.8418	0.8418
1:00:00 PM	0.19908733	81.43	84.74	88.18	93.60	114.21	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000121836	0.000126783	0.000106875	5.00162E-05	0.8776	0.8776	0.8776	0.8776
2:00:00 PM	0.19908733	88.86	92.47	96.22	102.14	124.64	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000132956	0.000138354	0.00011663	5.45812E-05	0.9577	0.9577	0.9577	0.9577
3:00:00 PM	0.19908733	92.79	96.56	100.48	106.66	130.14	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000138833	0.00014447	0.000121785	5.69938E-05	1.0000	1.0000	1.0000	1.0000
4:00:00 PM	0.19908733	92.14	95.88	99.78	105.92	129.24	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000137865	0.000143463	0.000120936	5.65967E-05	0.9930	0.9930	0.9930	0.9930
5:00:00 PM	0.19908733	89.06	92.67	96.44	102.37	124.91	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000133251	0.000138662	0.000116889	5.47024E-05	0.9598	0.9598	0.9598	0.9598
6:00:00 PM	0.19908733	80.77	84.05	87.47	92.85	113.29	15	0.02599962	0.025999618	0.020646904	0.007918837	0.000120854	0.000125761	0.000106014	4.96131E-05	0.8705	0.8705	0.8705	0.8705
7:00:00 PM	0.19908733	66.13	68.82	71.61	76.02	92.76	15	0.02599962	0.025999618	0.020646904	0.007918837	9.89513E-05	0.000102969	8.68007E-05	4.06216E-05	0.7127	0.7127	0.7127	0.7127
8:00:00 PM	0.19908733	52.43	54.56	56.77	60.27	73.54	15	0.02599962	0.025999618	0.020646904	0.007918837	7.84443E-05	8.16295E-05	6.88119E-05	3.22031E-05	0.5650	0.5650	0.5650	0.5650
9:00:00 PM	0.19908733	43.41	45.17	47.00	49.89	60.88	15	0.02599962	0.025999618	0.020646904	0.007918837	6.49449E-05	6.75819E-05	5.69701E-05	2.66613E-05	0.4678	0.4678	0.4678	0.4678
10:00:00 PM	0.19908733	33.08	34.42	35.82	38.02	46.39	15	0.02599962	0.025999618	0.020646904	0.007918837	4.94882E-05	5.14976E-05	4.34114E-05	2.0316E-05	0.3565	0.3565	0.3565	0.3565
11:00:00 PM	0.19908733	19.29	20.07	20.89	22.17	27.05	15	0.02599962	0.025999618	0.020646904	0.007918837	2.88597E-05	3.00316E-05	2.53159E-05	1.18475E-05	0.2079	0.2079	0.2079	0.2079
											MAX:	**0.000138833**	**0.00014447**	**0.000121785**	**5.69938E-05**				

249 Pennsylvania Avenue

PM2.5 Emission Calculations

	On/Off Ramps	Freeway Traffic
Annual Growth Rate	1%	1%
Traffic Data Year	2023	2023
Analysis Start Year	2027	2027
Analysis End Year	2028	2028
Averaging Period (years)	2	2
Analysis Start Year	2029	2029
Analysis End Year	2042	2042
Averaging Period (years)	14	14
Analysis Start Year	2043	2043
Analysis End Year	2056	2056
Averaging Period (years)	14	14

Trucks

I-280 Mainline North

Time	Length (mi)	2023 Truck Flow (vehicle / hr) *2023*	2027 Average Truck Flow (vehicle / hr) *2027*	2027-2028 Average Truck Flow (vehicle / hr) *2027*	2029 - 2042 Average Truck Flow (vehicle / hr) *2029*	2043 - 2056 Average Truck Flow (vehicle / hr) *2043*	Truck Speed mph
12:00:00 AM	0.45036984	9.41	9.79	10.19	10.82	13.20	60
1:00:00 AM	0.45036984	1.58	1.64	1.71	1.81	2.21	60
2:00:00 AM	0.45036984	0.11	0.11	0.11	0.12	0.15	60
3:00:00 AM	0.45036984	0.16	0.17	0.18	0.19	0.23	60
4:00:00 AM	0.45036984	4.90	5.10	5.30	5.63	6.87	60
5:00:00 AM	0.45036984	25.88	26.93	28.03	29.75	36.30	60
6:00:00 AM	0.45036984	58.39	60.76	63.23	67.12	81.90	60
7:00:00 AM	0.45036984	86.69	90.21	93.87	99.65	121.59	60
8:00:00 AM	0.45036984	95.54	99.42	103.45	109.82	134.00	60
9:00:00 AM	0.45036984	97.31	101.26	105.38	111.86	136.49	60
10:00:00 AM	0.45036984	99.20	103.22	107.42	114.02	139.13	60
11:00:00 AM	0.45036984	100.06	104.12	108.35	115.02	140.34	60
12:00:00 PM	0.45036984	103.50	107.70	112.07	118.97	145.16	60
1:00:00 PM	0.45036984	107.48	111.85	116.39	123.55	150.76	60
2:00:00 PM	0.45036984	114.66	119.32	124.17	131.80	160.83	60
3:00:00 PM	0.45036984	118.66	123.48	128.50	136.40	166.44	60
4:00:00 PM	0.45036984	119.59	124.44	129.50	137.46	167.73	60
5:00:00 PM	0.45036984	115.93	120.63	125.53	133.26	162.60	60
6:00:00 PM	0.45036984	103.27	107.46	111.82	118.70	144.84	60
7:00:00 PM	0.45036984	82.09	85.42	88.89	94.36	115.14	60
8:00:00 PM	0.45036984	66.53	69.23	72.04	76.47	93.31	60
9:00:00 PM	0.45036984	53.60	55.77	58.04	61.61	75.17	60
10:00:00 PM	0.45036984	38.80	40.38	42.02	44.60	54.43	60
11:00:00 PM	0.45036984	21.36	22.22	23.13	24.55	29.95	60

Time	EMISSION FACTORS Truck PM2.5 RUNEX [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Truck PM2.5 Exhaust Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Truck Exhaust PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	3.1517E-05	3.27967E-05	3.34136E-05	3.83032E-05	0.0787	0.0787	0.0787	0.0787
1:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	5.27757E-06	5.49186E-06	5.59516E-06	6.41393E-06	0.0132	0.0132	0.0132	0.0132
2:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	3.53435E-07	3.67786E-07	3.74704E-07	4.29537E-07	0.0009	0.0009	0.0009	0.0009
3:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	5.47235E-07	5.69455E-07	5.80166E-07	6.65065E-07	0.0014	0.0014	0.0014	0.0014
4:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	1.63985E-05	1.70643E-05	1.73853E-05	1.99294E-05	0.0410	0.0410	0.0410	0.0410
5:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	8.66672E-05	9.01862E-05	9.18826E-05	0.000105328	0.2164	0.2164	0.2164	0.2164
6:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000195521	0.000203459	0.000207287	0.00023762	0.4883	0.4883	0.4883	0.4883
7:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000290266	0.000302052	0.000307734	0.000352766	0.7249	0.7249	0.7249	0.7249
8:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000319891	0.00033288	0.000339142	0.00038877	0.7989	0.7989	0.7989	0.7989
9:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000325837	0.000339067	0.000345445	0.000395996	0.8137	0.8137	0.8137	0.8137
10:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000332144	0.00034563	0.000352131	0.000403661	0.8295	0.8295	0.8295	0.8295
11:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000335038	0.000348641	0.000355199	0.000407178	0.8367	0.8367	0.8367	0.8367
12:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000346548	0.000360619	0.000367403	0.000421167	0.8655	0.8655	0.8655	0.8655
1:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000359895	0.000374508	0.000381553	0.000437387	0.8988	0.8988	0.8988	0.8988
2:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000383936	0.000399526	0.000407041	0.000466605	0.9588	0.9588	0.9588	0.9588
3:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000397326	0.00041346	0.000421237	0.000482879	0.9923	0.9923	0.9923	0.9923
4:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000400422	0.00041668	0.000424518	0.00048664	1.0000	1.0000	1.0000	1.0000
5:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000388163	0.000403924	0.000411522	0.000471742	0.9694	0.9694	0.9694	0.9694
6:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.00034577	0.000359809	0.000366577	0.00042022	0.8635	0.8635	0.8635	0.8635
7:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000274864	0.000286024	0.000291404	0.000334047	0.6864	0.6864	0.6864	0.6864
8:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000222753	0.000231798	0.000236158	0.000270717	0.5563	0.5563	0.5563	0.5563
9:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.00017946	0.000186746	0.000190259	0.000218101	0.4482	0.4482	0.4482	0.4482
10:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000129929	0.000135204	0.000137747	0.000157905	0.3245	0.3245	0.3245	0.3245
11:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	7.15062E-05	7.44096E-05	7.58093E-05	8.69029E-05	0.1786	0.1786	0.1786	0.1786
				MAX:	**0.000400422**	**0.00041668**	**0.000424518**	**0.00048664**				

Time	EMISSION FACTORS Truck PM2.5 PMTW [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Truck PM2.5 PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Truck BWTW PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Total Truck Exhaust + PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	3.46909E-05	3.60994E-05	3.79929E-05	4.51065E-05	0.0787	0.0787	0.0787	0.0787	0.0001	0.0001	0.0001	0.0001
1:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	5.80903E-06	6.0449E-06	6.36196E-06	7.55315E-06	0.0132	0.0132	0.0132	0.0132	0.0000	0.0000	0.0000	0.0000
2:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	3.89027E-07	4.04823E-07	4.26056E-07	5.05829E-07	0.0009	0.0009	0.0009	0.0009	0.0000	0.0000	0.0000	0.0000
3:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	6.02343E-07	6.268E-07	6.59676E-07	7.83191E-07	0.0014	0.0014	0.0014	0.0014	0.0000	0.0000	0.0000	0.0000
4:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	1.80499E-05	1.87828E-05	1.97679E-05	2.34692E-05	0.0410	0.0410	0.0410	0.0410	0.0000	0.0000	0.0000	0.0000
5:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	9.53948E-05	9.92682E-05	0.000104475	0.000124036	0.2164	0.2164	0.2164	0.2164	0.0002	0.0002	0.0002	0.0002
6:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.00021521	0.000223948	0.000235694	0.000279825	0.4883	0.4883	0.4883	0.4883	0.0004	0.0004	0.0004	0.0005
7:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000319497	0.00033247	0.000349908	0.000415423	0.7249	0.7249	0.7249	0.7249	0.0006	0.0006	0.0007	0.0008
8:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000352105	0.000366402	0.00038562	0.000457822	0.7989	0.7989	0.7989	0.7989	0.0007	0.0007	0.0007	0.0008
9:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000358649	0.000373212	0.000392787	0.000466331	0.8137	0.8137	0.8137	0.8137	0.0007	0.0007	0.0007	0.0009
10:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000365591	0.000380436	0.00040039	0.000475357	0.8295	0.8295	0.8295	0.8295	0.0007	0.0007	0.0008	0.0009
11:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000368777	0.000383751	0.000403878	0.000479499	0.8367	0.8367	0.8367	0.8367	0.0007	0.0007	0.0008	0.0009
12:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000381446	0.000396935	0.000417754	0.000495972	0.8655	0.8655	0.8655	0.8655	0.0007	0.0008	0.0008	0.0009
1:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000396137	0.000412222	0.000433843	0.000515074	0.8988	0.8988	0.8988	0.8988	0.0008	0.0008	0.0008	0.0010
2:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.0004226	0.000439759	0.000462824	0.000549482	0.9588	0.9588	0.9588	0.9588	0.0008	0.0008	0.0009	0.0010
3:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000437338	0.000455096	0.000478966	0.000568645	0.9923	0.9923	0.9923	0.9923	0.0008	0.0009	0.0009	0.0011
4:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000440745	0.000458641	0.000482697	0.000573075	1.0000	1.0000	1.0000	1.0000	0.0008	0.0009	0.0009	0.0011
5:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000427252	0.0004446	0.000467919	0.000555531	0.9694	0.9694	0.9694	0.9694	0.0008	0.0008	0.0009	0.0010
6:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000380589	0.000396043	0.000416815	0.000494858	0.8635	0.8635	0.8635	0.8635	0.0007	0.0008	0.0008	0.0009
7:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000302543	0.000314828	0.00033134	0.000393379	0.6864	0.6864	0.6864	0.6864	0.0006	0.0006	0.0006	0.0007
8:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000245185	0.000255141	0.000268523	0.0003188	0.5563	0.5563	0.5563	0.5563	0.0005	0.0005	0.0005	0.0006
9:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000197532	0.000205552	0.000216333	0.000256839	0.4482	0.4482	0.4482	0.4482	0.0004	0.0004	0.0004	0.0005
10:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000143013	0.00014882	0.000156625	0.000185951	0.3245	0.3245	0.3245	0.3245	0.0003	0.0003	0.0003	0.0003
11:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	7.8707E-05	8.19029E-05	8.61986E-05	0.000102338	0.1786	0.1786	0.1786	0.1786	0.0002	0.0002	0.0002	0.0002
				MAX:	**0.000440745**	**0.000458641**	**0.000482697**	**0.000573075**				MAX:	**0.000841166**	**0.000875321**	**0.000907215**	**0.001059715**

Passenger Vehicles

I-280 Mainline North

Time	Length (mi)	2023 Car Flow (vehicle / hr) *2023*	2027 Average Car Flow (vehicle / hr) *2027*	2027-2028 Average Car Flow (vehicle / hr) *2027*	2029 - 2042 Average Car Flow (vehicle / hr) *2029*	2043 - 2056 Average Car Flow (vehicle / hr) *2043*	Car Speed mph
12:00:00 AM	0.45036984	568.39	591.47	615.48	653.35	797.21	65
1:00:00 AM	0.45036984	375.33	390.57	406.43	431.43	526.42	65
2:00:00 AM	0.45036984	316.03	328.86	342.22	363.27	443.26	65
3:00:00 AM	0.45036984	324.32	337.48	351.19	372.79	454.88	65
4:00:00 AM	0.45036984	507.65	528.26	549.71	583.53	712.02	65
5:00:00 AM	0.45036984	998.57	1039.11	1081.30	1147.82	1400.56	65
6:00:00 AM	0.45036984	1683.50	1751.85	1822.98	1935.14	2361.23	65
7:00:00 AM	0.45036984	2330.33	2424.95	2523.42	2678.66	3268.47	65
8:00:00 AM	0.45036984	2512.07	2614.07	2720.21	2887.56	3523.37	65
9:00:00 AM	0.45036984	2524.11	2626.59	2733.24	2901.39	3540.25	65
10:00:00 AM	0.45036984	2551.33	2654.93	2762.73	2932.69	3578.44	65
11:00:00 AM	0.45036984	2599.05	2704.58	2814.40	2987.54	3645.37	65
12:00:00 PM	0.45036984	2682.70	2791.63	2904.98	3083.69	3762.69	65
1:00:00 PM	0.45036984	2771.31	2883.84	3000.93	3185.55	3886.98	65
2:00:00 PM	0.45036984	2964.03	3084.38	3209.62	3407.08	4157.28	65
3:00:00 PM	0.45036984	3010.93	3133.18	3260.40	3460.98	4223.06	65
4:00:00 PM	0.45036984	3043.01	3166.56	3295.14	3497.86	4268.05	65
5:00:00 PM	0.45036984	2975.61	3096.44	3222.16	3420.39	4173.53	65
6:00:00 PM	0.45036984	2672.29	2780.80	2893.71	3071.73	3748.09	65
7:00:00 PM	0.45036984	2234.97	2325.72	2420.16	2569.05	3134.72	65
8:00:00 PM	0.45036984	1869.70	1945.62	2024.62	2149.17	2622.40	65
9:00:00 PM	0.45036984	1618.98	1684.72	1753.12	1860.98	2270.74	65
10:00:00 PM	0.45036984	1288.61	1340.93	1395.38	1481.22	1807.37	65
11:00:00 PM	0.45036984	890.15	926.29	963.91	1023.21	1248.51	65

Time	EMISSION FACTORS Car PM2.5 RUNEX [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATESCar PM2.5 Exhaust Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Car Exhaust PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	7.55481E-05	7.86157E-05	7.34007E-05	4.66434E-05	0.1868	0.1868	0.1868	0.1868
1:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	4.98871E-05	5.19128E-05	4.84691E-05	3.08003E-05	0.1233	0.1233	0.1233	0.1233
2:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	4.20057E-05	4.37113E-05	4.08117E-05	2.59343E-05	0.1039	0.1039	0.1039	0.1039
3:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	4.31069E-05	4.48572E-05	4.18816E-05	2.66142E-05	0.1066	0.1066	0.1066	0.1066
4:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	6.74752E-05	7.0215E-05	6.55572E-05	4.16592E-05	0.1668	0.1668	0.1668	0.1668
5:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000132726	0.000138115	0.000128953	8.19449E-05	0.3282	0.3282	0.3282	0.3282
6:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000223764	0.00023285	0.000217404	0.000138152	0.5532	0.5532	0.5532	0.5532
7:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.00030974	0.000322316	0.000300935	0.000191233	0.7658	0.7658	0.7658	0.7658
8:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000333895	0.000347453	0.000324404	0.000206147	0.8255	0.8255	0.8255	0.8255
9:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000335495	0.000349118	0.000325959	0.000207135	0.8295	0.8295	0.8295	0.8295
10:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000339114	0.000352884	0.000329475	0.000209369	0.8384	0.8384	0.8384	0.8384
11:00:00 AM	0.001021	0.001021002	0.000898027	0.000467683	0.000345457	0.000359484	0.000335637	0.000213285	0.8541	0.8541	0.8541	0.8541
12:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000356575	0.000371053	0.000346439	0.000220149	0.8816	0.8816	0.8816	0.8816
1:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000368353	0.00038331	0.000357883	0.000227421	0.9107	0.9107	0.9107	0.9107
2:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000393969	0.000409966	0.00038277	0.000243236	0.9740	0.9740	0.9740	0.9740
3:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000400202	0.000416452	0.000388826	0.000247085	0.9895	0.9895	0.9895	0.9895
4:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000404466	0.000420889	0.000392969	0.000249717	1.0000	1.0000	1.0000	1.0000
5:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000395508	0.000411567	0.000384266	0.000244187	0.9779	0.9779	0.9779	0.9779
6:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000355192	0.000369614	0.000345095	0.000219295	0.8782	0.8782	0.8782	0.8782
7:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000297065	0.000309127	0.000288621	0.000183408	0.7345	0.7345	0.7345	0.7345
8:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000248514	0.000258605	0.00024145	0.000153433	0.6144	0.6144	0.6144	0.6144
9:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000215189	0.000223927	0.000209072	0.000132858	0.5320	0.5320	0.5320	0.5320
10:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000171277	0.000178232	0.000166409	0.000105747	0.4235	0.4235	0.4235	0.4235
11:00:00 PM	0.001021	0.001021002	0.000898027	0.000467683	0.000118316	0.00012312	0.000114953	7.30482E-05	0.2925	0.2925	0.2925	0.2925
				MAX:	**0.000404466**	**0.000420889**	**0.000392969**	**0.000249717**				

Time	EMISSION FACTORS Car PM2.5 PMTW [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Car PM2.5 PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Car BWTW PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Total Car Exhaust + PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	5.59647E-05	5.82371E-05	6.19462E-05	7.556E-05	0.1868	0.1868	0.1868	0.1868	0.0001	0.0001	0.0001	0.0001
1:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	3.69555E-05	3.8456E-05	4.09053E-05	4.9895E-05	0.1233	0.1233	0.1233	0.1233	0.0001	0.0001	0.0001	0.0001
2:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	3.1117E-05	3.23805E-05	3.44429E-05	4.20123E-05	0.1039	0.1039	0.1039	0.1039	0.0001	0.0001	0.0001	0.0001
3:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	3.19328E-05	3.32294E-05	3.53458E-05	4.31137E-05	0.1066	0.1066	0.1066	0.1066	0.0001	0.0001	0.0001	0.0001
4:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	4.99844E-05	5.2014E-05	5.53268E-05	6.74858E-05	0.1668	0.1668	0.1668	0.1668	0.0001	0.0001	0.0001	0.0001
5:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	9.83209E-05	0.000102313	0.000108829	0.000132747	0.3282	0.3282	0.3282	0.3282	0.0002	0.0002	0.0002	0.0002
6:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.000165761	0.000172491	0.000183477	0.0002238	0.5532	0.5532	0.5532	0.5532	0.0004	0.0004	0.0004	0.0004
7:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.00022945	0.000238766	0.000253973	0.000309788	0.7658	0.7658	0.7658	0.7658	0.0005	0.0006	0.0006	0.0005
8:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.000247343	0.000257387	0.00027378	0.000333948	0.8255	0.8255	0.8255	0.8255	0.0006	0.0006	0.0006	0.0005
9:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.000248529	0.00025862	0.000275092	0.000335548	0.8295	0.8295	0.8295	0.8295	0.0006	0.0006	0.0006	0.0005
10:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.00025121	0.00026141	0.000278059	0.000339167	0.8384	0.8384	0.8384	0.8384	0.0006	0.0006	0.0006	0.0005
11:00:00 AM	0.00075634	0.00075634	0.000757886	0.000757624	0.000255908	0.000266299	0.00028326	0.000345511	0.8541	0.8541	0.8541	0.8541	0.0006	0.0006	0.0006	0.0006
12:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000264144	0.00027487	0.000292376	0.000356631	0.8816	0.8816	0.8816	0.8816	0.0006	0.0006	0.0006	0.0006
1:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000272869	0.000283949	0.000302034	0.000368411	0.9107	0.9107	0.9107	0.9107	0.0006	0.0007	0.0007	0.0006
2:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000291845	0.000303695	0.000323038	0.000394031	0.9740	0.9740	0.9740	0.9740	0.0007	0.0007	0.0007	0.0006
3:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000296462	0.0003085	0.000328149	0.000400265	0.9895	0.9895	0.9895	0.9895	0.0007	0.0007	0.0007	0.0006
4:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000299621	0.000311787	0.000331645	0.000404529	1.0000	1.0000	1.0000	1.0000	0.0007	0.0007	0.0007	0.0007
5:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000292985	0.000304882	0.0003243	0.00039557	0.9779	0.9779	0.9779	0.9779	0.0007	0.0007	0.0007	0.0006
6:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.00026312	0.000273803	0.000291242	0.000355247	0.8782	0.8782	0.8782	0.8782	0.0006	0.0006	0.0006	0.0006
7:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.00022006	0.000228996	0.000243581	0.000297112	0.7345	0.7345	0.7345	0.7345	0.0005	0.0005	0.0005	0.0005
8:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000184095	0.00019157	0.000203771	0.000248553	0.6144	0.6144	0.6144	0.6144	0.0004	0.0005	0.0004	0.0004
9:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000159408	0.000165881	0.000176446	0.000215223	0.5320	0.5320	0.5320	0.5320	0.0004	0.0004	0.0004	0.0003
10:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	0.000126879	0.000132031	0.00014044	0.000171304	0.4235	0.4235	0.4235	0.4235	0.0003	0.0003	0.0003	0.0003
11:00:00 PM	0.00075634	0.00075634	0.000757886	0.000757624	8.76462E-05	9.1205E-05	9.70139E-05	0.000118334	0.2925	0.2925	0.2925	0.2925	0.0002	0.0002	0.0002	0.0002
				MAX:	**0.000299621**	**0.000311787**	**0.000331645**	**0.000404529**				MAX:	**0.000704087**	**0.000732675**	**0.000724613**	**0.000654246**

Trucks

I-280 Mainline South

Time	Length (mi)	2023 Truck Flow (vehicle / hr)	2027 Average Truck Flow (vehicle / hr)	2027-2028 Average Truck Flow (vehicle / hr)	2029 - 2042 Average Truck Flow (vehicle / hr)	2043 - 2056 Average Truck Flow (vehicle / hr)	Truck Speed mph
12:00:00 AM	0.445026048	9.62	10.01	10.42	11.06	13.49	60
1:00:00 AM	0.445026048	1.67	1.74	1.81	1.92	2.35	60
2:00:00 AM	0.445026048	0.11	0.11	0.11	0.12	0.15	60
3:00:00 AM	0.445026048	0.01	0.01	0.01	0.01	0.02	60
4:00:00 AM	0.445026048	4.35	4.53	4.71	5.00	6.10	60
5:00:00 AM	0.445026048	22.56	23.48	24.43	25.93	31.65	60
6:00:00 AM	0.445026048	50.55	52.60	54.74	58.11	70.90	60
7:00:00 AM	0.445026048	83.78	87.18	90.72	96.30	117.51	60
8:00:00 AM	0.445026048	94.94	98.79	102.80	109.13	133.16	60
9:00:00 AM	0.445026048	98.37	102.36	106.52	113.07	137.97	60
10:00:00 AM	0.445026048	103.50	107.71	112.08	118.98	145.17	60
11:00:00 AM	0.445026048	106.52	110.84	115.34	122.44	149.40	60
12:00:00 PM	0.445026048	111.58	116.12	120.83	128.26	156.51	60
1:00:00 PM	0.445026048	116.67	121.40	126.33	134.11	163.64	60
2:00:00 PM	0.445026048	127.34	132.51	137.89	146.38	178.61	60
3:00:00 PM	0.445026048	132.43	137.80	143.40	152.22	185.74	60
4:00:00 PM	0.445026048	130.64	135.95	141.47	150.17	183.23	60
5:00:00 PM	0.445026048	125.62	130.72	136.02	144.39	176.19	60
6:00:00 PM	0.445026048	115.15	119.82	124.69	132.36	161.50	60
7:00:00 PM	0.445026048	93.18	96.97	100.90	107.11	130.70	60
8:00:00 PM	0.445026048	73.81	76.81	79.93	84.85	103.53	60
9:00:00 PM	0.445026048	59.87	62.31	64.83	68.82	83.98	60
10:00:00 PM	0.445026048	44.62	46.44	48.32	51.29	62.59	60
11:00:00 PM	0.445026048	23.74	24.71	25.71	27.29	33.30	60

Time	EMISSION FACTORS Truck PM2.5 RUNEX [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Truck PM2.5 Exhaust Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Truck Exhaust PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	3.18304E-05	3.31229E-05	3.37459E-05	3.86842E-05	0.0726	0.0726	0.0726	0.0726
1:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	5.53573E-06	5.7605E-06	5.86886E-06	6.72768E-06	0.0126	0.0126	0.0126	0.0126
2:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	3.49242E-07	3.63422E-07	3.70258E-07	4.2444E-07	0.0008	0.0008	0.0008	0.0008
3:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	3.66605E-08	3.8149E-08	3.88666E-08	4.45542E-08	0.0001	0.0001	0.0001	0.0001
4:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	1.43892E-05	1.49735E-05	1.52551E-05	1.74875E-05	0.0328	0.0328	0.0328	0.0328
5:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	7.46499E-05	7.76809E-05	7.91421E-05	9.07234E-05	0.1704	0.1704	0.1704	0.1704
6:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000167254	0.000174045	0.000177319	0.000203267	0.3817	0.3817	0.3817	0.3817
7:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.00027719	0.000288445	0.00029387	0.000336874	0.6326	0.6326	0.6326	0.6326
8:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000314107	0.000326861	0.000333009	0.00038174	0.7169	0.7169	0.7169	0.7169
9:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000325453	0.000338668	0.000345038	0.00039553	0.7428	0.7428	0.7428	0.7428
10:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000342454	0.00035636	0.000363063	0.000416192	0.7816	0.7816	0.7816	0.7816
11:00:00 AM	0.02572034	0.025720336	0.024685487	0.023191344	0.000352417	0.000366726	0.000373625	0.000428299	0.8043	0.8043	0.8043	0.8043
12:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000369189	0.00038418	0.000391406	0.000448683	0.8426	0.8426	0.8426	0.8426
1:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000386007	0.000401681	0.000409236	0.000469122	0.8810	0.8810	0.8810	0.8810
2:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000421329	0.000438437	0.000446684	0.00051205	0.9616	0.9616	0.9616	0.9616
3:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000438142	0.000455932	0.000464509	0.000532483	1.0000	1.0000	1.0000	1.0000
4:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000432241	0.000449792	0.000458253	0.000525311	0.9865	0.9865	0.9865	0.9865
5:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000415615	0.00043249	0.000440626	0.000505105	0.9486	0.9486	0.9486	0.9486
6:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000380981	0.00039645	0.000403908	0.000463014	0.8695	0.8695	0.8695	0.8695
7:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000308303	0.000320821	0.000326856	0.000374686	0.7037	0.7037	0.7037	0.7037
8:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000244216	0.000254132	0.000258912	0.0002968	0.5574	0.5574	0.5574	0.5574
9:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000198099	0.000206143	0.000210021	0.000240754	0.4521	0.4521	0.4521	0.4521
10:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	0.000147645	0.00015364	0.00015653	0.000179436	0.3370	0.3370	0.3370	0.3370
11:00:00 PM	0.02572034	0.025720336	0.024685487	0.023191344	7.85539E-05	8.17435E-05	8.32811E-05	9.54681E-05	0.1793	0.1793	0.1793	0.1793
				MAX:	**0.000438142**	**0.000455932**	**0.000464509**	**0.000532483**				

Time	EMISSION FACTORS Truck PM2.5 PMTW [grams/mile] 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Truck PM2.5 PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056	SCALAR VALUES FOR AERMOD Truck BWTW PM2.5 Scalar 2027	2027-2028	2029-2042	2043-2056	EMISSION RATES Total Truck Exhaust + PMBW Emissions [grams/second] 2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	3.50358E-05	3.64584E-05	3.83707E-05	4.55551E-05	0.0726	0.0726	0.0726	0.0726	0.0001	0.0001	0.0001	0.0001
1:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	6.09319E-06	6.3406E-06	6.67316E-06	7.92262E-06	0.0126	0.0126	0.0126	0.0126	0.0000	0.0000	0.0000	0.0000
2:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	3.84411E-07	4.0002E-07	4.21001E-07	4.99828E-07	0.0008	0.0008	0.0008	0.0008	0.0000	0.0000	0.0000	0.0000
3:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	4.03523E-08	4.19907E-08	4.41931E-08	5.24677E-08	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
4:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	1.58383E-05	1.64814E-05	1.73458E-05	2.05936E-05	0.0328	0.0328	0.0328	0.0328	0.0000	0.0000	0.0000	0.0000
5:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	8.21673E-05	8.55036E-05	8.99882E-05	0.000106837	0.1704	0.1704	0.1704	0.1704	0.0002	0.0002	0.0002	0.0002
6:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000184097	0.000191572	0.00020162	0.000239371	0.3817	0.3817	0.3817	0.3817	0.0004	0.0004	0.0004	0.0004
7:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000305103	0.000317492	0.000334144	0.000396708	0.6326	0.6326	0.6326	0.6326	0.0006	0.0006	0.0006	0.0007
8:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000345738	0.000359776	0.000378647	0.000449543	0.7169	0.7169	0.7169	0.7169	0.0007	0.0007	0.0007	0.0008
9:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000358227	0.000372773	0.000392324	0.000465782	0.7428	0.7428	0.7428	0.7428	0.0007	0.0007	0.0007	0.0009
10:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.00037694	0.000392246	0.000412819	0.000490114	0.7816	0.7816	0.7816	0.7816	0.0007	0.0007	0.0008	0.0009
11:00:00 AM	0.028310438	0.028310438	0.02806853	0.027310491	0.000387906	0.000403657	0.000424828	0.000504372	0.8043	0.8043	0.8043	0.8043	0.0007	0.0008	0.0008	0.0009
12:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000406367	0.000422868	0.000445047	0.000528376	0.8426	0.8426	0.8426	0.8426	0.0008	0.0008	0.0008	0.0010
1:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000424879	0.000442131	0.00046532	0.000552445	0.8810	0.8810	0.8810	0.8810	0.0008	0.0008	0.0009	0.0010
2:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000463758	0.000482589	0.0005079	0.000602998	0.9616	0.9616	0.9616	0.9616	0.0009	0.0009	0.0010	0.0011
3:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000482264	0.000501846	0.000528168	0.00062706	1.0000	1.0000	1.0000	1.0000	0.0009	0.0010	0.0010	0.0012
4:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000475769	0.000495087	0.000521054	0.000618615	0.9865	0.9865	0.9865	0.9865	0.0009	0.0009	0.0010	0.0011
5:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000457468	0.000476043	0.000501011	0.000594819	0.9486	0.9486	0.9486	0.9486	0.0009	0.0009	0.0009	0.0011
6:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000419347	0.000436374	0.000459261	0.000545252	0.8695	0.8695	0.8695	0.8695	0.0008	0.0008	0.0009	0.0010
7:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.00033935	0.000353129	0.00037165	0.000441237	0.7037	0.7037	0.7037	0.7037	0.0006	0.0007	0.0007	0.0008
8:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000268809	0.000279724	0.000294395	0.000349517	0.5574	0.5574	0.5574	0.5574	0.0005	0.0005	0.0006	0.0006
9:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000218048	0.000226902	0.000238803	0.000283516	0.4521	0.4521	0.4521	0.4521	0.0004	0.0004	0.0004	0.0005
10:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	0.000162514	0.000169112	0.000177982	0.000211307	0.3370	0.3370	0.3370	0.3370	0.0003	0.0003	0.0003	0.0004
11:00:00 PM	0.028310438	0.028310438	0.02806853	0.027310491	8.64645E-05	8.99753E-05	9.46945E-05	0.000112425	0.1793	0.1793	0.1793	0.1793	0.0002	0.0002	0.0002	0.0002
				MAX:	**0.000482264**	**0.000501846**	**0.000528168**	**0.00062706**				MAX:	**0.000920406**	**0.000957779**	**0.000992676**	**0.001159543**

Cars

I-280 Mainline South

Time	Length (mi)	2023 Car Flow (vehicle / hr)	2027 Average Car Flow (vehicle / hr)	2027-2028 Average Car Flow (vehicle / hr)	2029 - 2042 Average Car Flow (vehicle / hr)	2043 - 2056 Average Car Flow (vehicle / hr)	Car Speed mph	EMISSION FACTORS Car PM2.5 RUNEX [grams/mile]				EMISSION RATES Car PM2.5 Exhaust Emissions [grams/second]			
								2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.445026048	655.88	682.51	710.23	753.92	919.92	65	0.001021	0.001021002	0.000898027	0.000467683	8.6143E-05	8.96408E-05	8.36944E-05	5.31847E-05
1:00:00 AM	0.445026048	444.86	462.93	481.72	511.36	623.96	65	0.001021	0.001021002	0.000898027	0.000467683	5.84282E-05	6.08006E-05	5.67674E-05	3.60736E-05
2:00:00 AM	0.445026048	365.40	380.24	395.68	420.02	512.50	65	0.001021	0.001021002	0.000898027	0.000467683	4.79914E-05	4.99401E-05	4.66273E-05	2.96299E-05
3:00:00 AM	0.445026048	353.63	367.98	382.93	406.48	495.99	65	0.001021	0.001021002	0.000898027	0.000467683	4.6445E-05	4.83309E-05	4.51248E-05	2.86752E-05
4:00:00 AM	0.445026048	512.11	532.90	554.54	588.65	718.27	65	0.001021	0.001021002	0.000898027	0.000467683	6.726E-05	6.9991E-05	6.53481E-05	4.15263E-05
5:00:00 AM	0.445026048	955.46	994.25	1034.62	1098.27	1340.10	65	0.001021	0.001021002	0.000898027	0.000467683	0.000125489	0.000130585	0.000121922	7.7477E-05
6:00:00 AM	0.445026048	1550.88	1613.85	1679.38	1782.69	2175.22	65	0.001021	0.001021002	0.000898027	0.000467683	0.000203691	0.000211962	0.000197901	0.000125759
7:00:00 AM	0.445026048	2190.11	2279.04	2371.58	2517.48	3071.80	65	0.001021	0.001021002	0.000898027	0.000467683	0.000287648	0.000299328	0.000279472	0.000177594
8:00:00 AM	0.445026048	2389.98	2487.02	2588.01	2747.22	3352.13	65	0.001021	0.001021002	0.000898027	0.000467683	0.000313899	0.000326644	0.000304976	0.000193801
9:00:00 AM	0.445026048	2454.98	2554.67	2658.40	2821.94	3443.30	65	0.001021	0.001021002	0.000898027	0.000467683	0.000322436	0.000335528	0.000313271	0.000199072
10:00:00 AM	0.445026048	2544.88	2648.21	2755.74	2925.27	3569.39	65	0.001021	0.001021002	0.000898027	0.000467683	0.000334243	0.000347815	0.000324742	0.000206362
11:00:00 AM	0.445026048	2629.18	2735.93	2847.02	3022.17	3687.62	65	0.001021	0.001021002	0.000898027	0.000467683	0.000345315	0.000359336	0.000335499	0.000213197
12:00:00 PM	0.445026048	2723.73	2834.33	2949.41	3130.86	3820.24	65	0.001021	0.001021002	0.000898027	0.000467683	0.000357733	0.000372259	0.000347565	0.000220864
1:00:00 PM	0.445026048	2796.71	2910.26	3028.43	3214.74	3922.60	65	0.001021	0.001021002	0.000898027	0.000467683	0.000367318	0.000382232	0.000356877	0.000226782
2:00:00 PM	0.445026048	3028.54	3151.51	3279.48	3481.23	4247.76	65	0.001021	0.001021002	0.000898027	0.000467683	0.000397767	0.000413918	0.00038646	0.000245581
3:00:00 PM	0.445026048	3114.56	3241.02	3372.62	3580.10	4368.41	65	0.001021	0.001021002	0.000898027	0.000467683	0.000409064	0.000425674	0.000397437	0.000252556
4:00:00 PM	0.445026048	3149.46	3277.34	3410.41	3620.22	4417.36	65	0.001021	0.001021002	0.000898027	0.000467683	0.000413648	0.000430443	0.00040189	0.000255386
5:00:00 PM	0.445026048	3093.41	3219.02	3349.72	3555.80	4338.75	65	0.001021	0.001021002	0.000898027	0.000467683	0.000406287	0.000422784	0.000394738	0.000250841
6:00:00 PM	0.445026048	2780.56	2893.46	3010.95	3196.18	3899.95	65	0.001021	0.001021002	0.000898027	0.000467683	0.000365197	0.000380026	0.000354816	0.000225473
7:00:00 PM	0.445026048	2350.07	2445.49	2544.79	2701.34	3296.15	65	0.001021	0.001021002	0.000898027	0.000467683	0.000308657	0.000321189	0.000299883	0.000190565
8:00:00 PM	0.445026048	1977.96	2058.28	2141.85	2273.62	2774.25	65	0.001021	0.001021002	0.000898027	0.000467683	0.000259785	0.000270333	0.0002524	0.000160391
9:00:00 PM	0.445026048	1742.42	1813.17	1886.79	2002.87	2443.88	65	0.001021	0.001021002	0.000898027	0.000467683	0.000228848	0.000238141	0.000222343	0.000141291
10:00:00 PM	0.445026048	1421.21	1478.92	1538.97	1633.65	1993.36	65	0.001021	0.001021002	0.000898027	0.000467683	0.000186661	0.00019424	0.000181355	0.000115245
11:00:00 PM	0.445026048	1008.67	1049.63	1092.24	1159.44	1414.74	65	0.001021	0.001021002	0.000898027	0.000467683	0.000132478	0.000137857	0.000128712	8.17919E-05
											MAX:	**0.000413648**	**0.000430443**	**0.00040189**	**0.000255386**

Time	SCALAR VALUES FOR AERMOD Car Exhaust PM2.5 Scalar				EMISSION FACTORS Car PM2.5 PMTW [grams/mile]				EMISSION RATES Car PM2.5 PMBW Emissions [grams/second]				SCALAR VALUES FOR AERMOD Car BWTW PM2.5 Scalar				EMISSION RATES Total Car Exhaust + PMBW Emissions [grams/second]			
	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.2083	0.2083	0.2083	0.2083	0.00075634	0.00075634	0.000757886	0.000757624	6.38132E-05	6.64043E-05	7.06336E-05	8.61565E-05	0.2083	0.2083	0.2083	0.2083	0.0001	0.0002	0.0002	0.0001
1:00:00 AM	0.1413	0.1413	0.1413	0.1413	0.00075634	0.00075634	0.000757886	0.000757624	4.32826E-05	4.504E-05	4.79086E-05	5.84374E-05	0.1413	0.1413	0.1413	0.1413	0.0001	0.0001	0.0001	0.0001
2:00:00 AM	0.1160	0.1160	0.1160	0.1160	0.00075634	0.00075634	0.000757886	0.000757624	3.55512E-05	3.69947E-05	3.93509E-05	4.7999E-05	0.1160	0.1160	0.1160	0.1160	0.0001	0.0001	0.0001	0.0001
3:00:00 AM	0.1123	0.1123	0.1123	0.1123	0.00075634	0.00075634	0.000757886	0.000757624	3.44056E-05	3.58027E-05	3.80829E-05	4.64523E-05	0.1123	0.1123	0.1123	0.1123	0.0001	0.0001	0.0001	0.0001
4:00:00 AM	0.1626	0.1626	0.1626	0.1626	0.00075634	0.00075634	0.000757886	0.000757624	4.9825E-05	5.18481E-05	5.51503E-05	6.72705E-05	0.1626	0.1626	0.1626	0.1626	0.0001	0.0001	0.0001	0.0001
5:00:00 AM	0.3034	0.3034	0.3034	0.3034	0.00075634	0.00075634	0.000757886	0.000757624	9.29601E-05	9.67347E-05	0.000102896	0.000125509	0.3034	0.3034	0.3034	0.3034	0.0002	0.0002	0.0002	0.0002
6:00:00 AM	0.4924	0.4924	0.4924	0.4924	0.00075634	0.00075634	0.000757886	0.000757624	0.000150891	0.000157017	0.000167018	0.000203723	0.4924	0.4924	0.4924	0.4924	0.0004	0.0004	0.0004	0.0003
7:00:00 AM	0.6954	0.6954	0.6954	0.6954	0.00075634	0.00075634	0.000757886	0.000757624	0.000213085	0.000221737	0.000235859	0.000287693	0.6954	0.6954	0.6954	0.6954	0.0005	0.0005	0.0005	0.0005
8:00:00 AM	0.7589	0.7589	0.7589	0.7589	0.00075634	0.00075634	0.000757886	0.000757624	0.00023253	0.000241972	0.000257384	0.000313948	0.7589	0.7589	0.7589	0.7589	0.0005	0.0006	0.0006	0.0005
9:00:00 AM	0.7795	0.7795	0.7795	0.7795	0.00075634	0.00075634	0.000757886	0.000757624	0.000238855	0.000248553	0.000264384	0.000322487	0.7795	0.7795	0.7795	0.7795	0.0006	0.0006	0.0006	0.0005
10:00:00 AM	0.8080	0.8080	0.8080	0.8080	0.00075634	0.00075634	0.000757886	0.000757624	0.000247601	0.000257655	0.000274065	0.000334296	0.8080	0.8080	0.8080	0.8080	0.0006	0.0006	0.0006	0.0005
11:00:00 AM	0.8348	0.8348	0.8348	0.8348	0.00075634	0.00075634	0.000757886	0.000757624	0.000255803	0.000266189	0.000283143	0.000345369	0.8348	0.8348	0.8348	0.8348	0.0006	0.0006	0.0006	0.0006
12:00:00 PM	0.8648	0.8648	0.8648	0.8648	0.00075634	0.00075634	0.000757886	0.000757624	0.000265002	0.000275763	0.000293326	0.000357789	0.8648	0.8648	0.8648	0.8648	0.0006	0.0006	0.0006	0.0006
1:00:00 PM	0.8880	0.8880	0.8880	0.8880	0.00075634	0.00075634	0.000757886	0.000757624	0.000272102	0.000283151	0.000301185	0.000367375	0.8880	0.8880	0.8880	0.8880	0.0006	0.0007	0.0007	0.0006
2:00:00 PM	0.9616	0.9616	0.9616	0.9616	0.00075634	0.00075634	0.000757886	0.000757624	0.000294658	0.000306623	0.000326152	0.000397829	0.9616	0.9616	0.9616	0.9616	0.0007	0.0007	0.0007	0.0006
3:00:00 PM	0.9889	0.9889	0.9889	0.9889	0.00075634	0.00075634	0.000757886	0.000757624	0.000303027	0.000315332	0.000335415	0.000409128	0.9889	0.9889	0.9889	0.9889	0.0007	0.0007	0.0007	0.0007
4:00:00 PM	1.0000	1.0000	1.0000	1.0000	0.00075634	0.00075634	0.000757886	0.000757624	0.000306423	0.000318865	0.000339174	0.000413713	1.0000	1.0000	1.0000	1.0000	0.0007	0.0007	0.0007	0.0007
5:00:00 PM	0.9822	0.9822	0.9822	0.9822	0.00075634	0.00075634	0.000757886	0.000757624	0.00030097	0.000313191	0.000333138	0.000406351	0.9822	0.9822	0.9822	0.9822	0.0007	0.0007	0.0007	0.0007
6:00:00 PM	0.8829	0.8829	0.8829	0.8829	0.00075634	0.00075634	0.000757886	0.000757624	0.000270531	0.000281516	0.000299446	0.000365254	0.8829	0.8829	0.8829	0.8829	0.0006	0.0007	0.0007	0.0006
7:00:00 PM	0.7462	0.7462	0.7462	0.7462	0.00075634	0.00075634	0.000757886	0.000757624	0.000228647	0.000237931	0.000253085	0.000308705	0.7462	0.7462	0.7462	0.7462	0.0005	0.0006	0.0006	0.0005
8:00:00 PM	0.6280	0.6280	0.6280	0.6280	0.00075634	0.00075634	0.000757886	0.000757624	0.000192444	0.000200258	0.000213012	0.000259825	0.6280	0.6280	0.6280	0.6280	0.0005	0.0005	0.0005	0.0004
9:00:00 PM	0.5532	0.5532	0.5532	0.5532	0.00075634	0.00075634	0.000757886	0.000757624	0.000169527	0.00017641	0.000187646	0.000228884	0.5532	0.5532	0.5532	0.5532	0.0004	0.0004	0.0004	0.0004
10:00:00 PM	0.4513	0.4513	0.4513	0.4513	0.00075634	0.00075634	0.000757886	0.000757624	0.000138275	0.00014389	0.000153054	0.000186691	0.4513	0.4513	0.4513	0.4513	0.0003	0.0003	0.0003	0.0003
11:00:00 PM	0.3203	0.3203	0.3203	0.3203	0.00075634	0.00075634	0.000757886	0.000757624	9.81374E-05	0.000102122	0.000108626	0.000132499	0.3203	0.3203	0.3203	0.3203	0.0002	0.0002	0.0002	0.0002
								MAX:	**0.000306423**	**0.000318865**	**0.000339174**	**0.000413713**				MAX:	**0.000720071**	**0.000749308**	**0.000741063**	**0.000669099**

Trucks
I-280 OFFRAMP South

Time	Length (mi)	2023 Truck Flow (vehicle / hr)	2027 Average Truck Flow (vehicle / hr)	2027-2028 Average Truck Flow (vehicle / hr)	2029 - 2042 Average Truck Flow (vehicle / hr)	2043 - 2056 Average Truck Flow (vehicle / hr)	Truck Speed mph	EMISSION FACTORS Truck PM2.5 RUNEX [grams/mile]				EMISSION RATES Truck PM2.5 Exhaust Emissions [grams/second]			
								2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.19908733	8.36	8.70	9.05	9.61	11.73	15	0.02487489	0.024874886	0.019753728	0.007576272	1.19674E-05	1.24533E-05	1.04979E-05	4.91287E-06
1:00:00 AM	0.19908733	1.63	1.69	1.76	1.87	2.28	15	0.02487489	0.024874886	0.019753728	0.007576272	2.33162E-06	2.42629E-06	2.04531E-06	9.5718E-07
2:00:00 AM	0.19908733	0.10	0.11	0.11	0.12	0.14	15	0.02487489	0.024874886	0.019753728	0.007576272	1.47125E-07	1.53099E-07	1.29059E-07	6.0398E-08
3:00:00 AM	0.19908733	0.01	0.01	0.01	0.01	0.02	15	0.02487489	0.024874886	0.019753728	0.007576272	1.58614E-08	1.65054E-08	1.39137E-08	6.51143E-09
4:00:00 AM	0.19908733	4.01	4.17	4.34	4.61	5.62	15	0.02487489	0.024874886	0.019753728	0.007576272	5.73785E-06	5.97083E-06	5.03328E-06	2.35551E-06
5:00:00 AM	0.19908733	17.15	17.85	18.57	19.72	24.06	15	0.02487489	0.024874886	0.019753728	0.007576272	2.45534E-05	2.55504E-05	2.15384E-05	1.00797E-05
6:00:00 AM	0.19908733	36.43	37.91	39.45	41.88	51.10	15	0.02487489	0.024874886	0.019753728	0.007576272	5.21561E-05	5.42739E-05	4.57517E-05	2.14112E-05
7:00:00 AM	0.19908733	59.09	61.49	63.99	67.92	82.88	15	0.02487489	0.024874886	0.019753728	0.007576272	8.45886E-05	8.80233E-05	7.42017E-05	3.47254E-05
8:00:00 AM	0.19908733	66.71	69.42	72.24	76.68	93.57	15	0.02487489	0.024874886	0.019753728	0.007576272	9.54973E-05	9.93749E-05	8.37708E-05	3.92037E-05
9:00:00 AM	0.19908733	69.06	71.87	74.79	79.39	96.87	15	0.02487489	0.024874886	0.019753728	0.007576272	9.88639E-05	0.000102878	8.6724E-05	4.05857E-05
10:00:00 AM	0.19908733	72.66	75.61	78.68	83.52	101.91	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000104007	0.00010823	9.12355E-05	4.26971E-05
11:00:00 AM	0.19908733	74.73	77.77	80.92	85.90	104.82	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000106977	0.000111321	9.38409E-05	4.39163E-05
12:00:00 PM	0.19908733	78.11	81.28	84.58	89.78	109.55	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000111811	0.000116351	9.80811E-05	4.59007E-05
1:00:00 PM	0.19908733	81.43	84.74	88.18	93.60	114.21	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000116565	0.000121298	0.000102252	4.78525E-05
2:00:00 PM	0.19908733	88.86	92.47	96.22	102.14	124.64	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000127204	0.000132369	0.000111584	5.222E-05
3:00:00 PM	0.19908733	92.79	96.56	100.48	106.66	130.14	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000132827	0.00013822	0.000116517	5.45283E-05
4:00:00 PM	0.19908733	92.14	95.88	99.78	105.92	129.24	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000131901	0.000137257	0.000115705	5.41483E-05
5:00:00 PM	0.19908733	89.06	92.67	96.44	102.37	124.91	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000127487	0.000132663	0.000111832	5.2336E-05
6:00:00 PM	0.19908733	80.77	84.05	87.47	92.85	113.29	15	0.02487489	0.024874886	0.019753728	0.007576272	0.000115626	0.000120321	0.000101428	4.74668E-05
7:00:00 PM	0.19908733	66.13	68.82	71.61	76.02	92.76	15	0.02487489	0.024874886	0.019753728	0.007576272	9.46707E-05	9.85147E-05	8.30457E-05	3.88643E-05
8:00:00 PM	0.19908733	52.43	54.56	56.77	60.27	73.54	15	0.02487489	0.024874886	0.019753728	0.007576272	7.50509E-05	7.80982E-05	6.58351E-05	3.081E-05
9:00:00 PM	0.19908733	43.41	45.17	47.00	49.89	60.88	15	0.02487489	0.024874886	0.019753728	0.007576272	6.21354E-05	6.46583E-05	5.45056E-05	2.55079E-05
10:00:00 PM	0.19908733	33.08	34.42	35.82	38.02	46.39	15	0.02487489	0.024874886	0.019753728	0.007576272	4.73474E-05	4.92699E-05	4.15334E-05	1.94371E-05
11:00:00 PM	0.19908733	19.29	20.07	20.89	22.17	27.05	15	0.02487489	0.024874886	0.019753728	0.007576272	2.76113E-05	2.87324E-05	2.42208E-05	1.1335E-05
											MAX:	**0.000132827**	**0.00013822**	**0.000116517**	**5.45283E-05**

Time	SCALAR VALUES FOR AERMOD Truck Exhaust PM2.5 Scalar				EMISSION FACTORS Truck PM2.5 PMTW [grams/mile]				EMISSION RATES Truck PM2.5 PMBW Emissions [grams/second]				SCALAR VALUES FOR AERMOD Truck BWTW PM2.5 Scalar				EMISSION RATES Total Truck Exhaust + PMBW Emissions [grams/second]			
	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.0901	0.0901	0.0901	0.0901	0.057811255	0.057811255	0.057130668	0.054116801	2.78132E-05	2.89425E-05	3.03614E-05	3.50923E-05	0.0901	0.0901	0.0901	0.0901	0.0000	0.0000	0.0000	0.0000
1:00:00 AM	0.0176	0.0176	0.0176	0.0176	0.057811255	0.057811255	0.057130668	0.054116801	5.41888E-06	5.6389E-06	5.91534E-06	6.83707E-06	0.0176	0.0176	0.0176	0.0176	0.0000	0.0000	0.0000	0.0000
2:00:00 AM	0.0011	0.0011	0.0011	0.0011	0.057811255	0.057811255	0.057130668	0.054116801	3.41931E-07	3.55815E-07	3.73258E-07	4.31419E-07	0.0011	0.0011	0.0011	0.0011	0.0000	0.0000	0.0000	0.0000
3:00:00 AM	0.0001	0.0001	0.0001	0.0001	0.057811255	0.057811255	0.057130668	0.054116801	3.68631E-08	3.83599E-08	4.02404E-08	4.65107E-08	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
4:00:00 AM	0.0432	0.0432	0.0432	0.0432	0.057811255	0.057811255	0.057130668	0.054116801	1.33352E-05	1.38767E-05	1.4557E-05	1.68252E-05	0.0432	0.0432	0.0432	0.0432	0.0000	0.0000	0.0000	0.0000
5:00:00 AM	0.1849	0.1849	0.1849	0.1849	0.057811255	0.057811255	0.057130668	0.054116801	5.70641E-05	5.93811E-05	6.22922E-05	7.19985E-05	0.1849	0.1849	0.1849	0.1849	0.0001	0.0001	0.0001	0.0001
6:00:00 AM	0.3927	0.3927	0.3927	0.3927	0.057811255	0.057811255	0.057130668	0.054116801	0.000121215	0.000126137	0.000132321	0.000152939	0.3927	0.3927	0.3927	0.3927	0.0002	0.0002	0.0002	0.0002
7:00:00 AM	0.6368	0.6368	0.6368	0.6368	0.057811255	0.057811255	0.057130668	0.054116801	0.000196591	0.000204573	0.000214602	0.000248041	0.6368	0.6368	0.6368	0.6368	0.0003	0.0003	0.0003	0.0003
8:00:00 AM	0.7190	0.7190	0.7190	0.7190	0.057811255	0.057811255	0.057130668	0.054116801	0.000221943	0.000230955	0.000242277	0.000280029	0.7190	0.7190	0.7190	0.7190	0.0003	0.0003	0.0003	0.0003
9:00:00 AM	0.7443	0.7443	0.7443	0.7443	0.057811255	0.057811255	0.057130668	0.054116801	0.000229768	0.000239097	0.000250819	0.000289901	0.7443	0.7443	0.7443	0.7443	0.0003	0.0003	0.0003	0.0003
10:00:00 AM	0.7830	0.7830	0.7830	0.7830	0.057811255	0.057811255	0.057130668	0.054116801	0.000241721	0.000251535	0.000263866	0.000304982	0.7830	0.7830	0.7830	0.7830	0.0003	0.0004	0.0004	0.0003
11:00:00 AM	0.8054	0.8054	0.8054	0.8054	0.057811255	0.057811255	0.057130668	0.054116801	0.000248623	0.000258718	0.000271401	0.000313691	0.8054	0.8054	0.8054	0.8054	0.0004	0.0004	0.0004	0.0004
12:00:00 PM	0.8418	0.8418	0.8418	0.8418	0.057811255	0.057811255	0.057130668	0.054116801	0.000259857	0.000270408	0.000283665	0.000327865	0.8418	0.8418	0.8418	0.8418	0.0004	0.0004	0.0004	0.0004
1:00:00 PM	0.8776	0.8776	0.8776	0.8776	0.057811255	0.057811255	0.057130668	0.054116801	0.000270907	0.000281907	0.000295727	0.000341807	0.8776	0.8776	0.8776	0.8776	0.0004	0.0004	0.0004	0.0004
2:00:00 PM	0.9577	0.9577	0.9577	0.9577	0.057811255	0.057811255	0.057130668	0.054116801	0.000295633	0.000307637	0.000322718	0.000373004	0.9577	0.9577	0.9577	0.9577	0.0004	0.0004	0.0004	0.0004
3:00:00 PM	1.0000	1.0000	1.0000	1.0000	0.057811255	0.057811255	0.057130668	0.054116801	0.000308701	0.000321235	0.000336983	0.000389492	1.0000	1.0000	1.0000	1.0000	0.0004	0.0005	0.0005	0.0004
4:00:00 PM	0.9930	0.9930	0.9930	0.9930	0.057811255	0.057811255	0.057130668	0.054116801	0.00030655	0.000318997	0.000334635	0.000386778	0.9930	0.9930	0.9930	0.9930	0.0004	0.0005	0.0005	0.0004
5:00:00 PM	0.9598	0.9598	0.9598	0.9598	0.057811255	0.057811255	0.057130668	0.054116801	0.000296289	0.00030832	0.000323435	0.000373832	0.9598	0.9598	0.9598	0.9598	0.0004	0.0004	0.0004	0.0004
6:00:00 PM	0.8705	0.8705	0.8705	0.8705	0.057811255	0.057811255	0.057130668	0.054116801	0.000268724	0.000279635	0.000293343	0.000339052	0.8705	0.8705	0.8705	0.8705	0.0004	0.0004	0.0004	0.0004
7:00:00 PM	0.7127	0.7127	0.7127	0.7127	0.057811255	0.057811255	0.057130668	0.054116801	0.000220022	0.000228956	0.00024018	0.000277605	0.7127	0.7127	0.7127	0.7127	0.0003	0.0003	0.0003	0.0003
8:00:00 PM	0.5650	0.5650	0.5650	0.5650	0.057811255	0.057811255	0.057130668	0.054116801	0.000174424	0.000181507	0.000190405	0.000220074	0.5650	0.5650	0.5650	0.5650	0.0002	0.0003	0.0003	0.0003
9:00:00 PM	0.4678	0.4678	0.4678	0.4678	0.057811255	0.057811255	0.057130668	0.054116801	0.000144408	0.000150271	0.000157638	0.000182201	0.4678	0.4678	0.4678	0.4678	0.0002	0.0002	0.0002	0.0002
10:00:00 PM	0.3565	0.3565	0.3565	0.3565	0.057811255	0.057811255	0.057130668	0.054116801	0.000110039	0.000114507	0.000120121	0.000138838	0.3565	0.3565	0.3565	0.3565	0.0002	0.0002	0.0002	0.0002
11:00:00 PM	0.2079	0.2079	0.2079	0.2079	0.057811255	0.057811255	0.057130668	0.054116801	6.41709E-05	6.67764E-05	7.00501E-05	8.09653E-05	0.2079	0.2079	0.2079	0.2079	0.0001	0.0001	0.0001	0.0001
								MAX:	**0.000308701**	**0.000321235**	**0.000336983**	**0.000389492**				MAX:	**0.000441528**	**0.000459456**	**0.0004535**	**0.00044402**

Cars
I-280 OFFRAMP South

Time	Length (mi)	2023 Car Flow (vehicle / hr)	2027 Average Car Flow (vehicle / hr)	2027-2028 Average Car Flow (vehicle / hr)	2029 - 2042 Average Car Flow (vehicle / hr)	2043 - 2056 Average Car Flow (vehicle / hr)	Car Speed mph	EMISSION FACTORS Car PM2.5 RUNEX [grams/mile]				EMISSION RATES Car PM2.5 Exhaust Emissions [grams/second]			
								2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.19908733	205.22	213.55	222.23	235.90	287.84	15	0.00324288	0.003242878	0.002852478	0.001485333	3.82984E-05	3.98534E-05	3.72122E-05	2.36437E-05
1:00:00 AM	0.19908733	144.14	149.99	156.08	165.69	202.17	15	0.00324288	0.003242878	0.002852478	0.001485333	2.68996E-05	2.79918E-05	2.61367E-05	1.66066E-05
2:00:00 AM	0.19908733	121.27	126.19	131.32	139.40	170.09	15	0.00324288	0.003242878	0.002852478	0.001485333	2.26313E-05	2.35502E-05	2.19894E-05	1.39715E-05
3:00:00 AM	0.19908733	116.18	120.90	125.81	133.55	162.95	15	0.00324288	0.003242878	0.002852478	0.001485333	2.16815E-05	2.25618E-05	2.10666E-05	1.33852E-05
4:00:00 AM	0.19908733	161.63	168.19	175.02	185.79	226.70	15	0.00324288	0.003242878	0.002852478	0.001485333	3.01631E-05	3.13878E-05	2.93077E-05	1.86213E-05
5:00:00 AM	0.19908733	291.47	303.31	315.62	335.04	408.81	15	0.00324288	0.003242878	0.002852478	0.001485333	5.43942E-05	5.66028E-05	5.28516E-05	3.35805E-05
6:00:00 AM	0.19908733	461.63	480.37	499.88	530.63	647.47	15	0.00324288	0.003242878	0.002852478	0.001485333	8.6149E-05	8.9647E-05	8.37058E-05	5.31844E-05
7:00:00 AM	0.19908733	641.11	667.14	694.23	736.93	899.20	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000119643	0.000124501	0.00011625	7.3862E-05
8:00:00 AM	0.19908733	697.12	725.43	754.88	801.32	977.77	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000130097	0.000135379	0.000126407	8.03157E-05
9:00:00 AM	0.19908733	715.54	744.59	774.82	822.49	1003.60	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000133533	0.000138955	0.000129746	8.24374E-05
10:00:00 AM	0.19908733	740.01	770.05	801.32	850.62	1037.91	15	0.00324288	0.003242878	0.002852478	0.001485333	0.0001381	0.000143707	0.000134183	8.52563E-05
11:00:00 AM	0.19908733	764.55	795.59	827.90	878.83	1072.34	15	0.00324288	0.003242878	0.002852478	0.001485333	0.00014268	0.000148473	0.000138633	8.80839E-05
12:00:00 PM	0.19908733	790.64	822.74	856.15	908.82	1108.93	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000147549	0.00015354	0.000143364	9.10899E-05
1:00:00 PM	0.19908733	810.64	843.56	877.81	931.81	1136.99	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000151282	0.000157424	0.000146991	9.33945E-05
2:00:00 PM	0.19908733	876.14	911.72	948.74	1007.10	1228.86	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000163506	0.000170145	0.000158869	0.000100941
3:00:00 PM	0.19908733	899.53	936.06	974.07	1033.99	1261.67	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000167871	0.000174687	0.00016311	0.000103636
4:00:00 PM	0.19908733	912.15	949.19	987.73	1048.50	1279.37	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000170226	0.000177138	0.000165398	0.00010509
5:00:00 PM	0.19908733	896.56	932.96	970.84	1030.57	1257.49	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000167315	0.000174109	0.00016257	0.000103293
6:00:00 PM	0.19908733	805.85	838.57	872.62	926.30	1130.26	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000150387	0.000156493	0.000146122	9.28422E-05
7:00:00 PM	0.19908733	684.01	711.78	740.68	786.25	959.37	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000127649	0.000132832	0.000124029	7.88046E-05
8:00:00 PM	0.19908733	580.89	604.47	629.02	667.71	814.74	15	0.00324288	0.003242878	0.002852478	0.001485333	0.000108405	0.000112806	0.00010533	6.6924E-05
9:00:00 PM	0.19908733	514.85	535.75	557.50	591.80	722.11	15	0.00324288	0.003242878	0.002852478	0.001485333	9.60803E-05	9.99816E-05	9.33555E-05	5.93156E-05
10:00:00 PM	0.19908733	423.17	440.36	458.24	486.43	593.53	15	0.00324288	0.003242878	0.002852478	0.001485333	7.89725E-05	8.21791E-05	7.67329E-05	4.8754E-05
11:00:00 PM	0.19908733	306.03	318.45	331.38	351.77	429.23	15	0.00324288	0.003242878	0.002852478	0.001485333	5.71108E-05	5.94298E-05	5.54912E-05	3.52576E-05
											MAX:	**0.000170226**	**0.000177138**	**0.000165398**	**0.00010509**

Time	SCALAR VALUES FOR AERMOD Car Exhaust PM2.5 Scalar				EMISSION FACTORS Car PM2.5 PMTW [grams/mile]				EMISSION RATES Car PM2.5 PMBW Emissions [grams/second]				SCALAR VALUES FOR AERMOD Car BWTW PM2.5 Scalar				EMISSION RATES Total Car Exhaust + PMBW Emissions [grams/second]			
	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056	2027	2027-2028	2029-2042	2043-2056
12:00:00 AM	0.2250	0.2250	0.2250	0.2250	0.00351935	0.00351935	0.003528066	0.003527711	4.15635E-05	4.32511E-05	4.60257E-05	5.61544E-05	0.2250	0.2250	0.2250	0.2250	0.0001	0.0001	0.0001	0.0001
1:00:00 AM	0.1580	0.1580	0.1580	0.1580	0.00351935	0.00351935	0.003528066	0.003527711	2.91929E-05	3.03783E-05	3.2327E-05	3.94411E-05	0.1580	0.1580	0.1580	0.1580	0.0001	0.0001	0.0001	0.0001
2:00:00 AM	0.1329	0.1329	0.1329	0.1329	0.00351935	0.00351935	0.003528066	0.003527711	2.45607E-05	2.55579E-05	2.71975E-05	3.31827E-05	0.1329	0.1329	0.1329	0.1329	0.0000	0.0000	0.0000	0.0000
3:00:00 AM	0.1274	0.1274	0.1274	0.1274	0.00351935	0.00351935	0.003528066	0.003527711	2.35299E-05	2.44853E-05	2.6056E-05	3.17901E-05	0.1274	0.1274	0.1274	0.1274	0.0000	0.0000	0.0000	0.0000
4:00:00 AM	0.1772	0.1772	0.1772	0.1772	0.00351935	0.00351935	0.003528066	0.003527711	3.27347E-05	3.40638E-05	3.6249E-05	4.42262E-05	0.1772	0.1772	0.1772	0.1772	0.0001	0.0001	0.0001	0.0001
5:00:00 AM	0.3195	0.3195	0.3195	0.3195	0.00351935	0.00351935	0.003528066	0.003527711	5.90316E-05	6.14285E-05	6.53691E-05	7.97547E-05	0.3195	0.3195	0.3195	0.3195	0.0001	0.0001	0.0001	0.0001
6:00:00 AM	0.5061	0.5061	0.5061	0.5061	0.00351935	0.00351935	0.003528066	0.003527711	9.34936E-05	9.72898E-05	0.000103531	0.000126315	0.5061	0.5061	0.5061	0.5061	0.0002	0.0002	0.0002	0.0002
7:00:00 AM	0.7028	0.7028	0.7028	0.7028	0.00351935	0.00351935	0.003528066	0.003527711	0.000129843	0.000135115	0.000143783	0.000175424	0.7028	0.7028	0.7028	0.7028	0.0002	0.0003	0.0003	0.0002
8:00:00 AM	0.7643	0.7643	0.7643	0.7643	0.00351935	0.00351935	0.003528066	0.003527711	0.000141188	0.000146921	0.000156346	0.000190752	0.7643	0.7643	0.7643	0.7643	0.0003	0.0003	0.0003	0.0003
9:00:00 AM	0.7844	0.7844	0.7844	0.7844	0.00351935	0.00351935	0.003528066	0.003527711	0.000144918	0.000150802	0.000160476	0.000195791	0.7844	0.7844	0.7844	0.7844	0.0003	0.0003	0.0003	0.0003
10:00:00 AM	0.8113	0.8113	0.8113	0.8113	0.00351935	0.00351935	0.003528066	0.003527711	0.000149873	0.000155959	0.000165963	0.000202486	0.8113	0.8113	0.8113	0.8113	0.0003	0.0003	0.0003	0.0003
11:00:00 AM	0.8382	0.8382	0.8382	0.8382	0.00351935	0.00351935	0.003528066	0.003527711	0.000154844	0.000161131	0.000171468	0.000209202	0.8382	0.8382	0.8382	0.8382	0.0003	0.0003	0.0003	0.0003
12:00:00 PM	0.8668	0.8668	0.8668	0.8668	0.00351935	0.00351935	0.003528066	0.003527711	0.000160128	0.00016663	0.000177319	0.000216341	0.8668	0.8668	0.8668	0.8668	0.0003	0.0003	0.0003	0.0003
1:00:00 PM	0.8887	0.8887	0.8887	0.8887	0.00351935	0.00351935	0.003528066	0.003527711	0.000164179	0.000170846	0.000181805	0.000221815	0.8887	0.8887	0.8887	0.8887	0.0003	0.0003	0.0003	0.0003
2:00:00 PM	0.9605	0.9605	0.9605	0.9605	0.00351935	0.00351935	0.003528066	0.003527711	0.000177445	0.00018465	0.000196495	0.000239738	0.9605	0.9605	0.9605	0.9605	0.0003	0.0004	0.0004	0.0003
3:00:00 PM	0.9862	0.9862	0.9862	0.9862	0.00351935	0.00351935	0.003528066	0.003527711	0.000182183	0.00018958	0.000201741	0.000246138	0.9862	0.9862	0.9862	0.9862	0.0004	0.0004	0.0004	0.0003
4:00:00 PM	1.0000	1.0000	1.0000	1.0000	0.00351935	0.00351935	0.003528066	0.003527711	0.000184738	0.00019224	0.000204572	0.000249591	1.0000	1.0000	1.0000	1.0000	0.0004	0.0004	0.0004	0.0004
5:00:00 PM	0.9829	0.9829	0.9829	0.9829	0.00351935	0.00351935	0.003528066	0.003527711	0.00018158	0.000188953	0.000201074	0.000245323	0.9829	0.9829	0.9829	0.9829	0.0003	0.0004	0.0004	0.0003
6:00:00 PM	0.8835	0.8835	0.8835	0.8835	0.00351935	0.00351935	0.003528066	0.003527711	0.000163208	0.000169835	0.00018073	0.000220503	0.8835	0.8835	0.8835	0.8835	0.0003	0.0003	0.0003	0.0003
7:00:00 PM	0.7499	0.7499	0.7499	0.7499	0.00351935	0.00351935	0.003528066	0.003527711	0.000138532	0.000144156	0.000153404	0.000187163	0.7499	0.7499	0.7499	0.7499	0.0003	0.0003	0.0003	0.0003
8:00:00 PM	0.6368	0.6368	0.6368	0.6368	0.00351935	0.00351935	0.003528066	0.003527711	0.000117647	0.000122424	0.000130277	0.000158947	0.6368	0.6368	0.6368	0.6368	0.0002	0.0002	0.0002	0.0002
9:00:00 PM	0.5644	0.5644	0.5644	0.5644	0.00351935	0.00351935	0.003528066	0.003527711	0.000104272	0.000108506	0.000115466	0.000140876	0.5644	0.5644	0.5644	0.5644	0.0002	0.0002	0.0002	0.0002
10:00:00 PM	0.4639	0.4639	0.4639	0.4639	0.00351935	0.00351935	0.003528066	0.003527711	8.57053E-05	8.91853E-05	9.49064E-05	0.000115792	0.4639	0.4639	0.4639	0.4639	0.0002	0.0002	0.0002	0.0002
11:00:00 PM	0.3355	0.3355	0.3355	0.3355	0.00351935	0.00351935	0.003528066	0.003527711	6.19798E-05	6.44964E-05	6.86338E-05	8.37379E-05	0.3355	0.3355	0.3355	0.3355	0.0001	0.0001	0.0001	0.0001
								MAX:	**0.000184738**	**0.00019224**	**0.000204572**	**0.000249591**				MAX:	**0.000354964**	**0.000369377**	**0.00036997**	**0.000354681**

AERMOD Source Emission Rates	PM2.5
I280 North Exhaust	0.000907529
I280 North Dust	0.000311787
I280 South Exhaust	0.000962926
I280 South Dust	0.000945925
Offramp South Exhaust	0.000303619
Offramp South Dust	0.000525807

Speed	55
Fuel	Diesel

Row Labels	Sum of PM10_RUNEX
HHDT	0.022522455
LDA	0.013582212
LDT1	0.214900129
LDT2	0.004159281
LHDT1	0.011136285
LHDT2	0.012103574
MDV	0.003894094
MH	0.048606123
MHDT	0.011720714
OBUS	0.027592518
SBUS	0.006437345
UBUS	0.014116447
Grand Total	**0.390771176**

Speed	15
Fuel	Diesel

Row Labels	Sum of PM10_RUNEX
HHDT	0.027504402
LDA	0.032810386
LDT1	0.52856545
LDT2	0.009597091
LHDT1	0.034106357
LHDT2	0.036262411
MDV	0.009081441
MH	0.081089231
MHDT	0.020723469
OBUS	0.060674975
SBUS	0.007445277
UBUS	0.005570406
Grand Total	*0.853430897*

Speed	55
Fuel	Diesel

Row Labels	Sum of PM10_RUNEX
HHDT	0.022522455
LDA	0.013582212
LDT1	0.214900129
LDT2	0.004159281
LHDT1	0.011136285
LHDT2	0.012103574
MDV	0.003894094
MH	0.048606123
MHDT	0.011720714
OBUS	0.027592518
SBUS	0.006437345
UBUS	0.014116447
Grand Total	*0.390771176*

249 Pennyslvania Avenue - Freeway Health Risk Assessment

Health Risk Assessment Risk Factors

Residential Risk	Abbreviation	UOM	3rd Trimester	0<2	2<16	16<30
Daily Breathing Rate (95th %'ile)	DBR	L/kg-day	361	1090	572	261
Fraction Of Time At Home	FAH	unitless	1	1	1	0.73
Exposure Frequency	EF	days/year	0.96	0.96	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10	3	1
Inhalation Absorption Factor	A	unitless	1	1	1	1
Conversion Factor	CF_1	m^3/L	0.001	0.001	0.001	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001	0.001	0.001	0.001
Cancer Potency Factor (diesel exhaust)	CPF	$mg/kg\text{-}day^{-1}$	1.1	1.1	1.1	1.1
Averaging Time (for residential exposure)	AT	years	70.00	70.00	70.00	70.00

249 Pennyslvania Avenue - Freeway Health Risk Assessment

Health Risk Assessment Exposure Duration Assumptions for Offroad Equipment
Residential Receptors

	# of Days	*90*	*730*	*5110*	*5110*
	Phase	**3rd Tri**	**0<2**	**2<16**	**16<30**
2027	I280 Northbound	90	0	0	0
2027-2028	I280 Northbound	0	730	0	0
2029-2042	I280 Northbound	0	0	5110	0
2043-2056	I280 Northbound	0	0	0	5110
2027	I280 Southbound	90	0	0	0
2027-2028	I280 Southbound	0	730	0	0
2029-2042	I280 Southbound	0	0	5110	0
2043-2056	I280 Southbound	0	0	0	5110
2027	I280 Southbound Offramp	90	0	0	0
2027-2028	I280 Southbound Offramp	0	730	0	0
2029-2042	I280 Southbound Offramp	0	0	5110	0
2043-2056	I280 Southbound Offramp	0	0	0	5110

Intake Factor for Inhalation, IF (m^3/kg-day)

	Phase	Equation	3rd Trimester	0<2	2<16	16<30
2027	I280 Northbound		0.012193657	0	0	0
2027-2028	I280 Northbound	$\frac{DBR \cdot FAH \cdot EF \cdot ED \cdot ASF \cdot A \cdot CF_1}{AT}$	0	0.298630137	0	0
2029-2042	I280 Northbound		0	0	0.329472	0
2043-2056	I280 Northbound		0	0	0	0.03658176
2027	I280 Southbound		0.012193657	0	0	0
2027-2028	I280 Southbound		0	0.298630137	0	0
2029-2042	I280 Southbound		0	0	0.329472	0
2043-2056	I280 Southbound		0	0	0	0.03658176
2027	I280 Southbound Offramp		0.012193657	0	0	0
2027-2028	I280 Southbound Offramp		0	0.298630137	0	0
2029-2042	I280 Southbound Offramp		0	0	0.329472	0
2043-2056	I280 Southbound Offramp		0	0	0	0.03658176

Risk Calculation Part 1, R1

Equation	3rd Trimester	0<2	2<16	16<30
	1.3413E-05	0	0	0
	0	0.000328493	0	0
$IF \cdot CPF \cdot CF_2$	0	0	0.00036242	0
	0	0	0	4.024E-05
	1.3413E-05	0	0	0
	0	0.000328493	0	0
	0	0	0.00036242	0
	0	0	0	4.024E-05
	1.3413E-05	0	0	0
	0	0.000328493	0	0
	0	0	0.00036242	0
	0	0	0	4.024E-05

249 Pennsylvania Avenue - Freeway Health Risk Assessment

Offroad DPM Emissions, Ground Level Concentrations and Health Risk Calculations
Residential Receptors

	Phase	Age Bin	Emissions (g/s)
2027	I280 Northbound	3rd	0.000418527
2027-2028	I280 Northbound	0-2	0.000435521
2029-2042	I280 Northbound	2-16	0.000443713
2043-2056	I280 Northbound	16-30	0.000508644
2027	I280 Southbound	3rd	0.000457953
2027-2028	I280 Southbound	0-2	0.000476548
2029-2042	I280 Southbound	2-16	0.000485512
2043-2056	I280 Southbound	16-30	0.000556559
2027	I280 Southbound Offramp	3rd	0.000138833
2027-2028	I280 Southbound Offramp	0-2	0.00014447
2029-2042	I280 Southbound Offramp	2-16	0.000121785
2043-2056	I280 Southbound Offramp	16-30	5.69938E-05

Risk Summary	
Maximum Risk, Uncontrolled	16.8
MERV Reduction	85%
Maximum Risk, Controlled	2.5
UTM X	553447
UTM Y	4179743
Elevation	22.76
Floor	4

			AERMOD Column Identifier:	*5*	*5*	*5*	*5*	*6*	*6*	*6*	*6*	*7*	*7*	*7*	*7*													
Unique Identifier	X (UTM)	Y (UTM)	Z Flag	I280 Northbound 3rd	I280 Northbound 0-2	I280 Northbound 2-16	I280 Northbound 16-30	I280 Southbound 3rd	I280 Southbound 0-2	I280 Southbound 2-16	I280 Southbound 16-30	I280 Southbound Offramp 3rd	I280 Southbound Offramp 0-2	I280 Southbound Offramp 2-16	I280 Southbound Offramp 16-30	3rd Trimester	Risk 0<2	Risk 2<16	Risk 16<30	Total	per million				Maximum GLCs for Chronic Calcs (by age bin) 3rd	0-2	2-16	16-30
553417417972313.69	553417	4179723	13.69	0.003208004	0.003338261	0.003401055	0.00389875	0.004446889	0.00462745	0.004714494	0.005404391	0.004175711	0.004345261	0.00366296	0.001714218	1.58684E-07	4.04407E-06	4.26876E-06	4.4334E-07	8.91485E-06	8.91484972	553417	4179723	13.69	0.0118306	0.01231097	0.01177851	0.01101736
553427417972313.69	553427	4179723	13.69	0.00359173	0.003737569	0.003807873	0.0043651	0.005110426	0.00531793	0.005417961	0.006210801	0.005819303	0.00605559	0.005104729	0.002388948	1.94777E-07	4.96389E-06	5.19367E-06	5.217E-07	1.0874E-05	10.8740417	553427	4179723	13.69	0.01452146	0.01511109	0.01433056	0.01296485
553437417972313.69	553437	4179723	13.69	0.004066582	0.004231702	0.004311301	0.004942197	0.005979818	0.006222622	0.006339671	0.007267389	0.006449531	0.006711408	0.005657569	0.00264767	2.2126E-07	5.63883E-06	5.91053E-06	5.9786E-07	1.23685E-05	12.3684688	553437	4179723	13.69	0.01649593	0.01716573	0.01630854	0.01485726
553447417972313.69	553447	4179723	13.69	0.004668896	0.004858472	0.004949861	0.005674201	0.007158515	0.00744918	0.007589301	0.008699884	0.004927006	0.005127063	0.004322001	0.002022641	2.24727E-07	5.72718E-06	6.11081E-06	6.598E-07	1.27225E-05	12.7225241	553447	4179723	13.69	0.01675442	0.01743471	0.01686116	0.01639673
553417417973313.69	553417	4179733	13.69	0.003260592	0.003392985	0.003456807	0.003962661	0.004539917	0.004724256	0.00481312	0.00551745	0.0045813	0.004767319	0.004018745	0.001880721	1.66077E-07	4.23249E-06	4.45365E-06	4.5716E-07	9.30938E-06	9.3093772	553417	4179733	13.69	0.01238181	0.01288456	0.01228867	0.01136083
553427417973313.69	553427	4179733	13.69	0.003652734	0.00380105	0.003872549	0.00443924	0.005222881	0.005434951	0.005537183	0.006347469	0.005189896	0.005400627	0.004552609	0.002130563	1.88661E-07	4.80803E-06	5.06022E-06	5.1979E-07	1.05767E-05	10.5767036	553427	4179733	13.69	0.01406551	0.01463663	0.01396234	0.01291727
553437417973313.69	553437	4179733	13.69	0.004138125	0.004306149	0.004387149	0.005029144	0.006122685	0.006371291	0.006491136	0.007441019	0.00604475	0.006290191	0.005302492	0.002481498	2.18707E-07	5.57375E-06	5.86422E-06	6.0165E-07	1.22583E-05	12.2583358	553437	4179733	13.69	0.01630556	0.01696763	0.01618078	0.01495166
553447417973313.69	553447	4179733	13.69	0.004753493	0.004946504	0.005039549	0.005777014	0.007354157	0.007652766	0.007796716	0.008937652	0.004491536	0.004673911	0.003940004	0.001843871	2.22645E-07	5.67412E-06	6.08004E-06	6.6631E-07	1.26431E-05	12.6431231	553447	4179733	13.69	0.01659919	0.01727318	0.01677627	0.01655854
553417417974313.69	553417	4179743	13.69	0.003317863	0.003452581	0.003517525	0.004032264	0.004638885	0.004827243	0.004918044	0.005637728	0.004298432	0.004472966	0.003770612	0.001764598	1.64379E-07	4.1892E-06	4.42375E-06	4.6013E-07	9.23746E-06	9.23746458	553417	4179743	13.69	0.01225518	0.01275279	0.01220618	0.01143459
553427417974313.69	553427	4179743	13.69	0.003719941	0.003870986	0.0039438	0.004520918	0.005341197	0.005558072	0.00566262	0.006491262	0.005006526	0.005209811	0.004391756	0.002055285	1.8869E-07	4.80877E-06	5.07321E-06	5.2583E-07	1.05965E-05	10.5964995	553427	4179743	13.69	0.01406766	0.01463887	0.01399818	0.01306746
553437417974313.69	553437	4179743	13.69	0.004217896	0.00438916	0.004471721	0.005126092	0.00627136	0.006526002	0.006648758	0.007621706	0.005989214	0.0062324	0.005253776	0.0024587	2.21026E-07	5.63286E-06	5.93434E-06	6.1191E-07	1.24001E-05	12.4001352	553437	4179743	13.69	0.01647847	0.01714756	0.01637425	0.0152065
553447417974313.69	553447	4179743	13.69	0.00484867	0.005045546	0.005140454	0.005892684	0.007546997	0.007853435	0.00800116	0.009172013	0.005608974	0.005836721	0.004920227	0.002302603	2.41497E-07	6.15455E-06	6.54596E-06	6.9886E-07	1.36409E-05	13.6408636	553447	4179743	13.69	0.01800464	0.0187357	0.01806184	0.0173673
553417417975313.69	553417	4179753	13.69	0.003380717	0.003517988	0.003584162	0.004108652	0.004745836	0.004938536	0.005031431	0.005767707	0.004190578	0.004360733	0.003676002	0.001720322	1.6521E-07	4.21038E-06	4.45471E-06	4.6665E-07	9.29695E-06	9.29695025	553417	4179753	13.69	0.01231713	0.01281726	0.01229159	0.01159668
553427417975313.69	553427	4179753	13.69	0.003794703	0.003948783	0.004023061	0.004611777	0.005467528	0.005689532	0.005796553	0.006644794	0.004965073	0.005166675	0.004355393	0.002038268	1.90831E-07	4.86334E-06	5.13729E-06	5.3498E-07	1.07264E-05	10.726447	553427	4179753	13.69	0.0142273	0.01480499	0.01417501	0.01329484
553437417975313.69	553437	4179753	13.69	0.00430803	0.004482953	0.004567279	0.005235633	0.006428721	0.006689753	0.006815589	0.007812951	0.006071728	0.006318264	0.005326157	0.002492573	2.25453E-07	5.74566E-06	6.05567E-06	6.2538E-07	1.26522E-05	12.6521635	553437	4179753	13.69	0.01680848	0.01749097	0.01670903	0.01554116
553447417975313.69	553447	4179753	13.69	0.00495796	0.005159273	0.005256321	0.006025506	0.005974721	0.006217318	0.006334267	0.007261195	0.004351672	0.004528367	0.003817314	0.001786454	2.05009E-07	5.22467E-06	5.58412E-06	6.0654E-07	1.16203E-05	11.6203416	553447	4179753	13.69	0.01528435	0.01590496	0.0154079	0.01507316
553407417976313.69	553407	4179763	13.69	0.00309912	0.003224956	0.003285619	0.003766421	0.004286935	0.004461001	0.004544914	0.005209996	0.003532343	0.00367577	0.003098593	0.001450102	1.46449E-07	3.73225E-06	3.96092E-06	4.1956E-07	8.25919E-06	8.25918588	553407	4179763	13.69	0.0109184	0.01136173	0.01092913	0.01042652
553417417976313.69	553417	4179763	13.69	0.003449958	0.00359004	0.00365757	0.004192802	0.00486358	0.005061061	0.005156261	0.005910804	0.004170598	0.004339941	0.003658474	0.001712119	1.6745E-07	4.26747E-06	4.5202E-06	4.7546E-07	9.43058E-06	9.43058494	553417	4179763	13.69	0.01248414	0.01299104	0.0124723	0.01181572
553427417976313.69	553427	4179763	13.69	0.003878266	0.004035739	0.004111652	0.004713333	0.005604749	0.005832325	0.005942032	0.006811562	0.004998251	0.0052012	0.004384497	0.002051888	1.94238E-07	4.95015E-06	5.23267E-06	5.4633E-07	1.09234E-05	10.9233907	553427	4179763	13.69	0.01448127	0.01506926	0.01443818	0.01357678
553437417976313.69	553437	4179763	13.69	0.004410686	0.004589778	0.004676113	0.005360394	0.006594514	0.006862278	0.006991359	0.008014442	0.00622252	0.006475179	0.005458433	0.002554477	2.31076E-07	5.88897E-06	6.20676E-06	6.4099E-07	1.29678E-05	12.9678008	553437	4179763	13.69	0.01722772	0.01792723	0.0171259	0.01592931
553447417976313.69	553447	4179763	13.69	0.005085364	0.00529185	0.005391391	0.006180343	0.007970008	0.008293622	0.008449627	0.009686107	0.004137344	0.004305337	0.003629304	0.001698468	2.30606E-07	5.87701E-06	6.33158E-06	7.0681E-07	1.3146E-05	13.1460064	553447	4179763	13.69	0.01719272	0.01789081	0.01747032	0.01756492
553407417977313.69	553407	4179773	13.69	0.003162995	0.003291426	0.003353338	0.00384405	0.004402467	0.004581225	0.004667399	0.005350405	0.003544374	0.00368829	0.003109147	0.001455041	1.49016E-07	3.79769E-06	4.03368E-06	4.2854E-07	8.40892E-06	8.40892479	553407	4179773	13.69	0.01110984	0.01156094	0.01112988	0.0106495
553417417977313.69	553417	4179773	13.69	0.003526276	0.003669457	0.003738481	0.004285553	0.004996318	0.005199188	0.005296986	0.006072123	0.004203475	0.004374153	0.003687314	0.001725616	1.70695E-07	4.35017E-06	4.61098E-06	4.8623E-07	9.61807E-06	9.61807465	553417	4179773	13.69	0.01272607	0.0132428	0.01272278	0.01208329
553427417977313.69	553427	4179773	13.69	0.003971593	0.004132856	0.004210596	0.004826755	0.00575815	0.005991954	0.006104664	0.006997992	0.005080464	0.005286751	0.004456615	0.002085639	1.9865E-07	5.06259E-06	5.35361E-06	5.5975E-07	1.11746E-05	11.1746058	553427	4179773	13.69	0.01481021	0.01541156	0.01477187	0.01391039
553437417977313.69	553437	4179773	13.69	0.004527359	0.004711188	0.004799807	0.005502188	0.006777627	0.007052825	0.007185491	0.008236982	0.005228364	0.005440656	0.004586353	0.002146355	2.21762E-07	5.65162E-06	6.00588E-06	6.3923E-07	1.25185E-05	12.5184954	553437	4179773	13.69	0.01653335	0.01720467	0.01657165	0.01588553
553407417978313.69	553407	4179783	13.69	0.003232638	0.003363896	0.003427172	0.003928688	0.004534605	0.004718728	0.004807488	0.005510994	0.003589006	0.003734734	0.003148298	0.001473363	1.52322E-07	3.88192E-06	4.1254E-06	4.3914E-07	8.59879E-06	8.5987859	553407	4179783	13.69	0.01135625	0.01181736	0.01138296	0.01091305
553417417978313.69	553417	4179783	13.69	0.00361017	0.003756758	0.003827423	0.004387511	0.005149475	0.005358565	0.005459361	0.006258258	0.004272365	0.00444584	0.003747745	0.001753897	1.74799E-07	4.45475E-06	4.72396E-06	4.9896E-07	9.85247E-06	9.85247297	553417	4179783	13.69	0.01303201	0.01356116	0.01303453	0.01239967
553427417978313.69	553427	4179783	13.69	0.004075296	0.004240769	0.004320539	0.004952787	0.005935057	0.006176044	0.006292217	0.007212991	0.005199102	0.005410206	0.004560685	0.002134342	2.04005E-07	5.19907E-06	5.49915E-06	5.7544E-07	1.14777E-05	11.4776547	553427	4179783	13.69	0.01520946	0.01582702	0.01517344	0.01430012
553437417978313.69	553437	4179783	13.69	0.004658785	0.00484795	0.004939141	0.005661913	0.006983009	0.007266548	0.007403233	0.008486588	0.005149837	0.005358941	0.004517469	0.002114118	2.25227E-07	5.73991E-06	6.11033E-06	6.5441E-07	1.27299E-05	12.7298694	553437	4179783	13.69	0.01679163	0.01747344	0.01685984	0.01626262
553407417979313.69	553407	4179793	13.69	0.003308383	0.003442717	0.003507475	0.004020743	0.004687735	0.004878076	0.004969834	0.005697096	0.003658597	0.003807151	0.003209344	0.001501932	1.56325E-07	3.98395E-06	4.23547E-06	4.5148E-07	8.82722E-06	8.82722183	553407	4179793	13.69	0.01165472	0.01212794	0.01168665	0.01121977
553417417979313.69	553417	4179793	13.69	0.003701878	0.003852189	0.003924649	0.004498965	0.005329936	0.005546353	0.005650681	0.006477576	0.004369903	0.004547339	0.003833306	0.001793938	1.79758E-07	4.58113E-06	4.85955E-06	5.1388E-07	1.01343E-05	10.1343148	553417	4179793	13.69	0.01340172	0.01394588	0.01340864	0.01277048
553427417979313.69	553427	4179793	13.69	0.004189449	0.004359557	0.004441562	0.005091519	0.006146792	0.006396376	0.006516694	0.007470316	0.005350102	0.005567338	0.004693143	0.002196331	2.10401E-07	5.36208E-06	5.67237E-06	5.9387E-07	1.18387E-05	11.8387191	553427	4179793	13.69	0.01568634	0.01632327	0.0156514	0.01475817
553437417979313.69	553437	4179793	13.69	0.00480475	0.004999842	0.005093891	0.005839307	0.007227346	0.007520805	0.007662273	0.008783535	0.004151718	0.004320294	0.003641913	0.001704368	2.17074E-07	5.53213E-06	5.94298E-06	6.5701E-07	1.23492E-05	12.3491914	553437	4179793	13.69	0.01618381	0.01684094	0.01639808	0.01632721
553407417980313.69	553407	4179803	13.69	0.003390565	0.003528236	0.003594603	0.00412062	0.0048663	0.005063892	0.005159145	0.00591411	0.003749815	0.003902072	0.003289361	0.001539379	1.61046E-07	4.10426E-06	4.36465E-06	4.6574E-07	9.0957E-06	9.09569967	553407	4179803	13.69	0.01200668	0.0124942	0.01204311	0.01157411
553417417980313.69	553417	4179803	13.69	0.003801592	0.003955952	0.004030364	0.004620149	0.005545046	0.005770197	0.005878736	0.006739003	0.004494597	0.004677096	0.003942689	0.001845128	1.85653E-07	4.73137E-06	5.02015E-06	5.3134E-07	1.04685E-05	10.4685138	553417	4179803	13.69	0.01384124	0.01440325	0.01385179	0.01320428
553427417980313.69	553427	4179803	13.69	0.004313944	0.004489107	0.004573549	0.005242821	0.006407198	0.006667355	0.00679277	0.007786793	0.005538772	0.005763668	0.004858645	0.002273784	2.18095E-07	5.55815E-06	5.88024E-06	6.1581E-07	1.22723E-05	12.272288	553427	4179803	13.69	0.01625991	0.01692013	0.01622496	0.0153034
553437417980313.69	553437	4179803	13.69	0.004964623	0.005166207	0.005263385	0.006033604	0.007545568	0.007851948	0.007999645	0.009170277	0.003978239	0.004139772	0.003489736	0.001633152	2.2116E-07	5.63626E-06	6.07152E-06	6.7752E-07	1.26065E-05	12.6064664	553437	4179803	13.69	0.01648843	0.01715793	0.01675277	0.01683703
553417417972317.04	553417	4179723	17.04	0.003444739	0.003584609	0.003652037	0.004186459	0.004820867	0.005016613	0.005110977	0.005858894	0.00428975	0.004463931	0.003762995	0.001761033	1.68405E-07	4.29181E-06	4.53967E-06	4.7509E-07	9.47497E-06	9.47497289	553417	4179723	17.04	0.01255536	0.01306515	0.01252601	0.01180639
553427417972317.04	553427	4179723	17.04	0.003859189	0.004015888	0.004091428	0.004690149	0.005525638	0.005750001	0.00585816	0.006715416	0.005936163	0.006177195	0.005207239	0.002436921	2.05501E-07	5.23719E-06	5.49313E-06	5.5702E-07	1.14928E-05	11.4928406	553427	4179723	17.04	0.01532099	0.01594308	0.01515683	0.01384249
553437417972317.04	553437	4179723	17.04	0.00436392	0.004541113	0.004626532	0.005303558	0.006422539	0.00668332	0.006809035	0.007805437	0.006560375	0.006826753	0.005754802	0.002693174	2.32673E-07	5.92969E-06	6.23012E-06	6.3588E-07	1.30284E-05	13.0283622	553437	4179723	17.04	0.01734683	0.01805119	0.01719037	0.01580217
553447417972317.04	553447	4179723	17.04	0.004990451	0.005193083	0.005290766	0.006064992	0.007606174	0.007915015	0.008063898	0.009243932	0.005033587	0.005237971	0.004415494	0.002066395	2.36474E-07	6.02656E-06	6.44025E-06	6.9918E-07	1.34025E-05	13.4024603	553447	4179723	17.04	0.01763021	0.01834607	0.01777016	0.01737532
553417417973317.04	553417	4179733	17.04	0.00349998	0.003642094	0.003710602	0.004253595	0.004920398	0.005120186	0.005216498	0.005979856	0.004721666	0.004913384	0.004141874	0.001938344	1.76275E-07	4.49236E-06	4.73645E-06	4.8979E-07	9.89488E-06	9.89487618	553417	4179733	17.04	0.01314204	0.01367566	0.01306897	0.0121718
553427417973317.04	553427	4179733	17.04	0.003921684	0.00408092	0.004157683	0.004766099	0.005641912	0.005870997	0.005981431	0.006856727	0.005320037	0.005536051	0.004666769	0.002183988	1.99635E-07	5.08769E-06	5.36594E-06	5.5559E-07	1.12088E-05	11.2088478	553427	4179733	17.04	0.01488363	0.01548797	0.01480588	0.01380681
553437417973317.04	553437	4179733	17.04	0.004434831	0.004614903	0.004701711	0.005389737	0.006564917	0.006831479	0.00695998	0.007978472	0.006162798	0.006413032	0.005406045	0.00252996	2.30202E-07	5.8667E-06	6.18568E-06	6.3974E-07	1.29223E-05	12.9223132	553437	4179733	17.04	0.01716255	0.01785941	0.01706774	0.01589817
553447417973317.04	553447	4179733	17.04	0.005071176	0.005277086	0.005376349	0.0061631	0.007796513	0.008113082	0.008265691	0.009475254	0.004599648	0.004786412	0.00403484	0.001888253	2.3429E-07	5.97088E-06	6.40644E-06	7.0527E-07	1.33169E-05	13.3168826	553447	4179733	17.04	0.01746734	0.01817658	0.01767688	0.01752661
553417417974317.04	553417	4179743	17.04	0.003560077	0.00370463	0.003774315	0.004326631	0.005026217	0.005230302	0.005328685	0.00610846	0.004456095	0.00463703	0.003908914	0.001829322	1.74938E-07	4.4583E-06	4.71577E-06	4.9352E-07	9.84252E-06	9.84252145	553417	4179743	17.04	0.01304239	0.01357196	0.01301191	0.01226441
553427417974317.04	553427	4179743	17.04	0.003990511	0.004152541	0.004230652	0.004849746	0.005764021	0.005998063	0.006110888	0.007005128	0.005150829	0.005359973	0.004518339	0.002114525	1.99926E-07	5.09512E-06	5.38551E-06	5.6213E-07	1.12427E-05	11.2426775	553427	4179743	17.04	0.01490536	0.01551058	0.01485988	0.0139694
553437417974317.04	553437	4179743	17.04	0.004514021	0.004697308	0.004785665	0.005485978	0.006712735	0.006985299	0.007116694	0.008158118	0.006116805	0.006365172	0.0053657	0.002511079	2.3263E-07	5.92857E-06	6.25828E-06	6.5008E-07	1.30696E-05	13.0695607	553437	4179743	17.04	0.01734356	0.01804778	0.01726806	0.01615517
553447417974317.04	553447	4179743	17.04	0.005162473	0.005372091	0.005473141	0.006274055	0.00798365	0.008307819	0.008464091	0.009702687	0.005722263	0.00595461	0.005019605	0.002349111	2.53082E-07	6.44981E-06	6.87032E-06	7.3743E-07	1.43106E-05	14.3106399	553447	4179743	17.04	0.01886839	0.01963452	0.01895684	0.01832585
553417417975317.04	553417	4179753	17.04	0.003626011	0.003773242	0.003844218	0.004406763	0.00514066	0.005349391	0.005450015	0.006247545	0.004363531	0.004540708	0.003827717	0.001791322	1.76116E-07	4.48831E-06	4.75565E-06	5.0081E-07	9.92089E-06	9.92088719	553417	4179753	17.04	0.0131302	0.01366334	0.01312195	0.01244563
553427417975317.04	553427	4179753	17.04	0.00406708	0.00423222	0.004311829	0.004942802	0.005894391	0.006133727	0.006249104	0.007163569	0.005122397	0.005330387	0.004493399	0.002102853	2.0232E-07	5.15614E-06	5.45598E-06	5.7178E-07	1.13862E-05	11.3862153	553427	4179753	17.04	0.01508387	0.01569633	0.01505433	0.01420922
553437417975317.04	553437	4179753	17.04	0.004603661	0.004790588	0.0048807	0.005594919	0.006869121	0.007148035	0.007282491	0.008348177	0.006209007	0.006461118	0.00544658	0.00254893	2.37166E-07	6.04419E-06	6.38212E-06	6.6364E-07	1.33271E-05	13.3271121	553437	4179753	17.04	0.01768179	0.01839974	0.01760977	0.01649203
553447417975317.04	553447	4179753	17.04	0.005267879	0.005481776	0.00558489	0.006402157	0.006366898	0.006625419	0.006750045	0.007737816	0.004471436	0.004652994	0.003922372	0.00183562	2.16033E-07	5.50561E-06	5.89196E-06	6.4286E-07	1.22565E-05	12.2564575	553447	4179753	17.04	0.01610621	0.01676019	0.01625731	0.01597559
553407417976317.04	553407	4179763	17.04	0.003321077	0.003455926	0.003520933	0.00403617	0.004650664	0.004839499	0.004930532	0.005652043	0.003726016	0.003877307	0.003268484	0.001529609	1.56902E-07	3.99866E-06	4.24753E-06	4.514E-07	8.8545E-06	8.85450053	553407	4179763	17.04	0.01169776	0.01217273	0.01171995	0.01121782
553417417976317.04	553417	4179763	17.04	0.003698622	0.003848801	0.003921197	0.004495007	0.005266835	0.00548069	0.005583783	0.006400888	0.004357651	0.004534589	0.003822559	0.001788909	1.78703E-07	4.55426E-06	4.83016E-06	5.1044E-07	1.00736E-05	10.0735501	553417	4179763	17.04	0.01332311	0.01386408	0.01332754	0.0126848
553427417976317.04	553427	4179763	17.04	0.004152656	0.004321271	0.004402555	0.005046804	0.006036196	0.00628129	0.006399443	0.007335907	0.005167655	0.005377483	0.004533099	0.002121432	2.05977E-07	5.24933E-06	5.55773E-06	5.8365E-07	1.15967E-05	11.5966912	553427	4179763	17.04	0.01535651	0.01598004	0.0153351	0.01450414
553437417976317.04	553437	4179763	17.04	0.004705848	0.004896924	0.004989037	0.00571911	0.007034122	0.007319735	0.007457421	0.008548706	0.006369126	0.006627738	0.005587037	0.002614662	2.42898E-07	6.19026E-06	6.53568E-06	6.7935E-07	1.36482E-05	13.6481877	553437	4179763	17.04	0.0181091	0.0188444	0.01803349	0.01688248
553447417976317.04	553447	4179763	17.04	0.005391261	0.005610168	0.005715697	0.006552105	0.00839492	0.008735787	0.008900109	0.01020251	0.0042641	0.00443724	0.003740495	0.001750504	2.42109E-07	6.17015E-06	6.65268E-06	7.4464E-07	1.38096E-05	13.8095806	553447	4179763	17.04	0.01805028	0.01878319	0.0183563	0.01850512
553407417977317.04	553407	4179773	17.04	0.003389255	0.003526872	0.003593214	0.004119028	0.004777956	0.004971961	0.005065485	0.005806744	0.003752604	0.003904975	0.003291807	0.001540524	1.59881E-07	4.07457E-06	4.33109E-06	4.614E-07	9.02694E-06	9.02694233	553407	4179773	17.04	0.01191982	0.01240381	0.01195051	0.0114663
553417417977317.04	553417	4179773	17.04	0.00377861	0.003932037	0.004006	0.004592219	0.00540924	0.005628877	0.005734758	0.006573956	0.004404453	0.004583292	0.003863614	0.001808122	1.82314E-07	4.64627E-06	4.93049E-06	5.2208E-07	1.02812E-05	10.2811589	553417	4179773	17.04	0.0135923	0.01414421	0.01360437	0.0129743
553427417977317.04	553427	4179773	17.04	0.004248135	0.004420626	0.004503779	0.005162841	0.006194941	0.00644648	0.00656774	0.007528833	0.005261602	0.005475244	0.00461551	0.00216	2.10647E-07	5.36835E-06	5.68528E-06	5.9763E-07	1.18619E-05	11.8619084	553427	4179773	17.04	0.01570468	0.01634235	0.01568703	0.01485167
553437417977317.04	553437	4179773	17.04	0.004821964	0.005017755	0.005112141	0.005860228	0.007216817	0.007509849	0.007651111	0.008770739	0.005383294	0.005601878	0.004722259	0.002209957	2.33683E-07	5.95541E-06	6.33708E-06	6.7768E-07	1.32039E-05	13.2038561	553437	4179773	17.04	0.01742208	0.01812948	0.01748551	0.01684092
553407417978317.04	553407	4179783	17.04	0.00346359	0.003604225	0.003672022	0.004209368	0.004923636	0.005123555	0.005219931	0.005983791	0.003812598	0.003967404	0.003344434	0.001565152	1.63637E-07	4.17028E-06	4.4347E-06	4.7315E-07	9.24177E-06	9.24177297	553407	4179783	17.04	0.01219982	0.01269518	0.01223639	0.01175831
553417417978317.04	553417	4179783	17.04	0.003866451	0.004023444	0.004099126	0.004698973	0.005573458	0.005799762	0.005908857	0.006773532	0.004487666	0.004669883	0.003936608	0.001842282	1.86811E-07	4.76088E-06	5.05379E-06	5.3579E-07	1.05373E-05	10.5372654	553417	4179783	17.04	0.01392757	0.01449309	0.01394459	0.01331479
553427417978317.04	553427	4179783	17.04	0.004354051	0.004530843	0.00461607	0.005291564	0.006377985	0.006636957	0.006761799	0.00775129	0.00539202	0.005610958	0.004729914	0.002213539	2.16272E-07	5.51171E-06	5.83777E-06	6.1392E-07	1.21797E-05	12.1796652	553427	4179783	17.04	0.01612406	0.01677876	0.01610778	0.01525639
553437417978317.04	553437	4179783	17.04	0.00495262	0.005153716	0.005250659	0.006019016	0.007422076	0.007723442	0.007868722	0.009020195	0.005313416	0.005529162	0.004660961	0.00218127	2.37251E-07	6.04635E-06	6.44394E-06	6.9295E-07	1.34205E-05	13.4204898	553437	4179783	17.04	0.01768811	0.01840632	0.01778034	0.01722048
553407417979317.04	553407	4179793	17.04	0.003544411	0.003688329	0.003757707	0.004307592	0.005092222	0.005298987	0.005398662	0.006188677	0.003898567	0.004056865	0.003419847	0.001600445	1.68135E-07	4.28492E-06	4.55786E-06	4.8677E-07	9.49769E-06	9.49769203	553407	4179793	17.04	0.0125352	0.01304418	0.01257622	0.01209671
553417417979317.04	553417	4179793	17.04	0.003962331	0.004123218	0.004200776	0.004815499	0.005766297	0.006000432	0.006113301	0.007007894	0.004600091	0.004786873	0.004035229	0.001888435	1.92191E-07	4.898E-06	5.20046E-06	5.5176E-07	1.08424E-05	10.8424232	553417	4179793	17.04	0.01432872	0.01491052	0.01434931	0.01371183
553427417979317.04	553427	4179793	17.04	0.004470406	0.004651922	0.004739426	0.005432972	0.006596341	0.006864179	0.006993296	0.008016663	0.005555063	0.00578062	0.004872936	0.002280471	2.22949E-07	5.68185E-06	6.01821E-06	6.3298E-07	1.2556E-05	12.5559912	553427	4179793	17.04	0.01662181	0.01729672	0.01660566	0.01573011
553437417979317.04	553437	4179793	17.04	0.005097539	0.00530452	0.005404299	0.006195139	0.007666316	0.0079776	0.00812766	0.009317025	0.004321409	0.004496876	0.003790767	0.00177403	2.29165E-07	5.84028E-06	6.27809E-06	6.956E-07	1.30431E-05	13.0431269	553437	4179793	17.04	0.01708526	0.01777899	0.01732273	0.01728619
553407417980317.04	553407	4179803	17.04	0.003632059	0.003779535	0.003850629	0.004414113	0.005288157	0.005502878	0.005606388	0.006426801	0.004007097	0.004169801	0.00351505	0.001644999	1.73394E-07	4.41896E-06	4.70133E-06	5.0243E-07	9.79611E-06	9.79611341	553407	4179803	17.04	0.01292731	0.01345221	0.01297207	0.01248591
553417417980317.04	553417	4179803	17.04	0.00406641	0.004231523	0.004311119	0.004941988	0.005994815	0.006238229	0.006355572	0.007285617	0.004740194	0.004932665	0.004158128	0.001945951	1.98532E-07	5.05959E-06	5.3728E-06	5.7034E-07	1.12013E-05	11.2012622	553417	4179803	17.04	0.01480142	0.01540242	0.01482482	0.01417356
553427417980317.04	553427	4179803	17.04	0.004597006	0.004783663	0.004873645	0.005586832	0.00686336	0.00714204	0.007276383	0.008341176	0.005756208	0.005989933	0.005049381	0.002363046	2.30926E-07	5.88516E-06	6.2334E-06	6.5555E-07	1.3005E-05	13.0050373	553427	4179803	17.04	0.01721657	0.01791564	0.01719941	0.01629105
553437417980317.04	553437	4179803	17.04	0.005256027	0.005469443	0.005572324	0.006387752	0.007984017	0.0083082	0.008464479	0.009703132	0.004153657	0.004322312	0.003643614	0.001705165	2.33302E-07	5.94571E-06	6.40772E-06	7.1611E-07	1.33028E-05	13.3028479	553437	4179803	17.04	0.0173937	0.01809995	0.01768042	0.01779605
553417417972320.02	553417	4179723	20.02	0.003730999	0.003882492	0.003955523	0.004534356	0.005321785	0.005537871	0.005642039	0.006467669	0.004571321	0.004756935	0.004009991	0.001876624	1.8274E-07	4.65715E-06	4.93164E-06	5.1824E-07	1.02898E-05	10.2897603	553417	4179723	20.02	0.0136241	0.0141773	0.01360755	0.01287865
553427417972320.02	553427	4179723	20.02	0.004215624	0.004386795	0.004469312	0.00512333	0.006189349	0.006440662	0.006561812	0.007522038	0.006410894	0.006671202	0.005623676	0.002631808	2.25552E-07	5.74819E-06	6.03602E-06	6.1475E-07	1.26245E-05	12.6245127	553427	4179723	20.02	0.01681587	0.01749866	0.0166548	0.01527718
553437417972320.02	553437	4179723	20.02	0.00481292	0.005008344	0.005102552	0.005849236	0.007310002	0.007606817	0.007749903	0.008883988	0.006979552	0.007262949	0.006122506	0.002865254	2.56222E-07	6.52982E-06	6.87689E-06	7.0816E-07	1.43711E-05	14.3710969	553437	4179723	20.02	0.01910247	0.01987811	0.01897496	0.01759848

553447417972320.02	553447	4179723	20.02	0.005560166	0.005785931	0.005894766	0.006757379	0.008793096	0.009150131	0.009322247	0.010686422	0.005382242	0.005600783	0.004721336	0.002209525	2.64713E-07	6.74621E-06	7.22604E-06	7.9085E-07	1.50278E-05	15.0278148	553447	4179723	20.02	0.0197355	0.02053684	0.01993835	0.01965333
553417417973320.02	553417	4179733	20.02	0.003793866	0.003947912	0.004022173	0.004610759	0.005440312	0.005661211	0.0057677	0.006611718	0.005155553	0.005364889	0.004522483	0.002116464	1.9301E-07	4.91886E-06	5.18707E-06	5.3676E-07	1.08357E-05	10.8357008	553417	4179733	20.02	0.01438973	0.01497401	0.01431236	0.01333894
553427417973320.02	553427	4179733	20.02	0.004286719	0.004460777	0.004544685	0.005209733	0.00633033	0.006587367	0.006711277	0.007693374	0.005740768	0.005973866	0.005035838	0.002356708	2.19408E-07	5.59161E-06	5.90446E-06	6.1405E-07	1.23295E-05	12.3295365	553427	4179733	20.02	0.01635782	0.01702201	0.0162918	0.01525982
553437417973320.02	553437	4179733	20.02	0.004892436	0.005091088	0.005186853	0.005945873	0.007483135	0.007786981	0.007933456	0.009094401	0.006546894	0.006812724	0.005742977	0.002687639	2.53807E-07	6.46829E-06	6.83642E-06	7.1337E-07	1.42719E-05	14.271885	553437	4179733	20.02	0.01892247	0.01969079	0.01886329	0.01772791
553447417973320.02	553447	4179733	20.02	0.005646956	0.005876245	0.005986779	0.006862856	0.009019664	0.009385898	0.009562449	0.010961774	0.004908939	0.005108261	0.004306152	0.002015224	2.62567E-07	6.69154E-06	7.19597E-06	7.9835E-07	1.49484E-05	14.948431	553447	4179733	20.02	0.01957556	0.0203704	0.01985538	0.01983985
553417417974320.02	553417	4179743	20.02	0.003862299	0.004019124	0.004094725	0.004693928	0.005566382	0.0057924	0.005901356	0.006764933	0.004876636	0.005074647	0.004277816	0.002001963	1.91878E-07	4.89001E-06	5.17313E-06	5.4166E-07	1.07967E-05	10.7966796	553417	4179743	20.02	0.01430532	0.01488617	0.0142739	0.01346082
553427417974320.02	553427	4179743	20.02	0.004365029	0.004542267	0.004627708	0.005304906	0.006478222	0.006741263	0.006868068	0.00787311	0.005578016	0.005804506	0.00489307	0.002289894	2.20259E-07	5.6133E-06	5.93963E-06	6.2243E-07	1.23956E-05	12.3956219	553427	4179743	20.02	0.01642127	0.01708804	0.01638885	0.01546791
553437417974320.02	553437	4179743	20.02	0.00498126	0.005183519	0.005281022	0.006053823	0.007662067	0.007973177	0.008123155	0.00931186	0.006515796	0.006780363	0.005715697	0.002674873	2.56982E-07	6.54919E-06	6.92941E-06	7.2595E-07	1.44615E-05	14.4615293	553437	4179743	20.02	0.01915912	0.01993706	0.01911987	0.01804056
553447417974320.02	553447	4179743	20.02	0.005745343	0.005978627	0.006091087	0.006982428	0.009240283	0.009615475	0.009796345	0.011229897	0.006054572	0.006300412	0.005311108	0.002485531	2.82213E-07	7.1922E-06	7.68276E-06	8.3288E-07	1.599E-05	15.9900488	553447	4179743	20.02	0.0210402	0.02189451	0.02119854	0.02069786
553417417975320.02	553417	4179753	20.02	0.003937546	0.004097426	0.0041745	0.004785377	0.00570288	0.005934439	0.006046068	0.006930821	0.004793682	0.004988325	0.004205048	0.001967909	1.93605E-07	4.93403E-06	5.22812E-06	5.5065E-07	1.09064E-05	10.9064024	553417	4179753	20.02	0.01443411	0.01502019	0.01442562	0.01368411
553427417975320.02	553427	4179753	20.02	0.004452388	0.004633173	0.004720324	0.005411075	0.006636023	0.006905472	0.007035366	0.008064889	0.005576193	0.005802609	0.004891471	0.002289146	2.23523E-07	5.69648E-06	6.03325E-06	6.3439E-07	1.25876E-05	12.5876438	553427	4179753	20.02	0.0166646	0.01734125	0.01664716	0.01576511
553437417975320.02	553437	4179753	20.02	0.005082196	0.005288553	0.005388032	0.006176492	0.007850533	0.008169296	0.008322962	0.009540906	0.00664709	0.006916989	0.005830869	0.002728772	2.62625E-07	6.69299E-06	7.08235E-06	7.4227E-07	1.47802E-05	14.7802384	553437	4179753	20.02	0.01957982	0.02037484	0.01954186	0.01844617
553447417975320.02	553447	4179753	20.02	0.005859852	0.006097786	0.006212486	0.007121593	0.007284773	0.007580564	0.007723156	0.008853327	0.004814653	0.005010147	0.004223444	0.001976518	2.40888E-07	6.13904E-06	6.5812E-06	7.2236E-07	1.36835E-05	13.6834976	553447	4179753	20.02	0.01795928	0.0186885	0.01815909	0.01795144
553407417976320.02	553407	4179763	20.02	0.00358382	0.003729337	0.003799487	0.004355486	0.005100612	0.005307717	0.005407557	0.006198874	0.004118112	0.004285324	0.003612433	0.001690573	1.71721E-07	4.37631E-06	4.64602E-06	4.9274E-07	9.68679E-06	9.68679067	553407	4179763	20.02	0.01280254	0.01332238	0.01281948	0.01224493
553417417976320.02	553417	4179763	20.02	0.004020711	0.004183968	0.00426267	0.004886449	0.005853803	0.00609149	0.006206073	0.007114241	0.004814119	0.005009591	0.004222975	0.001976298	1.97019E-07	5.02103E-06	5.32456E-06	5.6243E-07	1.1105E-05	11.1050469	553417	4179763	20.02	0.01468863	0.01528505	0.01469172	0.01397699
553427417976320.02	553427	4179763	20.02	0.004550424	0.00473519	0.00482426	0.00553022	0.006807874	0.007084301	0.007217559	0.008273743	0.005665147	0.005895175	0.004969503	0.002325664	2.28336E-07	5.81915E-06	6.16523E-06	6.4906E-07	1.28618E-05	12.8617668	553427	4179763	20.02	0.01702345	0.01771467	0.01701132	0.01612963
553437417976320.02	553437	4179763	20.02	0.005197898	0.005408953	0.005510697	0.006317107	0.008048973	0.008375793	0.008533344	0.009782074	0.006866689	0.007145504	0.006023502	0.002818922	2.69784E-07	6.87544E-06	7.27286E-06	7.6126E-07	1.51794E-05	15.1793538	553437	4179763	20.02	0.02011356	0.02093025	0.02006754	0.0189181
553447417976320.02	553447	4179763	20.02	0.005995158	0.006238585	0.006355934	0.007286033	0.00971888	0.010113506	0.010303743	0.011811545	0.004627223	0.004815107	0.004059029	0.001899574	2.72838E-07	6.95328E-06	7.50886E-06	8.4492E-07	1.55799E-05	15.5798983	553447	4179763	20.02	0.02034126	0.0211672	0.02071871	0.02099715
553407417977320.02	553407	4179773	20.02	0.003661687	0.003810366	0.00388204	0.00445012	0.00525044	0.005463629	0.005566402	0.006380963	0.00416938	0.004338674	0.003657406	0.001711619	1.75463E-07	4.47167E-06	4.74981E-06	5.0472E-07	9.90166E-06	9.90165927	553407	4179773	20.02	0.01308151	0.01361267	0.01310585	0.0125427
553417417977320.02	553417	4179773	20.02	0.004112716	0.004279709	0.004360211	0.004998265	0.006025086	0.006269729	0.006387664	0.007322405	0.004901907	0.005100944	0.004299983	0.002012337	2.01728E-07	5.14104E-06	5.45363E-06	5.7676E-07	1.13732E-05	11.3731633	553417	4179773	20.02	0.01503971	0.01565038	0.01504786	0.01433301
553427417977320.02	553427	4179773	20.02	0.004660312	0.00484954	0.004940761	0.005663769	0.00700114	0.007285414	0.007422455	0.008508622	0.005820772	0.006057119	0.005106018	0.002389551	2.34489E-07	5.97597E-06	6.33119E-06	6.6645E-07	1.32081E-05	13.2080977	553427	4179773	20.02	0.01748222	0.01819207	0.01746923	0.01656194
553437417977320.02	553437	4179773	20.02	0.005330043	0.005546464	0.005650795	0.006477706	0.008268854	0.008604603	0.008766458	0.010049301	0.005914008	0.00615414	0.005187805	0.002427826	2.61727E-07	6.67012E-06	7.10525E-06	7.6274E-07	1.47998E-05	14.7998392	553437	4179773	20.02	0.01951291	0.02030521	0.01960506	0.01895483
553407417978320.02	553407	4179783	20.02	0.003746911	0.003899051	0.003972393	0.004553695	0.005423267	0.005643474	0.005749629	0.006591003	0.004263892	0.004437023	0.003740313	0.001750418	1.80191E-07	4.59219E-06	4.87901E-06	5.189E-07	1.01703E-05	10.1702842	553407	4179783	20.02	0.01343407	0.01397955	0.01346233	0.01289512
553417417978320.02	553417	4179783	20.02	0.004214171	0.004385284	0.004467772	0.005121565	0.006224351	0.006477084	0.00659892	0.007564575	0.005039621	0.005244249	0.004420787	0.002068871	2.07609E-07	5.29091E-06	5.61296E-06	5.9374E-07	1.17052E-05	11.7052224	553417	4179783	20.02	0.01547814	0.01610662	0.01548748	0.01475501
553427417978320.02	553427	4179783	20.02	0.004782711	0.004976908	0.005070525	0.005812522	0.007226031	0.007519437	0.00766088	0.008781937	0.006031923	0.006276843	0.00529124	0.002476233	2.4198E-07	6.16686E-06	6.53175E-06	6.8692E-07	1.36275E-05	13.6275197	553427	4179783	20.02	0.01804066	0.01877319	0.01802264	0.01707069
553437417978320.02	553437	4179783	20.02	0.005479261	0.005701741	0.005808992	0.006659053	0.008518205	0.008864079	0.009030814	0.010352342	0.005905859	0.00614566	0.005180656	0.002424481	2.66964E-07	6.80358E-06	7.2558E-06	7.821E-07	1.51084E-05	15.1084409	553437	4179783	20.02	0.01990332	0.02071148	0.02002046	0.01943588
553407417979320.02	553407	4179793	20.02	0.003839929	0.003995845	0.004071008	0.004666741	0.00562533	0.005853741	0.005963851	0.006836574	0.004393094	0.004571471	0.003853649	0.001803459	1.85882E-07	4.73722E-06	5.03346E-06	5.3546E-07	1.0492E-05	10.4920269	553407	4179793	20.02	0.01385835	0.01442106	0.01388851	0.01330677
553417417979320.02	553417	4179793	20.02	0.004325324	0.004500949	0.004585613	0.005256651	0.006461131	0.006723479	0.006849949	0.007852339	0.005219288	0.005431212	0.004578392	0.002142629	2.14685E-07	5.47126E-06	5.80376E-06	6.1372E-07	1.21034E-05	12.1034377	553417	4179793	20.02	0.01600574	0.01665564	0.01601395	0.01525162
553427417979320.02	553427	4179793	20.02	0.004917556	0.005117228	0.005213485	0.005976402	0.007497712	0.007802149	0.007948909	0.009112116	0.006295748	0.006551381	0.00552267	0.002584539	2.50971E-07	6.39601E-06	6.77183E-06	7.1116E-07	1.413E-05	14.1299706	553427	4179793	20.02	0.01871102	0.01947076	0.01868506	0.01767306
553437417979320.02	553437	4179793	20.02	0.005644985	0.005874194	0.005984689	0.00686046	0.008819039	0.009177127	0.009349752	0.010717951	0.004894693	0.005093437	0.004293655	0.002009376	2.59659E-07	6.61742E-06	7.1136E-06	7.8821E-07	1.47789E-05	14.778884	553437	4179793	20.02	0.01935872	0.02014476	0.0196281	0.01958779
553407417980320.02	553407	4179803	20.02	0.00394115	0.004101176	0.00417832	0.004789756	0.005863012	0.006101074	0.006215837	0.007125433	0.004552852	0.004737716	0.00399379	0.001869043	1.92571E-07	4.90768E-06	5.21447E-06	5.5468E-07	1.08694E-05	10.8693921	553407	4179803	20.02	0.01435701	0.01493997	0.01438795	0.01378423
553417417980320.02	553417	4179803	20.02	0.004446341	0.00462688	0.004713913	0.005403725	0.00674557	0.007019467	0.007151505	0.008198023	0.005438744	0.005659579	0.0047709	0.00223272	2.23067E-07	5.68488E-06	6.02932E-06	6.3718E-07	1.25744E-05	12.5744446	553417	4179803	20.02	0.01663065	0.01730593	0.01663632	0.01583447
553427417980320.02	553427	4179803	20.02	0.005064484	0.005270122	0.005369254	0.006154966	0.007834573	0.008152688	0.008306042	0.00952151	0.006618481	0.006887218	0.005805773	0.002717027	2.61789E-07	6.67171E-06	7.06031E-06	7.4015E-07	1.4734E-05	14.7339611	553427	4179803	20.02	0.01951754	0.02031003	0.01948107	0.0183935
553437417980320.02	553437	4179803	20.02	0.005826052	0.006062613	0.006176652	0.007080515	0.009215874	0.009590075	0.009770467	0.011200232	0.004724383	0.004916211	0.004144258	0.00193946	2.65126E-07	6.75674E-06	7.2815E-06	8.1366E-07	1.5117E-05	15.1170291	553437	4179803	20.02	0.01976631	0.0205689	0.02009138	0.02022021
553417417972322.76	553417	4179723	22.76	0.003786295	0.003940033	0.004014146	0.004601558	0.005204279	0.005415593	0.005517462	0.006324862	0.005088962	0.005295594	0.004464069	0.002089127	1.88849E-07	4.81283E-06	5.0723E-06	5.2374E-07	1.05977E-05	10.5977217	553417	4179723	22.76	0.01407954	0.01465122	0.01399568	0.01301555
553427417972322.76	553427	4179723	22.76	0.004291511	0.004465763	0.004549766	0.005215557	0.00606768	0.006314053	0.006432821	0.007374171	0.007128228	0.007417662	0.006252926	0.002926289	2.34559E-07	5.97775E-06	6.24648E-06	6.2436E-07	1.30832E-05	13.0831505	553427	4179723	22.76	0.01748742	0.01819748	0.01723551	0.01551602
553437417972322.76	553437	4179723	22.76	0.004921779	0.005121623	0.005217962	0.005981534	0.007205616	0.007498193	0.007639236	0.008757126	0.007754865	0.008069744	0.006802616	0.003183537	2.66681E-07	6.79638E-06	7.12509E-06	7.2119E-07	1.49093E-05	14.9093416	553437	4179723	22.76	0.01988226	0.02068956	0.01965981	0.0179222
553447417972322.76	553447	4179723	22.76	0.005724731	0.005957178	0.006069234	0.006957377	0.008761713	0.009117473	0.009288975	0.010648281	0.005945758	0.006187179	0.005215656	0.00244086	2.74058E-07	6.98437E-06	7.45636E-06	8.0667E-07	1.55215E-05	15.5214574	553447	4179723	22.76	0.0204322	0.02126183	0.02057386	0.02004652
553417417973322.76	553417	4179733	22.76	0.003860977	0.004017748	0.004093323	0.00469232	0.005323328	0.005539477	0.005643676	0.006469545	0.00566438	0.005894376	0.004968829	0.002325348	1.99166E-07	5.07574E-06	5.32967E-06	5.4272E-07	1.11473E-05	11.1473094	553417	4179733	22.76	0.01484868	0.0154516	0.01470583	0.01348721
553427417973322.76	553427	4179733	22.76	0.004380088	0.004557937	0.004643673	0.005323207	0.006214463	0.006466796	0.006588438	0.007552559	0.006383345	0.006642534	0.00559951	0.002620499	2.27725E-07	5.80358E-06	6.1001E-06	6.2357E-07	1.2755E-05	12.7549723	553427	4179733	22.76	0.0169779	0.01766727	0.01683162	0.01549626
553437417973322.76	553437	4179733	22.76	0.005027511	0.005231648	0.005330057	0.006110033	0.007394952	0.007695217	0.007839965	0.00898723	0.007355624	0.007654291	0.006452399	0.00301964	2.65284E-07	6.76077E-06	7.11154E-06	7.2902E-07	1.48666E-05	14.866618	553437	4179733	22.76	0.01977809	0.02058116	0.01962242	0.0181169
553447417973322.76	553447	4179733	22.76	0.00585108	0.006088657	0.006203186	0.007110932	0.009025301	0.009391765	0.009568426	0.010968625	0.005407843	0.005627423	0.004743793	0.002220035	2.72073E-07	6.93378E-06	7.43518E-06	8.1685E-07	1.54579E-05	15.4578863	553447	4179733	22.76	0.02028422	0.02110784	0.02051541	0.02029959
553417417974322.76	553417	4179743	22.76	0.003942008	0.004102069	0.00417923	0.004790799	0.005449705	0.005670985	0.005777657	0.006623133	0.00532771	0.005544036	0.0046735	0.002187138	1.97432E-07	5.03156E-06	5.30233E-06	5.4731E-07	1.10786E-05	11.0786306	553417	4179743	22.76	0.01471942	0.01531709	0.01463039	0.01360107
553427417974322.76	553427	4179743	22.76	0.004476968	0.004658751	0.004746384	0.005440947	0.006368697	0.006627292	0.006751953	0.007740003	0.006210096	0.00646225	0.005447535	0.002549376	2.28769E-07	5.83019E-06	6.14151E-06	6.3299E-07	1.28335E-05	12.8334587	553427	4179743	22.76	0.01705576	0.01774829	0.01694587	0.01573033
553437417974322.76	553437	4179743	22.76	0.00514405	0.005352919	0.005453609	0.006251665	0.007591959	0.007900223	0.008048828	0.009226656	0.007400096	0.007700569	0.00649141	0.003037897	2.70086E-07	6.88315E-06	7.24615E-06	7.4509E-07	1.51445E-05	15.1444819	553437	4179743	22.76	0.0201361	0.02095371	0.01999385	0.01851622
553447417974322.76	553447	4179743	22.76	0.005991282	0.006234552	0.006351826	0.007281322	0.009284851	0.009661853	0.009843595	0.011284061	0.006877369	0.007156618	0.006032871	0.002823306	2.97145E-07	7.57276E-06	8.05596E-06	8.6068E-07	1.67865E-05	16.7865447	553447	4179743	22.76	0.0221535	0.02305302	0.02222829	0.02138869
553417417975322.76	553417	4179753	22.76	0.004030413	0.004194064	0.004272955	0.00489824	0.00558574	0.005812543	0.005921879	0.006788459	0.005211185	0.00542278	0.004571284	0.002139302	1.98879E-07	5.06845E-06	5.35152E-06	5.5636E-07	1.11752E-05	11.1752092	553417	4179753	22.76	0.01482734	0.01542939	0.01476612	0.013826
553427417975322.76	553427	4179753	22.76	0.004583814	0.004769935	0.004859659	0.005570799	0.00653281	0.006798068	0.006925941	0.007939451	0.006208009	0.006460079	0.005445704	0.00254852	2.32376E-07	5.9221E-06	6.24496E-06	6.462E-07	1.30456E-05	13.0456366	553427	4179753	22.76	0.01732463	0.01802808	0.0172313	0.01605877
553437417975322.76	553437	4179753	22.76	0.005274061	0.005488209	0.005591444	0.00640967	0.007800176	0.008116895	0.008269575	0.009479707	0.007613268	0.007922397	0.006678406	0.003125409	2.77482E-07	7.07164E-06	7.44388E-06	7.6515E-07	1.55582E-05	15.5581545	553437	4179753	22.76	0.02068751	0.0215275	0.02053943	0.01901479
553447417975322.76	553447	4179753	22.76	0.006149335	0.006399022	0.006519389	0.007473407	0.007272477	0.007567769	0.00771012	0.008838384	0.005390317	0.005609185	0.004728419	0.00221284	2.52328E-07	6.43057E-06	6.87072E-06	7.4543E-07	1.4299E-05	14.2990488	553447	4179753	22.76	0.01881213	0.01957598	0.01895793	0.01852463
553407417976322.76	553407	4179763	22.76	0.003660473	0.003809103	0.003880753	0.004448644	0.004980779	0.005183019	0.005280513	0.006053239	0.004358898	0.004535887	0.003823653	0.00178942	1.74371E-07	4.44386E-06	4.70598E-06	4.946E-07	9.81881E-06	9.81881443	553407	4179763	22.76	0.01300015	0.01352801	0.01298492	0.0122913
553417417976322.76	553417	4179763	22.76	0.004127143	0.004294721	0.004375506	0.005015798	0.005734739	0.005967593	0.006079845	0.006969541	0.005198516	0.005409597	0.004560171	0.002134102	2.02005E-07	5.14812E-06	5.44191E-06	5.6817E-07	1.13602E-05	11.3601996	553417	4179763	22.76	0.0150604	0.01567191	0.01501552	0.01411944
553427417976322.76	553427	4179763	22.76	0.004702048	0.00489297	0.004985008	0.005714491	0.006709941	0.006982392	0.007113732	0.008154723	0.006286161	0.006541404	0.005514259	0.002580603	2.37386E-07	6.04978E-06	6.38329E-06	6.6194E-07	1.33324E-05	13.3323958	553427	4179763	22.76	0.01769815	0.01841677	0.017613	0.01644982
553437417976322.76	553437	4179763	22.76	0.005420206	0.005640289	0.005746384	0.006587283	0.008018299	0.008343874	0.008500825	0.009744796	0.007890552	0.00821094	0.006921642	0.00323924	2.86087E-07	7.29094E-06	7.672E-06	7.8755E-07	1.60366E-05	16.0365727	553437	4179763	22.76	0.02132906	0.0221951	0.02116885	0.01957132
553447417976322.76	553447	4179763	22.76	0.006330515	0.006587559	0.006711473	0.007693599	0.009855194	0.010255355	0.010448261	0.011977211	0.005114332	0.005321995	0.004486324	0.002099542	2.85698E-07	7.28102E-06	7.84495E-06	8.7604E-07	1.62877E-05	16.2877029	553447	4179763	22.76	0.02130004	0.02216491	0.02164606	0.02177035
553407417977322.76	553407	4179773	22.76	0.003747639	0.003899809	0.003973165	0.00455458	0.0051229	0.005330911	0.005431186	0.006225961	0.004370049	0.004547491	0.003833434	0.001793998	1.77596E-07	4.52605E-06	4.79763E-06	5.06E-07	1.00073E-05	10.0072704	553407	4179773	22.76	0.01324059	0.01377821	0.01323779	0.01257454
553417417977322.76	553417	4179773	22.76	0.004233051	0.00440493	0.004487788	0.00514451	0.005901668	0.006141299	0.006256819	0.007172413	0.005243734	0.005456651	0.004599836	0.002152664	2.06272E-07	5.25684E-06	5.56112E-06	5.8226E-07	1.16065E-05	11.6064838	553417	4179773	22.76	0.01537845	0.01600288	0.01534444	0.01446959
553427417977322.76	553427	4179773	22.76	0.00483285	0.005029083	0.005123682	0.005873457	0.0069066	0.007187036	0.007322225	0.008393726	0.00641068	0.006670979	0.005623488	0.00263172	2.43448E-07	6.20428E-06	6.5487E-06	6.8001E-07	1.36764E-05	13.6764371	553427	4179773	22.76	0.01815013	0.0188871	0.0180694	0.0168989
553437417977322.76	553437	4179773	22.76	0.005584135	0.005810873	0.005920177	0.006786509	0.008258344	0.008593666	0.008755315	0.010036528	0.006610784	0.006879208	0.005799021	0.002713867	2.7434E-07	6.99157E-06	7.42036E-06	7.8616E-07	1.54724E-05	15.4724259	553437	4179773	22.76	0.02045326	0.02128375	0.02047451	0.0195369
553407417978322.76	553407	4179783	22.76	0.003842222	0.003998232	0.00407344	0.004669528	0.005284723	0.005499304	0.005602747	0.006422627	0.004417651	0.004597025	0.003875191	0.00181354	1.81674E-07	4.62997E-06	4.91128E-06	5.1932E-07	1.02422E-05	10.2422443	553407	4179783	22.76	0.0135446	0.01409456	0.01355138	0.01290569
553417417978322.76	553417	4179783	22.76	0.004348698	0.004525273	0.004610394	0.005285058	0.006092932	0.006340329	0.006459593	0.00740486	0.005326495	0.005542772	0.004672435	0.00218664	2.11498E-07	5.39004E-06	5.70536E-06	5.9863E-07	1.19055E-05	11.9055245	553417	4179783	22.76	0.01576813	0.01640837	0.01574242	0.01487656
553427417978322.76	553427	4179783	22.76	0.00497697	0.005179055	0.005276474	0.006048609	0.007131409	0.007420973	0.007560563	0.008666941	0.006568704	0.006835419	0.005762108	0.002696593	2.50516E-07	6.38441E-06	6.74069E-06	7.0066E-07	1.40763E-05	14.0762781	553427	4179783	22.76	0.01867708	0.01943545	0.01859915	0.01741214
553437417978322.76	553437	4179783	22.76	0.005766872	0.00600103	0.006113911	0.007008593	0.008524704	0.008870841	0.009037703	0.010360239	0.006529165	0.006794276	0.005727425	0.002680361	2.79269E-07	7.11718E-06	7.56696E-06	8.0678E-07	1.57702E-05	15.7701928	553437	4179783	22.76	0.02082074	0.02166615	0.02087904	0.02004919
553407417979322.76	553407	4179793	22.76	0.003944602	0.004104769	0.004181981	0.004793953	0.005471613	0.005693783	0.005800884	0.006649759	0.004493041	0.004675477	0.003941324	0.001844489	1.86565E-07	4.75462E-06	5.04639E-06	5.3472E-07	1.05223E-05	10.5222941	553407	4179793	22.76	0.01390926	0.01447403	0.01392419	0.0132882
553417417979322.76	553417	4179793	22.76	0.004474386	0.004656064	0.004743646	0.005437809	0.006317082	0.00657358	0.006697231	0.007677273	0.005439977	0.005660862	0.004771982	0.002233226	2.17713E-07	5.54842E-06	5.87585E-06	6.1761E-07	1.22596E-05	12.2595948	553417	4179793	22.76	0.01623144	0.01689051	0.01621286	0.01534831
553427417979322.76	553427	4179793	22.76	0.005134457	0.005342937	0.005443439	0.006240007	0.007398762	0.007699181	0.007844005	0.00899186	0.006761007	0.007035531	0.005930797	0.002775537	2.58794E-07	6.59537E-06	6.96506E-06	7.2462E-07	1.45438E-05	14.5438403	553427	4179793	22.76	0.01929423	0.02007765	0.01921824	0.0180074
553437417979322.76	553437	4179793	22.76	0.005968142	0.006210472	0.006327293	0.0072532	0.008839606	0.009198529	0.009371556	0.010742946	0.005213521	0.005425211	0.004573333	0.002140261	2.68546E-07	6.8439E-06	7.34703E-06	8.1029E-07	1.52698E-05	15.2697576	553437	4179793	22.76	0.02002127	0.02083421	0.02027218	0.02013641
553407417980322.76	553407	4179803	22.76	0.004055211	0.004219868	0.004299245	0.004928377	0.005688729	0.005919714	0.006031065	0.006913624	0.004593559	0.004780076	0.004029499	0.001885754	1.92309E-07	4.90101E-06	5.20427E-06	5.524E-07	1.085E-05	10.8499893	553407	4179803	22.76	0.0143375	0.01491966	0.01435981	0.01372775
553417417980322.76	553417	4179803	22.76	0.00461034	0.004797539	0.004887782	0.005603037	0.006583368	0.006850679	0.006979542	0.008000896	0.005585516	0.00581231	0.004899649	0.002292973	2.2506E-07	5.73566E-06	6.07667E-06	6.3969E-07	1.26771E-05	12.6770869	553417	4179803	22.76	0.01677922	0.01746053	0.01676697	0.01589691
553427417980322.76	553427	4179803	22.76	0.005305162	0.005520573	0.005624416	0.006447467	0.007726904	0.008040647	0.008191893	0.009390657	0.00700057	0.007284821	0.006140943	0.002873883	2.68698E-07	6.84778E-06	7.23289E-06	7.5297E-07	1.51023E-05	15.1023412	553427	4179803	22.76	0.02003264	0.02084604	0.01995725	0.01871201
553437417980322.76	553437	4179803	22.76	0.006187111	0.006438332	0.006559439	0.007519317	0.009250719	0.009626336	0.009807409	0.011242581	0.00499345	0.005196204	0.004380286	0.002049918	2.74045E-07	6.98405E-06	7.51916E-06	8.3747E-07	1.56147E-05	15.614722	553437	4179803	22.76	0.02043128	0.02126087	0.02074713	0.02081182
553417417972325.5	553417	4179723	25.5	0.0035428	0.003686652	0.003755999	0.004305634	0.004735811	0.004928104	0.005020803	0.005755524	0.005107642	0.005315033	0.004480455	0.002096796	1.7955E-07	4.57584E-06	4.80468E-06	4.8924E-07	1.00493E-05	10.0493098	553417	4179723	25.5	0.01338625	0.01392979	0.01325726	0.01215795
553427417972325.5	553427	4179723	25.5	0.003995667	0.004157907	0.004236118	0.004856012	0.005492258	0.005715266	0.005822771	0.006674849	0.007154489	0.00744499	0.006275963	0.00293707	2.23225E-07	5.6889E-06	5.92006E-06	5.8219E-07	1.24144E-05	12.4143756	553427	4179723	25.5	0.01664241	0.01731816	0.01633485	0.01446793
553437417972325.5	553437	4179723	25.5	0.004556794	0.004741818	0.004831013	0.005537961	0.006490279	0.006753811	0.006880852	0.007887764	0.008021402	0.008347103	0.007036424	0.003292956	2.55766E-07	6.5182E-06	6.79474E-06	6.7276E-07	1.42415E-05	14.2414659	553437	4179723	25.5	0.01906848	0.01984273	0.01874829	0.01671868
553447417972325.5	553447	4179723	25.5	0.005269411	0.00548337	0.005586514	0.006404019	0.007872762	0.008192427	0.008346529	0.009567922	0.006067357	0.006313716	0.005322324	0.002490779	2.57658E-07	6.56642E-06	6.97851E-06	7.4294E-07	1.45455E-05	14.5455296	553447	4179723	25.5	0.01920953	0.01998951	0.01925537	0.01846272
553417417973325.5	553417	4179733	25.5	0.003609614	0.003756178	0.003826833	0.004386834	0.004839386	0.005035885	0.005130611	0.005881401	0.005515791	0.005739754	0.004838486	0.00226435	1.8731E-07	4.7736E-06	4.99991E-06	5.0431E-07	1.04651E-05	10.4651329	553417	4179733	25.5	0.01396479	0.01453182	0.01379593	0.01253258
553427417973325.5	553427	4179733	25.5	0.00407486	0.004240316	0.004320078	0.004952258	0.005620018	0.005848213	0.005958219	0.006830117	0.006321849	0.006578541	0.005545565	0.002595254	2.14833E-07	5.47502E-06	5.73487E-06	5.7855E-07	1.20033E-05	12.0032775	553427	4179733	25.5	0.01601673	0.01666707	0.01582386	0.01437763
553437417973325.5	553437	4179733	25.5	0.004651615	0.00484049	0.004931541	0.005653199	0.006656901	0.006927198	0.0070575	0.008090262	0.007486564	0.007790548	0.00656726	0.003073394	2.52099E-07	6.42475E-06	6.72516E-06	6.7671E-07	1.40787E-05	14.0787144	553437	4179733	25.5	0.01879508	0.01955824	0.0185563	0.01681686
553447417973325.5	553447	4179733	25.5	0.005383732	0.005602333	0.005707714	0.006542955	0.008111873	0.008441247	0.008600029	0.009858518	0.005522145	0.005746367	0.00484406	0.002266958	2.55086E-07	6.50086E-06	6.94098E-06	7.5122E-07	1.44481E-05	14.4481453	553447	4179733	25.5	0.01901775	0.01978995	0.0191518	0.01866843
553417417974325.5	553417	4179743	25.5	0.003682035	0.003831541	0.003903613	0.00447485	0.004947001	0.005147869	0.005244701	0.006012187	0.005119944	0.005327834	0.004491247	0.002101846	1.84415E-07	4.69983E-06	4.94324E-06	5.0658E-07	1.03341E-05	10.3340615	553417	4179743	25.5	0.01374898	0.01430724	0.01363956	0.01258888
553427417974325.5	553427	4179743	25.5	0.004161332	0.004330299	0.004411753	0.005057349	0.005751867	0.005985416	0.006098003	0.006990356	0.006046893	0.006292421	0.005304373	0.002482378	2.14073E-07	5.45566E-06	5.73134E-06	5.8469E-07	1.19858E-05	11.9857655	553427	4179743	25.5	0.01596009	0.01660814	0.01581413	0.01453008
553437417974325.5	553437	4179743	25.5	0.004755896	0.004949004	0.005042096	0.005779933	0.00682818	0.007105432	0.007239086	0.008298421	0.007383704	0.007683512	0.006477031	0.003031168	2.54415E-07	6.48378E-06	6.79834E-06	6.8849E-07	1.4225E-05	14.2250187	553437	4179743	25.5	0.01896778	0.01973795	0.01875821	0.01710952
553447417974325.5	553447	4179743	25.5	0.005510717	0.005734474	0.005842341	0.006697282	0.008345209	0.008684058	0.008847407	0.010142096	0.006976013	0.007259267	0.006119402	0.002863802	2.79419E-07	7.12101E-06	7.54164E-06	7.9285E-07	1.57349E-05	15.7349181	553447	4179743	25.5	0.02083194	0.0216778	0.02080915	0.01970318
553417417975325.5	553417	4179753	25.5	0.003760861	0.003913567	0.003987182	0.004570648	0.005060591	0.005266072	0.005365128	0.006150236	0.004941414	0.005142056	0.00433464	0.002028556	1.84602E-07	4.70458E-06	4.96041E-06	5.1304E-07	1.03626E-05	10.3626299	553417	4179753	25.5	0.01376287	0.01432169	0.01368695	0.01274944
553427417975325.5	553427	4179753	25.5	0.004256576	0.004429411	0.004512729	0.005173101	0.005890022	0.006129181	0.006244472	0.007158259	0.005946973	0.006188443	0.005216721	0.002441359	2.15863E-07	5.50129E-06	5.78926E-06	5.9445E-07	1.21009E-05	12.100859	553427	4179753	25.5	0.01609357	0.01674703	0.01597392	0.01477272
553437417975325.5	553437	4179753	25.5	0.004872024	0.005069848	0.005165213	0.005921067	0.007007798	0.007292343	0.007429514	0.008516715	0.007450691	0.007753219	0.006535792	0.003058667	2.59281E-07	6.60777E-06	6.93327E-06	7.0406E-07	1.45044E-05	14.5043784	553437	4179753	25.5	0.01933051	0.02011541	0.01913052	0.01749645
553447417975325.5	553447	4179753	25.5	0.005653384	0.005882935	0.005993594	0.006870669	0.006546315	0.006812121	0.006940259	0.007955864	0.005293371	0.005508303	0.004643378	0.002173041	2.34635E-07	5.97968E-06	6.37033E-06	6.8406E-07	1.32687E-05	13.2687014	553447	4179753	25.5	0.01749307	0.01820336	0.01757723	0.01699957
553407417976325.5	553407	4179763	25.5	0.003426542	0.003565673	0.003632744	0.004164343	0.0045229	0.004706547	0.004795079	0.005496768	0.004070364	0.004235638	0.003570549	0.001670971	1.61222E-07	4.10875E-06	4.34844E-06	4.56E-07	9.07441E-06	9.07441024	553407	4179763	25.5	0.01201981	0.01250786	0.01199837	0.01133208
553417417976325.5	553417	4179763	25.5	0.00384691	0.00400311	0.004078409	0.004675225	0.005182842	0.005393286	0.005494735	0.006298809	0.00486734	0.005064974	0.004269661	0.001998147	1.86402E-07	4.75046E-06	5.0169E-06	5.22E-07	1.04758E-05	10.4757611	553417	4179763	25.5	0.01389709	0.01446137	0.01384281	0.01297218
553427417976325.5	553427	4179763	25.5	0.004361597	0.004538696	0.00462407	0.005300735	0.006036874	0.006281995	0.006400161	0.007336731	0.005935326	0.006176324	0.005206505	0.002436578	2.19086E-07	5.5834E-06	5.88233E-06	6.0658E-07	1.22914E-05	12.2913973	553427	4179763	25.5	0.0163338	0.01699701	0.01623074	0.01507404
553437417976325.5	553437	4179763	25.5	0.005002441	0.005205561	0.005303478	0.006079565	0.007193727	0.007485821	0.007626632	0.008742678	0.007599395	0.007907961	0.006666236	0.003119713	2.65518E-07	6.76674E-06	7.10209E-06	7.2198E-07	1.48563E-05	14.8563366	553437	4179763	25.5	0.01979556	0.02059934	0.01959635	0.01794196
553447417976325.5	553447	4179763	25.5	0.005816895	0.006053084	0.006166944	0.007069386	0.008858533	0.009218225	0.009391622	0.010765949	0.00498756	0.005190075	0.004375118	0.002047499	2.6374E-07	6.72142E-06	7.22435E-06	8.0008E-07	1.50096E-05	15.0095982	553447	4179763	25.5	0.01966299	0.02046138	0.01993368	0.01988283
553407417977325.5	553407	4179773	25.5	0.003504032	0.00364631	0.003714898	0.004258518	0.004637214	0.004825503	0.004916272	0.005635697	0.004038266	0.004202236	0.003542392	0.001657794	1.63364E-07	4.16334E-06	4.41193E-06	4.6485E-07	9.20349E-06	9.20348712	553407	4179773	25.5	0.01217951	0.01267405	0.01217356	0.01155201
553417417977325.5	553417	4179773	25.5	0.003940886	0.004100902	0.004178041	0.004789436	0.005317567	0.005533482	0.005637568	0.006462543	0.004853178	0.005050236	0.004257238	0.001992333	1.8928E-07	4.8238E-06	5.10027E-06	5.3295E-07	1.06463E-05	10.6462965	553417	4179773	25.5	0.01411163	0.01468462	0.01407285	0.01324431
553427417977325.5	553427	4179773	25.5	0.004477492	0.004659296	0.004746938	0.005441583	0.006197762	0.006449416	0.006570731	0.007532262	0.005979482	0.006222273	0.005245239	0.002454704	2.2339E-07	5.69311E-06	6.00272E-06	6.2084E-07	1.25401E-05	12.5400596	553427	4179773	25.5	0.01665474	0.01733098	0.01656291	0.01542855
553437417977325.5	553437	4179773	25.5	0.005148281	0.005357322	0.005458095	0.006256807	0.007397365	0.007697728	0.007842524	0.008990163	0.006259494	0.006513654	0.005490867	0.002569655	2.52234E-07	6.42819E-06	6.8104E-06	7.1694E-07	1.42078E-05	14.2077541	553437	4179773	25.5	0.01880514	0.0195687	0.01879149	0.01781663
553407417978325.5	553407	4179783	25.5	0.003587884	0.003733566	0.003803795	0.004360425	0.00476517	0.004958655	0.005051929	0.005791205	0.004041236	0.004205326	0.003544997	0.001659013	1.66245E-07	4.23676E-06	4.49426E-06	4.7526E-07	9.37252E-06	9.37252028	553407	4179783	25.5	0.01239429	0.01289755	0.01240072	0.01181064
553417417978325.5	553417	4179783	25.5	0.00404314	0.004207308	0.004286449	0.004913708	0.005469461	0.005691543	0.005798602	0.006647143	0.004877543	0.005075591	0.004278611	0.002002335	1.93015E-07	4.919E-06	5.20567E-06	5.4578E-07	1.08635E-05	10.8634655	553417	4179783	25.5	0.01439014	0.01497444	0.01436366	0.01356319
553427417978325.5	553427	4179783	25.5	0.004604958	0.004791938	0.004882075	0.005596496	0.006378983	0.006637995	0.006762858	0.007752503	0.006062872	0.006309048	0.005318389	0.002488938	2.28649E-07	5.82713E-06	6.14783E-06	6.3732E-07	1.28409E-05	12.8409344	553427	4179783	25.5	0.01704681	0.01773898	0.01696332	0.01583794
553437417978325.5	553437	4179783	25.5	0.005310841	0.005526483	0.005630437	0.006454369	0.007620077	0.007929483	0.008078638	0.009260829	0.006104996	0.006352884	0.005355341	0.002506231	2.55329E-07	6.50707E-06	6.90931E-06	7.3323E-07	1.44049E-05	14.4049399	553437	4179783	25.5	0.01903591	0.01980885	0.01906442	0.01822143
553407417979325.5	553407	4179793	25.5	0.003678348	0.003827704	0.003899704	0.004470369	0.00491069	0.005110083	0.005206205	0.005968057	0.004069207	0.004234433	0.003569533	0.001670496	1.69785E-07	4.32698E-06	4.59382E-06	4.8726E-07	9.57786E-06	9.57785535	553407	4179793	25.5	0.01265824	0.01317222	0.01267544	0.01210892
553417417979325.5	553417	4179793	25.5	0.004154025	0.004322695	0.004404006	0.005048468	0.005644843	0.005874046	0.005984539	0.006860289	0.004930133	0.005130316	0.004324743	0.002023924	1.9756E-07	5.03483E-06	5.33238E-06	5.6065E-07	1.11254E-05	11.125422	553417	4179793	25.5	0.014729	0.01532706	0.01471329	0.01393268
553427417979325.5	553427	4179793	25.5	0.004744039	0.004936666	0.005029526	0.005765523	0.006591776	0.006859428	0.006988456	0.008011114	0.00617948	0.006430392	0.005420678	0.002536808	2.34933E-07	5.98728E-06	6.32011E-06	6.5645E-07	1.31988E-05	13.1987658	553427	4179793	25.5	0.01751529	0.01822649	0.01743866	0.01631345
553437417979325.5	553437	4179793	25.5	0.005490088	0.005713007	0.005820471	0.006672211	0.007880464	0.008200443	0.008354695	0.009577283	0.004793843	0.004988493	0.004205189	0.001967975	2.43639E-07	6.20916E-06	6.66139E-06	7.3307E-07	1.38473E-05	13.8472617	553437	4179793	25.5	0.0181644	0.01890194	0.01838036	0.01821747
553407417980325.5	553407	4179803	25.5	0.00377579	0.003929102	0.004003009	0.004588791	0.005076849	0.005282989	0.005382363	0.006169994	0.004116593	0.004283743	0.003611101	0.001689949	1.73957E-07	4.43329E-06	4.71017E-06	5.0094E-07	9.81835E-06	9.81835354	553407	4179803	25.5	0.01296923	0.01349583	0.01299647	0.01244873
553417417980325.5	553417	4179803	25.5	0.004273652	0.00444718	0.004530832	0.005193853	0.005849997	0.00608753	0.006202038	0.007109616	0.005007728	0.005211062	0.00439281	0.002055779	2.02958E-07	5.17238E-06	5.48184E-06	5.7782E-07	1.1435E-05	11.4349881	553417	4179803	25.5	0.01513138	0.01574577	0.01512568	0.01435925
553427417980325.5	553427	4179803	25.5	0.004894654	0.005093397	0.005189205	0.005948569	0.006850024	0.007128163	0.007262245	0.008324969	0.006334597	0.006591807	0.005556748	0.002600487	2.42498E-07	6.18006E-06	6.52652E-06	6.7901E-07	1.36281E-05	13.6280859	553427	4179803	25.5	0.01807928	0.01881337	0.0180082	0.01687402

553437417980325.5	553437	4179803	25.5	0.00568528	0.005916126	0.006027409	0.006909433	0.00822	0.008553765	0.008714663	0.009989927	0.004538435	0.004722714	0.003981144	0.001863124	2.47386E-07	6.30464E-06	6.78565E-06	7.55E-07	1.40927E-05	14.0926794	553437	4179803	25.5	0.01844372	0.0191926	0.01872322	0.01876248
553417417972328.25	553417	4179723	28.25	0.003065223	0.003189684	0.003249682	0.003725226	0.004011146	0.004174015	0.004252529	0.004874825	0.004462077	0.004643255	0.003914162	0.001831778	1.54765E-07	3.9442E-06	4.13751E-06	4.1978E-07	8.65626E-06	8.65625659	553417	4179723	28.25	0.01153845	0.01200695	0.01141637	0.01043183
553427417972328.25	553427	4179723	28.25	0.003432313	0.003571679	0.003638863	0.004171357	0.004590466	0.004776857	0.004866711	0.005578883	0.006059184	0.006305211	0.005315154	0.002487424	1.88882E-07	4.81366E-06	5.0089E-06	4.9244E-07	1.05039E-05	10.5038774	553427	4179723	28.25	0.01408196	0.01465375	0.01382073	0.01223766
553437417972328.25	553437	4179723	28.25	0.003879752	0.004037285	0.004113227	0.004715138	0.005338376	0.005555136	0.005659629	0.006487834	0.006965396	0.007248219	0.006110089	0.002859443	2.1707E-07	5.53204E-06	5.75628E-06	5.6587E-07	1.20713E-05	12.0712603	553437	4179723	28.25	0.01618352	0.01684064	0.01588295	0.01406242
553447417972328.25	553447	4179723	28.25	0.004436639	0.004616785	0.004703627	0.005391935	0.006349152	0.006606953	0.006731232	0.007716249	0.005268155	0.005482063	0.004621258	0.00216269	2.15332E-07	5.48774E-06	5.81905E-06	6.145E-07	1.21366E-05	12.1366171	553447	4179723	28.25	0.01605395	0.0167058	0.01605612	0.01527087
553417417973328.25	553417	4179733	28.25	0.00312293	0.003249733	0.003310861	0.003795358	0.004091929	0.004258078	0.004338173	0.004973002	0.004698761	0.004889549	0.004121782	0.001928941	1.59798E-07	4.07245E-06	4.26597E-06	4.3046E-07	8.92867E-06	8.92867451	553417	4179733	28.25	0.01191362	0.01239736	0.01177082	0.0106973
553427417973328.25	553427	4179733	28.25	0.003499951	0.003642063	0.003710571	0.004253559	0.004687946	0.004878295	0.004970057	0.005697352	0.005421508	0.005641643	0.004755781	0.002225644	1.82543E-07	4.65212E-06	4.86961E-06	4.8998E-07	1.01943E-05	10.1942603	553427	4179733	28.25	0.01360941	0.014162	0.01343641	0.01217656
553437417973328.25	553437	4179733	28.25	0.003959686	0.004120465	0.004197972	0.004812284	0.005462724	0.005684533	0.00579146	0.006638956	0.006506032	0.006770203	0.005707132	0.002670864	2.13649E-07	5.44484E-06	5.68874E-06	5.6827E-07	1.19155E-05	11.9154973	553437	4179733	28.25	0.01592844	0.0165752	0.01569656	0.0141221
553447417973328.25	553447	4179733	28.25	0.004531975	0.004715992	0.004804701	0.005507799	0.006522354	0.006787188	0.006914857	0.007926745	0.00477736	0.00497134	0.00419073	0.001961208	2.12351E-07	5.41177E-06	5.76619E-06	6.1952E-07	1.20098E-05	12.0098354	553447	4179733	28.25	0.01583169	0.01647452	0.01591029	0.01539575
553417417974328.25	553417	4179743	28.25	0.003185152	0.003314482	0.003376828	0.003870978	0.004177127	0.004346735	0.004428498	0.005076544	0.004378475	0.004556259	0.003840825	0.001797457	1.57479E-07	4.01336E-06	4.22079E-06	4.3238E-07	8.824E-06	8.82400221	553417	4179743	28.25	0.01174075	0.01221748	0.01164615	0.01074498
553427417974328.25	553427	4179743	28.25	0.003573457	0.003718554	0.003788501	0.004342892	0.004789781	0.004984265	0.00507802	0.005821115	0.005172145	0.005382155	0.004537038	0.002123276	1.8155E-07	4.62682E-06	4.85771E-06	4.9444E-07	1.01605E-05	10.1605143	553427	4179743	28.25	0.01353538	0.01408497	0.01340356	0.01228728
553437417974328.25	553437	4179743	28.25	0.004047267	0.004211602	0.004290824	0.004918723	0.005591835	0.005818886	0.005928341	0.006795867	0.00635761	0.006615754	0.005576935	0.002609934	2.14564E-07	5.46818E-06	5.72481E-06	5.7642E-07	1.1984E-05	11.9839684	553437	4179743	28.25	0.01599671	0.01664624	0.0157961	0.01432452
553447417974328.25	553447	4179743	28.25	0.004637097	0.004825382	0.004916148	0.005635555	0.006693757	0.00696555	0.007096574	0.008135054	0.005986322	0.006229391	0.005251239	0.002457513	2.32276E-07	5.91955E-06	6.25679E-06	6.5302E-07	1.30616E-05	13.0616378	553447	4179743	28.25	0.01731718	0.01802032	0.01726396	0.01622812
553417417975328.25	553417	4179753	28.25	0.003252397	0.003384457	0.00344812	0.003952701	0.004268085	0.004441387	0.00452493	0.005187088	0.004208083	0.004378948	0.003691356	0.001727507	1.57316E-07	4.00919E-06	4.2274E-06	4.373E-07	8.83121E-06	8.83120995	553417	4179753	28.25	0.01172856	0.01220479	0.01166441	0.0108673
553427417975328.25	553427	4179753	28.25	0.003653622	0.003801973	0.003873489	0.004440318	0.00489734	0.005096192	0.005192053	0.005951834	0.005035546	0.005240009	0.004417212	0.002067199	1.82236E-07	4.64429E-06	4.88641E-06	5.0136E-07	1.02143E-05	10.2143021	553427	4179753	28.25	0.01358651	0.01413817	0.01348275	0.01245935
553437417975328.25	553437	4179753	28.25	0.004143813	0.004312068	0.004393179	0.005036057	0.005727545	0.005960106	0.006072217	0.006960798	0.006293709	0.006549259	0.005520881	0.002583701	2.16822E-07	5.52573E-06	5.79373E-06	5.8672E-07	1.2123E-05	12.1230025	553437	4179753	28.25	0.01616507	0.01682143	0.01598628	0.01458056
553447417975328.25	553447	4179753	28.25	0.004754309	0.004947353	0.005040414	0.005778005	0.005370236	0.005588289	0.005693407	0.006526553	0.004479765	0.004661661	0.003929677	0.001839039	1.95888E-07	4.99221E-06	5.31433E-06	5.6914E-07	1.10716E-05	11.0715689	553447	4179753	28.25	0.01460431	0.0151973	0.0146635	0.0141436
553407417976328.25	553407	4179763	28.25	0.002980572	0.003101595	0.003159937	0.003622348	0.003856303	0.004012885	0.004088368	0.004686641	0.003475412	0.003616527	0.003048653	0.00142673	1.38319E-07	3.52506E-06	3.73182E-06	3.9176E-07	7.78696E-06	7.78696098	553407	4179763	28.25	0.01031229	0.01073101	0.01029696	0.00973572
553417417976328.25	553417	4179763	28.25	0.003325095	0.003460107	0.003525193	0.004041053	0.004366559	0.004543859	0.00462933	0.005306765	0.004111673	0.004278623	0.003606785	0.001687929	1.58318E-07	4.03475E-06	4.26252E-06	4.4408E-07	8.89967E-06	8.89966606	553417	4179763	28.25	0.01180333	0.01228259	0.01176131	0.01103575
553427417976328.25	553427	4179763	28.25	0.003741186	0.003893093	0.003966323	0.004546736	0.005012355	0.005215877	0.005313989	0.006091613	0.00496075	0.005162176	0.004351601	0.002036493	1.8395E-07	4.68797E-06	4.94047E-06	5.1003E-07	1.03224E-05	10.3224254	553427	4179763	28.25	0.01371429	0.01427115	0.01363191	0.01267484
553437417976328.25	553437	4179763	28.25	0.004250751	0.004423348	0.004506552	0.00516602	0.005868778	0.006107074	0.006221949	0.00713244	0.006287657	0.006542961	0.005515572	0.002581217	2.2007E-07	5.60849E-06	5.88716E-06	5.9876E-07	1.23145E-05	12.3144808	553437	4179763	28.25	0.01640719	0.01707338	0.01624407	0.01487968
553447417976328.25	553447	4179763	28.25	0.004886627	0.005085043	0.005180694	0.005938813	0.007066746	0.007353684	0.007492009	0.008588355	0.004249301	0.004421839	0.003727513	0.001744428	2.17327E-07	5.53858E-06	5.94375E-06	6.5477E-07	1.23544E-05	12.3544288	553447	4179763	28.25	0.01620267	0.01686057	0.01640022	0.0162716
553407417977328.25	553407	4179773	28.25	0.003046297	0.003169989	0.003229618	0.003702225	0.003951177	0.004111611	0.004188951	0.004801943	0.003426006	0.003565116	0.003005314	0.001406449	1.3981E-07	3.56307E-06	3.77782E-06	3.988E-07	7.8795E-06	7.87950039	553407	4179773	28.25	0.01042348	0.01084672	0.01042388	0.00991062
553417417977328.25	553417	4179773	28.25	0.003403627	0.003541828	0.003608451	0.004136495	0.004475428	0.004657148	0.004744751	0.005439076	0.004062586	0.004227543	0.003563726	0.001667778	1.60174E-07	4.08203E-06	4.31892E-06	4.5243E-07	9.01355E-06	9.01355481	553417	4179773	28.25	0.01194164	0.01242652	0.01191693	0.01124335
553427417977328.25	553427	4179773	28.25	0.003836652	0.003992435	0.004067534	0.004662758	0.005138544	0.00534719	0.005447772	0.006244973	0.004934206	0.005134555	0.004328316	0.002025597	1.86567E-07	4.75467E-06	5.01719E-06	5.2044E-07	1.04789E-05	10.4788667	553427	4179773	28.25	0.0139094	0.01447418	0.01384362	0.01293333
553437417977328.25	553437	4179773	28.25	0.004368955	0.004546352	0.00463187	0.005309677	0.00602281	0.00626736	0.006385251	0.007319639	0.00514871	0.005357768	0.00451648	0.002113655	2.08445E-07	5.31222E-06	5.62968E-06	5.9326E-07	1.17436E-05	11.7435971	553437	4179773	28.25	0.01554048	0.01617148	0.0155336	0.01474297
553407417978328.25	553407	4179783	28.25	0.00311671	0.003243261	0.003304268	0.003787799	0.004057454	0.004222203	0.004301624	0.004931104	0.003406131	0.003544434	0.002987879	0.001398289	1.41914E-07	3.61668E-06	3.83939E-06	4.0712E-07	8.00509E-06	8.00509129	553407	4179783	28.25	0.0105803	0.0110099	0.01059377	0.01011719
553417417978328.25	553417	4179783	28.25	0.003488232	0.003629869	0.003698147	0.004239317	0.004598274	0.004784982	0.004874989	0.005588373	0.004048142	0.004212512	0.003551055	0.001661848	1.62762E-07	4.148E-06	4.39404E-06	4.6234E-07	9.16714E-06	9.16714273	553417	4179783	28.25	0.01213465	0.01262736	0.01212419	0.01148954
553427417978328.25	553427	4179783	28.25	0.003940325	0.004100318	0.004177446	0.004788754	0.005280816	0.005495239	0.005598605	0.00641788	0.004944365	0.005145126	0.004337227	0.002029767	1.90002E-07	4.84221E-06	5.11492E-06	5.3263E-07	1.06798E-05	10.6797706	553427	4179783	28.25	0.01416551	0.01474068	0.01411328	0.0132364
553437417978328.25	553437	4179783	28.25	0.004498807	0.004681477	0.004769537	0.005467489	0.006191369	0.006442763	0.006563953	0.007524492	0.00497043	0.00517225	0.004360093	0.002040467	2.10056E-07	5.35329E-06	5.68766E-06	6.049E-07	1.18559E-05	11.8559017	553437	4179783	28.25	0.01566061	0.01629649	0.01569358	0.01503245
553407417979328.25	553407	4179793	28.25	0.003191982	0.00332159	0.00338407	0.003879279	0.004177914	0.004347554	0.004429333	0.005077501	0.003409748	0.003548197	0.002991052	0.001399774	1.44588E-07	3.68482E-06	3.91574E-06	4.1675E-07	8.1619E-06	8.16189631	553407	4179793	28.25	0.01077964	0.01121734	0.01080445	0.01035655
553417417979328.25	553417	4179793	28.25	0.003578977	0.003724298	0.003794353	0.004349601	0.004739763	0.004932217	0.005024993	0.005760327	0.004061411	0.004226321	0.003562695	0.001667296	1.66055E-07	4.23192E-06	4.48749E-06	4.7391E-07	9.35938E-06	9.35938272	553417	4179793	28.25	0.01238015	0.01288284	0.01238204	0.01177722
553427417979328.25	553427	4179793	28.25	0.004052151	0.004216685	0.004296002	0.004924659	0.005447676	0.005668874	0.005775507	0.006620668	0.004983865	0.00518623	0.004371878	0.002045983	1.9427E-07	4.95098E-06	5.23456E-06	5.4691E-07	1.09267E-05	10.9267232	553427	4179793	28.25	0.01448369	0.01507179	0.01444339	0.01359131
553437417979328.25	553437	4179793	28.25	0.004640198	0.004828609	0.004919436	0.005639324	0.006388641	0.006648046	0.006773097	0.007764241	0.003934664	0.004094427	0.003451512	0.001615263	2.00706E-07	5.11499E-06	5.48849E-06	6.0436E-07	1.14085E-05	11.4085486	553437	4179793	28.25	0.0149635	0.01557108	0.01514404	0.01501883
553407417980328.25	553407	4179803	28.25	0.003272335	0.003405205	0.003469258	0.003976933	0.004315287	0.004490505	0.004574972	0.005244452	0.003433592	0.00357301	0.003011969	0.001409563	1.47828E-07	3.7674E-06	4.00698E-06	4.2779E-07	8.34999E-06	8.34999101	553407	4179803	28.25	0.01102121	0.01146872	0.0110562	0.01063095
553417417980328.25	553417	4179803	28.25	0.003675979	0.003825239	0.003897193	0.00446749	0.004904874	0.005104031	0.005200039	0.005960989	0.004100055	0.004266534	0.003596594	0.00168316	1.70089E-07	4.33473E-06	4.60049E-06	4.8737E-07	9.59268E-06	9.59267829	553417	4179803	28.25	0.01268091	0.0131958	0.01269383	0.01211164
553427417980328.25	553427	4179803	28.25	0.004172042	0.004341444	0.004423108	0.005070365	0.005649537	0.005878931	0.005989515	0.006865993	0.005055907	0.005261197	0.004435073	0.002075557	1.99552E-07	5.08559E-06	5.38109E-06	5.6384E-07	1.12301E-05	11.2300713	553427	4179803	28.25	0.01487749	0.01548157	0.0148477	0.01401192
553437417980328.25	553437	4179803	28.25	0.004792806	0.004987413	0.005081227	0.00582479	0.006642824	0.006912549	0.007042576	0.008073154	0.003733081	0.003884659	0.003274682	0.001532509	2.03458E-07	5.18514E-06	5.58071E-06	6.2092E-07	1.15902E-05	11.590225	553437	4179803	28.25	0.01516871	0.01578462	0.01539848	0.01543045
553417417972330.99	553417	4179723	30.99	0.002731281	0.002842182	0.002895644	0.003319379	0.003514744	0.003657456	0.003726254	0.004271537	0.003626464	0.003773713	0.003181157	0.001488741	1.3242E-07	3.37473E-06	3.55282E-06	3.6536E-07	7.42533E-06	7.42532553	553417	4179723	30.99	0.00987249	0.01027335	0.00980305	0.00907966
553427417972330.99	553427	4179723	30.99	0.003036914	0.003160225	0.00321967	0.003690821	0.003985437	0.004147261	0.004225273	0.004843579	0.004836546	0.005032929	0.004242648	0.001985505	1.59064E-07	4.05374E-06	4.23581E-06	4.2332E-07	8.87193E-06	8.87193286	553427	4179723	30.99	0.0118589	0.01234042	0.01168759	0.01051991
553437417972330.99	553437	4179723	30.99	0.003404514	0.003542751	0.003609391	0.004137573	0.004584123	0.004770257	0.004859987	0.005571175	0.005511819	0.005735621	0.004835002	0.002262719	1.81082E-07	4.61488E-06	4.82176E-06	4.8173E-07	1.00995E-05	10.0994544	553437	4179723	30.99	0.01350046	0.01404863	0.01330438	0.01197147
553447417972330.99	553447	4179723	30.99	0.003855402	0.004011947	0.004087412	0.004685545	0.005375654	0.005593927	0.00569915	0.006533137	0.004233536	0.004405435	0.003713684	0.001737957	1.80601E-07	4.60262E-06	4.89275E-06	5.2137E-07	1.01973E-05	10.1973426	553447	4179723	30.99	0.01346459	0.01401131	0.01350025	0.01295664
553417417973330.99	553417	4179733	30.99	0.002779185	0.002892031	0.002946431	0.003377598	0.003579846	0.003725202	0.003795274	0.004350657	0.003831003	0.003986557	0.00336058	0.001572708	1.36679E-07	3.48327E-06	3.66126E-06	3.7427E-07	7.65548E-06	7.65548383	553417	4179733	30.99	0.01019003	0.01060379	0.01010228	0.00930096
553427417973330.99	553427	4179733	30.99	0.003092264	0.003217823	0.003278351	0.003758089	0.004062666	0.004227626	0.004307149	0.004937438	0.004373737	0.004551328	0.003836669	0.001795512	1.54634E-07	3.94086E-06	4.13961E-06	4.2216E-07	8.65727E-06	8.65726526	553427	4179733	30.99	0.01152867	0.01199678	0.01142217	0.01049104
553437417973330.99	553437	4179733	30.99	0.00346885	0.0036097	0.003677599	0.004215762	0.004680637	0.00487069	0.004962308	0.00568847	0.005156948	0.005366341	0.004523707	0.002117037	1.7848E-07	4.54856E-06	4.77075E-06	4.8374E-07	9.98152E-06	9.98151732	553437	4179733	30.99	0.01330644	0.01384673	0.01316361	0.01202127
553447417973330.99	553447	4179733	30.99	0.003930645	0.004090244	0.004167183	0.004776989	0.00550596	0.005729524	0.005837298	0.006691501	0.003894054	0.004052168	0.003415888	0.001598592	1.78804E-07	4.55684E-06	4.8638E-06	5.2582E-07	1.01253E-05	10.1252583	553447	4179733	30.99	0.01333066	0.01387194	0.01342037	0.01306708
553417417974330.99	553417	4179743	30.99	0.002830706	0.002945644	0.003001052	0.003440212	0.003648328	0.003796465	0.003867878	0.004433885	0.003605105	0.003751487	0.003162421	0.001479972	1.35259E-07	3.44707E-06	3.63555E-06	3.7641E-07	7.59429E-06	7.5942943	553417	4179743	30.99	0.01008414	0.0104936	0.01003135	0.00935407
553427417974330.99	553427	4179743	30.99	0.003152302	0.003280298	0.003342001	0.003831054	0.004143041	0.004311265	0.004392361	0.005035119	0.004201177	0.004371762	0.003685299	0.001724673	1.54203E-07	3.92987E-06	4.1387E-06	4.2617E-07	8.64895E-06	8.64895285	553427	4179743	30.99	0.01149652	0.01196332	0.01141966	0.01059085
553437417974330.99	553437	4179743	30.99	0.00353928	0.003682989	0.003752267	0.004301356	0.004780333	0.004974434	0.005068004	0.005809633	0.005050743	0.005255823	0.004430543	0.002073437	1.79337E-07	4.57041E-06	4.80235E-06	4.903E-07	1.00424E-05	10.0423929	553437	4179743	30.99	0.01337036	0.01391325	0.01325081	0.01218443
553447417974330.99	553447	4179743	30.99	0.004013655	0.004176626	0.004255189	0.004877874	0.005634361	0.005863138	0.005973425	0.006847549	0.004773171	0.004966981	0.004187056	0.001959488	1.93432E-07	4.92961E-06	5.22452E-06	5.5068E-07	1.08982E-05	10.8982401	553447	4179743	30.99	0.01442119	0.01500674	0.01441567	0.01368491
553417417975330.99	553417	4179753	30.99	0.002886236	0.003003429	0.003059924	0.003507699	0.003721299	0.003872398	0.003945239	0.004522567	0.003489427	0.003631111	0.003060947	0.001432484	1.35431E-07	3.45146E-06	3.64815E-06	3.8078E-07	7.61582E-06	7.61582007	553417	4179753	30.99	0.01009696	0.01050694	0.01006611	0.00946275
553427417975330.99	553427	4179753	30.99	0.003217626	0.003348274	0.003411256	0.003910443	0.004227671	0.004399331	0.004482084	0.005137971	0.004115828	0.004282947	0.00361043	0.001689635	1.5507E-07	3.95195E-06	4.16919E-06	4.321E-07	8.70831E-06	8.7083093	553427	4179753	30.99	0.01156112	0.01203055	0.01150377	0.01073805
553437417975330.99	553437	4179753	30.99	0.003616795	0.003763652	0.003834447	0.004395562	0.004884444	0.005082772	0.005178381	0.005936161	0.005028635	0.005232817	0.00441115	0.002064362	1.81477E-07	4.62493E-06	4.86511E-06	4.9882E-07	1.01703E-05	10.1703358	553437	4179753	30.99	0.01352987	0.01407924	0.01342398	0.01239608
553447417975330.99	553447	4179753	30.99	0.004106196	0.004272924	0.004353298	0.00499034	0.004571804	0.004757438	0.004846927	0.005556203	0.003644371	0.003792347	0.003196865	0.001496092	1.6528E-07	4.21217E-06	4.49294E-06	4.8459E-07	9.35499E-06	9.35499053	553447	4179753	30.99	0.01232237	0.01282271	0.01239709	0.01204264
553407417976330.99	553407	4179763	30.99	0.002658645	0.002766597	0.002818637	0.003231104	0.003385299	0.003522755	0.003589019	0.00411422	0.002930491	0.003049481	0.002570645	0.001203029	1.20374E-07	3.06774E-06	3.25391E-06	3.4399E-07	6.78601E-06	6.78601102	553407	4179763	30.99	0.00897443	0.00933883	0.0089783	0.00854835
553417417976330.99	553417	4179763	30.99	0.002946085	0.003065708	0.003123375	0.003580435	0.003800154	0.003954455	0.004028839	0.004618401	0.003428687	0.003567906	0.003007666	0.001407549	1.36477E-07	3.47811E-06	3.68214E-06	3.8656E-07	7.68328E-06	7.68328066	553417	4179763	30.99	0.01017493	0.01058807	0.01015988	0.00960639
553427417976330.99	553427	4179763	30.99	0.003288783	0.003422321	0.003486696	0.003996923	0.004317938	0.004493264	0.004577783	0.005247675	0.004075585	0.00424107	0.003575128	0.001673114	1.56695E-07	3.99338E-06	4.21842E-06	4.3933E-07	8.80782E-06	8.80781805	553427	4179763	30.99	0.01168231	0.01215665	0.01163961	0.01091771
553437417976330.99	553437	4179763	30.99	0.003702476	0.003852812	0.003925284	0.004499692	0.004992306	0.005195014	0.005292733	0.006067247	0.005042303	0.005247041	0.00442314	0.002069973	1.84256E-07	4.69577E-06	4.94382E-06	5.0851E-07	1.03323E-05	10.332347	553437	4179763	30.99	0.01373709	0.01429487	0.01364116	0.01263691
553447417976330.99	553447	4179763	30.99	0.004210555	0.004381521	0.004463938	0.00511717	0.005908794	0.006148714	0.006264373	0.007181073	0.003437581	0.003577161	0.003015467	0.0014112	1.81839E-07	4.63418E-06	4.98101E-06	5.5167E-07	1.03487E-05	10.3486986	553447	4179763	30.99	0.01355693	0.0141074	0.01374378	0.01370944
553407417977330.99	553407	4179773	30.99	0.002713225	0.002823393	0.002876502	0.003297436	0.003462409	0.003602996	0.00367077	0.004207933	0.002900546	0.00301832	0.002544377	0.001190736	1.21739E-07	3.10252E-06	3.29499E-06	3.4993E-07	6.86918E-06	6.86918025	553407	4179773	30.99	0.00907618	0.00944471	0.00909165	0.00869611
553417417977330.99	553417	4179773	30.99	0.003010526	0.003132765	0.003191693	0.003658751	0.003887242	0.00404508	0.004121169	0.004724242	0.003400914	0.003539005	0.002983303	0.001396147	1.38136E-07	3.52041E-06	3.73153E-06	3.9351E-07	7.78359E-06	7.78358828	553417	4179773	30.99	0.01029868	0.01071685	0.01029617	0.00977914
553427417977330.99	553427	4179773	30.99	0.003366106	0.003502784	0.003568672	0.004090895	0.004416819	0.00459616	0.004682615	0.005367847	0.004064091	0.004229109	0.003565046	0.001668396	1.58904E-07	4.04968E-06	4.28247E-06	4.4776E-07	8.93881E-06	8.9388062	553427	4179773	30.99	0.01184702	0.01232805	0.01181633	0.01112714
553437417977330.99	553437	4179773	30.99	0.003796888	0.003951056	0.004025377	0.004614432	0.005109354	0.005316814	0.005416825	0.006209498	0.004185918	0.004355883	0.003671913	0.001718408	1.75605E-07	4.47531E-06	4.75281E-06	5.047E-07	9.90843E-06	9.90842522	553437	4179773	30.99	0.01309216	0.01362375	0.01311412	0.01254234
553407417978330.99	553407	4179783	30.99	0.002771497	0.002884031	0.00293828	0.003368255	0.003548632	0.003692721	0.003762182	0.004312722	0.002891419	0.003008823	0.002536371	0.001186989	1.23555E-07	3.1488E-06	3.34761E-06	3.5685E-07	6.9768E-06	6.97680215	553407	4179783	30.99	0.00921155	0.00958557	0.00923683	0.00886797
553417417978330.99	553417	4179783	30.99	0.003079679	0.003204726	0.003265008	0.003742794	0.003985428	0.004147252	0.004225263	0.004843568	0.003395749	0.00353363	0.002978772	0.001394027	1.40312E-07	3.57585E-06	3.79418E-06	4.0161E-07	7.91195E-06	7.91195213	553417	4179783	30.99	0.01046086	0.01088561	0.01046904	0.00998039
553427417978330.99	553427	4179783	30.99	0.003449728	0.003589801	0.003657326	0.004192522	0.004528285	0.004712152	0.004800788	0.005503314	0.004073442	0.004238841	0.003573249	0.001672235	1.61646E-07	4.11956E-06	4.3604E-06	4.5745E-07	9.09906E-06	9.09905848	553427	4179783	30.99	0.01205146	0.01254079	0.01203136	0.01136807
553437417978330.99	553437	4179783	30.99	0.003900151	0.004058512	0.004134854	0.004739929	0.005237054	0.0054497	0.00555221	0.006364695	0.004049001	0.004213407	0.003551809	0.001662201	1.76867E-07	4.50746E-06	4.79802E-06	5.1374E-07	9.99608E-06	9.99608261	553437	4179783	30.99	0.01318621	0.01372162	0.01323887	0.01276683
553407417979330.99	553407	4179793	30.99	0.002833548	0.002948601	0.003004065	0.003443666	0.00364619	0.00379424	0.00386561	0.004431286	0.002898461	0.00301615	0.002542548	0.00118988	1.2579E-07	3.20576E-06	3.41117E-06	3.6477E-07	7.10749E-06	7.10749037	553407	4179793	30.99	0.0093782	0.00975899	0.00941222	0.00906483
553417417979330.99	553417	4179793	30.99	0.003153549	0.003281596	0.003343323	0.00383257	0.004098418	0.004264831	0.004345053	0.004980888	0.003408836	0.003547248	0.002990252	0.0013994	1.42994E-07	3.6442E-06	3.87014E-06	4.1096E-07	8.06829E-06	8.06829435	553417	4179793	30.99	0.0106608	0.01109367	0.01067863	0.01021286
553427417979330.99	553427	4179793	30.99	0.003539535	0.003683255	0.003752538	0.004301667	0.004658985	0.004848158	0.004939353	0.005662156	0.004101669	0.004268213	0.003598009	0.001683822	1.64983E-07	4.20459E-06	4.4541E-06	4.687E-07	9.29237E-06	9.29236844	553427	4179793	30.99	0.01230019	0.01279963	0.0122899	0.01164764
553437417979330.99	553437	4179793	30.99	0.004012077	0.004174984	0.004253516	0.004875956	0.005386539	0.005605255	0.005710691	0.006546367	0.003259192	0.003391528	0.002858983	0.001337968	1.69779E-07	4.32684E-06	4.64737E-06	5.1347E-07	9.65746E-06	9.65745812	553437	4179793	30.99	0.01265781	0.01317177	0.01282319	0.01276029
553407417980330.99	553407	4179803	30.99	0.002899537	0.00301727	0.003074025	0.003523864	0.003757202	0.00390976	0.003983303	0.004566201	0.002919584	0.003038131	0.002561078	0.001198552	1.28447E-07	3.27349E-06	3.4859E-06	3.7377E-07	7.2616E-06	7.26160279	553407	4179803	30.99	0.00957632	0.00996516	0.00961841	0.00928862
553417417980330.99	553417	4179803	30.99	0.003232169	0.003363408	0.003426675	0.003928119	0.004230062	0.004401819	0.004484618	0.005140877	0.003439512	0.00357917	0.003017161	0.001411993	1.46225E-07	3.72656E-06	3.96068E-06	4.2175E-07	8.25522E-06	8.2552183	553417	4179803	30.99	0.01090174	0.0113444	0.01092845	0.01048099
553427417980330.99	553427	4179803	30.99	0.00363537	0.00378298	0.003854139	0.004418136	0.004816704	0.005012281	0.005106564	0.005853835	0.00415291	0.004321535	0.003642959	0.001704858	1.69071E-07	4.30878E-06	4.56781E-06	4.8195E-07	9.5276E-06	9.52760462	553427	4179803	30.99	0.01260498	0.0131168	0.01260366	0.01197683
553437417980330.99	553437	4179803	30.99	0.004132274	0.004300061	0.004380946	0.005022034	0.005577758	0.005804237	0.005913416	0.006778758	0.003093784	0.003219404	0.002713886	0.001270064	1.71738E-07	4.37674E-06	4.71444E-06	5.2597E-07	9.78889E-06	9.78889194	553437	4179803	30.99	0.01280382	0.0133237	0.01300825	0.01307086
553417417972333.73	553417	4179723	33.73	0.002436864	0.00253581	0.002583509	0.002961568	0.003111314	0.003237646	0.003298547	0.003781241	0.00302058	0.003143227	0.002649671	0.001240012	1.14933E-07	2.92907E-06	3.09206E-06	3.2123E-07	6.45729E-06	6.45729284	553417	4179723	33.73	0.00856876	0.00891668	0.00853173	0.00798282
553427417972333.73	553427	4179723	33.73	0.002696133	0.002805607	0.002858381	0.003276663	0.00351102	0.003653582	0.003722307	0.004267012	0.004007798	0.004170531	0.003515665	0.001645286	1.37013E-07	3.49179E-06	3.65911E-06	3.6976E-07	7.65768E-06	7.65767867	553427	4179723	33.73	0.01021495	0.01062972	0.01009635	0.00918896
553437417972333.73	553437	4179723	33.73	0.003006018	0.003128075	0.003186915	0.003653273	0.00402047	0.004183717	0.004262414	0.004886156	0.004492269	0.004674673	0.003940647	0.001844172	1.54501E-07	3.93747E-06	4.12795E-06	4.1784E-07	8.63775E-06	8.63775444	553437	4179723	33.73	0.01151876	0.01198647	0.01138998	0.0103836
553447417972333.73	553447	4179723	33.73	0.003384245	0.003521659	0.003587902	0.00411294	0.00469907	0.004889871	0.00498185	0.005710871	0.003461471	0.003602021	0.003036424	0.001421008	1.5485E-07	3.94637E-06	4.2063E-06	4.5249E-07	8.76001E-06	8.76001172	553447	4179723	33.73	0.01154479	0.01201355	0.01160618	0.01124482
553417417973333.73	553417	4179733	33.73	0.002476971	0.002577546	0.00262603	0.003010312	0.003165962	0.003294513	0.003356483	0.003847656	0.003222216	0.003353051	0.002826548	0.001322788	1.18908E-07	3.03039E-06	3.19257E-06	3.2919E-07	6.67106E-06	6.67106033	553417	4179733	33.73	0.00886515	0.00922511	0.00880906	0.00818076
553427417973333.73	553427	4179733	33.73	0.002741924	0.002853257	0.002906927	0.003332314	0.003575537	0.003720718	0.003790706	0.00434542	0.003637228	0.003784914	0.003190599	0.00149316	1.33522E-07	3.40282E-06	3.58369E-06	3.6904E-07	7.48907E-06	7.4890679	553427	4179733	33.73	0.00995469	0.01035889	0.00988823	0.00917089
553437417973333.73	553437	4179733	33.73	0.003058518	0.003182707	0.003242574	0.003717077	0.004101079	0.004267599	0.004347874	0.004984122	0.004217204	0.004388439	0.003699358	0.001731252	1.52597E-07	3.88895E-06	4.09164E-06	4.198E-07	8.55299E-06	8.55298738	553437	4179733	33.73	0.0113768	0.01183875	0.01128981	0.01043245
553447417973333.73	553447	4179733	33.73	0.00344463	0.003584496	0.003651921	0.004186327	0.004808914	0.005004175	0.005098305	0.005844368	0.003187275	0.003316691	0.002795898	0.001308444	1.53456E-07	3.91083E-06	4.18454E-06	4.5629E-07	8.70511E-06	8.70510924	553447	4179733	33.73	0.01144082	0.01190536	0.01154612	0.01133914
553417417974333.73	553417	4179743	33.73	0.00252	0.002622322	0.002671649	0.003062605	0.003223357	0.003354238	0.003417332	0.003917409	0.003043818	0.003167409	0.002670056	0.001249552	1.17863E-07	3.00373E-06	3.17444E-06	3.3116E-07	6.62719E-06	6.62719422	553417	4179743	33.73	0.00878717	0.00914397	0.00875904	0.00822957
553427417974333.73	553427	4179743	33.73	0.002791498	0.002904844	0.002959485	0.003392563	0.003642558	0.003790461	0.00386176	0.004426872	0.003508304	0.003650755	0.003077506	0.001440233	1.33357E-07	3.39861E-06	3.5875E-06	3.7261E-07	7.49207E-06	7.49207295	553427	4179743	33.73	0.00994236	0.01034606	0.00989875	0.00925967
553437417974333.73	553437	4179743	33.73	0.00311594	0.00324246	0.003303451	0.003786863	0.004184179	0.004354074	0.004435975	0.005085115	0.004144294	0.004312569	0.003635401	0.001701321	1.53504E-07	3.91206E-06	4.12246E-06	4.2547E-07	8.61349E-06	8.61348759	553437	4179743	33.73	0.01144441	0.0119091	0.01137483	0.0105733
553447417974333.73	553447	4179743	33.73	0.003511272	0.003653844	0.003722574	0.004267318	0.00491635	0.005115973	0.005212206	0.005974936	0.003876658	0.004034066	0.003400629	0.001591451	1.65038E-07	4.20599E-06	4.47059E-06	4.7619E-07	9.3178E-06	9.31780192	553447	4179743	33.73	0.01230428	0.01280388	0.01233541	0.0118337
553417417975333.73	553417	4179753	33.73	0.002566281	0.002670482	0.002720714	0.003118851	0.003284517	0.003417881	0.003482173	0.003991738	0.002957225	0.0030773	0.002594096	0.001214004	1.18142E-07	3.01086E-06	3.1882E-06	3.3498E-07	6.65218E-06	6.65217641	553417	4179753	33.73	0.00880802	0.00916566	0.00879698	0.00832459
553427417975333.73	553427	4179753	33.73	0.002845367	0.0029609	0.003016595	0.00345803	0.003713106	0.003863873	0.003936553	0.00451261	0.003449705	0.003589777	0.003026103	0.001416177	1.3424E-07	3.42111E-06	3.61667E-06	3.7772E-07	7.54975E-06	7.54974565	553427	4179753	33.73	0.01000818	0.01041455	0.00997925	0.00938682
553437417975333.73	553437	4179753	33.73	0.003179134	0.003308219	0.003370448	0.003863663	0.00427092	0.004444337	0.004527936	0.005190533	0.004140685	0.004308813	0.003632234	0.001699839	1.55467E-07	3.96208E-06	4.17892E-06	4.3274E-07	8.7292E-06	8.72920288	553437	4179753	33.73	0.01159074	0.01206137	0.01153062	0.01075404
553447417975333.73	553447	4179753	33.73	0.003585695	0.003731288	0.003801475	0.004357765	0.003996455	0.004158727	0.004236954	0.00485697	0.003020055	0.003142681	0.002649211	0.001239797	1.42208E-07	3.62417E-06	3.87341E-06	4.2069E-07	8.06047E-06	8.06046852	553447	4179753	33.73	0.0106022	0.0110327	0.01068764	0.01045453
553407417976333.73	553407	4179763	33.73	0.002372766	0.00246911	0.002515555	0.00288367	0.002999826	0.003121631	0.003180349	0.003645747	0.002512302	0.002614311	0.002203807	0.001031353	1.0576E-07	2.6953E-06	2.86301E-06	3.0424E-07	5.96832E-06	5.9683154	553407	4179763	33.73	0.00788489	0.00820505	0.00789971	0.00756077
553417417976333.73	553417	4179763	33.73	0.00261609	0.002722313	0.002773521	0.003179385	0.003350659	0.003486709	0.003552295	0.004072121	0.002915722	0.003034112	0.00255769	0.001196966	1.19141E-07	3.03631E-06	3.21955E-06	3.3997E-07	6.71497E-06	6.71496601	553417	4179763	33.73	0.00888247	0.00924313	0.00888351	0.00844847
553427417976333.73	553427	4179763	33.73	0.002904007	0.003021921	0.003078764	0.003529296	0.003788393	0.003942217	0.004016371	0.004604109	0.003428232	0.003567432	0.003007266	0.001407362	1.35748E-07	3.45955E-06	3.6613E-06	3.8392E-07	7.64052E-06	7.64052121	553427	4179763	33.73	0.01012063	0.01053157	0.0101024	0.00954077
553437417976333.73	553437	4179763	33.73	0.003249036	0.00338096	0.003444557	0.003948617	0.004360706	0.004537769	0.004623125	0.005299652	0.004170342	0.004339675	0.00365825	0.001712014	1.58007E-07	4.0268E-06	4.2497E-06	4.4104E-07	8.87555E-06	8.87555196	553437	4179763	33.73	0.01178008	0.0122584	0.01172593	0.01096028
553447417976333.73	553447	4179763	33.73	0.003669869	0.00381888	0.003890714	0.004460064	0.005146654	0.005355629	0.00545637	0.00625483	0.002857434	0.002973458	0.002506559	0.001173038	1.56583E-07	3.99052E-06	4.29599E-06	4.7837E-07	8.92146E-06	8.92146475	553447	4179763	33.73	0.01167396	0.01214797	0.01185364	0.01188793
553407417977333.73	553407	4179773	33.73	0.002418537	0.002516739	0.002564079	0.002939295	0.003065061	0.003189515	0.00324951	0.003725029	0.002493785	0.002595043	0.002187564	0.001023752	1.07001E-07	2.72692E-06	2.89977E-06	3.0937E-07	6.04306E-06	6.04305943	553407	4179773	33.73	0.00797738	0.0083013	0.00800115	0.00768808
553417417977333.73	553417	4179773	33.73	0.002669632	0.002778029	0.002830285	0.003244456	0.003423895	0.003562919	0.003629938	0.004161126	0.002901483	0.003019295	0.002545199	0.001191121	1.2065E-07	3.07478E-06	3.26374E-06	3.4593E-07	6.80509E-06	6.80509478	553417	4179773	33.73	0.00899501	0.00936024	0.00900542	0.0085967
553427417977333.73	553427	4179773	33.73	0.002967673	0.003088172	0.003146262	0.003606671	0.003871127	0.00402831	0.004104084	0.004704657	0.00343176	0.003571103	0.003010361	0.00140881	1.37759E-07	3.5108E-06	3.71868E-06	3.9114E-07	7.75837E-06	7.75837276	553427	4179773	33.73	0.01027056	0.01068759	0.01026071	0.00972014
553437417977333.73	553437	4179773	33.73	0.003326091	0.003461144	0.003526249	0.004042263	0.004458443	0.004639473	0.004726743	0.005418433	0.003512816	0.00365545	0.003081464	0.001442086	1.51532E-07	3.86179E-06	4.10782E-06	4.3873E-07	8.55987E-06	8.5598707	553437	4179773	33.73	0.01129735	0.01175607	0.01133446	0.01090278
553407417978333.73	553407	4179783	33.73	0.002467303	0.002567486	0.002615781	0.002998562	0.003138173	0.003265596	0.003327022	0.003813884	0.002492478	0.002593682	0.002186417	0.001023215	1.08618E-07	2.76813E-06	2.94619E-06	3.1531E-07	6.13824E-06	6.13824408	553407	4179783	33.73	0.00809795	0.00842676	0.00812922	0.00783566
553417417978333.73	553417	4179783	33.73	0.002726991	0.002837718	0.002891096	0.003314165	0.003506793	0.003649183	0.003717825	0.004261875	0.002906402	0.003024414	0.002549514	0.00119314	1.22598E-07	3.1244E-06	3.31919E-06	3.5287E-07	6.91906E-06	6.91906327	553417	4179783	33.73	0.00914019	0.00951131	0.00915844	0.00876918
553427417978333.73	553427	4179783	33.73	0.003036445	0.003159737	0.003219173	0.003690251	0.003964879	0.004125869	0.004203478	0.004818595	0.003454913	0.003595196	0.003030671	0.001418315	1.4025E-07	3.57427E-06	3.78848E-06	3.9947E-07	7.90247E-06	7.90247167	553427	4179783	33.73	0.01045624	0.0108808	0.01045332	0.00992716
553437417978333.73	553437	4179783	33.73	0.00341053	0.003548827	0.003615581	0.004144669	0.004565595	0.004750976	0.004840343	0.005548656	0.003413881	0.003552498	0.002994678	0.001401471	1.52772E-07	3.8934E-06	4.14992E-06	4.4645E-07	8.64254E-06	8.64254353	553437	4179783	33.73	0.01138983	0.0118523	0.0114506	0.0110948
553407417979333.73	553407	4179793	33.73	0.002519129	0.002621416	0.002670726	0.003061547	0.00322115	0.003351941	0.003414992	0.003914727	0.002504739	0.002606442	0.002197173	0.001028249	1.10591E-07	2.81841E-06	3.00188E-06	3.221E-07	6.25298E-06	6.25297615	553407	4179793	33.73	0.00824502	0.0085798	0.00828289	0.00800452
553417417979333.73	553417	4179793	33.73	0.002788158	0.002901369	0.002955944	0.003388504	0.003602689	0.003748972	0.003819492	0.004378418	0.002927283	0.003046142	0.002567831	0.001201712	1.24984E-07	3.18523E-06	3.38618E-06	3.609E-07	7.05729E-06	7.05728909	553417	4179793	33.73	0.00931813	0.00969648	0.00934327	0.00896863
553427417979333.73	553427	4179793	33.73	0.003110223	0.003236511	0.00329739	0.003779915	0.004075672	0.00424116	0.004320938	0.004953244	0.003496892	0.00363888	0.003067495	0.001435548	1.43288E-07	3.65171E-06	3.87275E-06	4.0919E-07	8.07693E-06	8.0769349	553427	4179793	33.73	0.01068279	0.01111655	0.01068582	0.01016871

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553437417979333.73	553437	4179793	33.73	0.003501642	0.003643823	0.003712364	0.004255614	0.0046922	0.004882722	0.004974568	0.005702523	0.002781214	0.002894142	0.002439698	0.001141747	1.47209E-07	3.75162E-06	4.0325E-06	4.4666E-07	8.37799E-06	8.37798911	553437	4179793	33.73	0.01097506	0.01142069	0.01112663	0.01109988
553407417980333.73	553407	4179803	33.73	0.002574141	0.002678661	0.002729047	0.003128404	0.003315937	0.003450577	0.003515484	0.004029923	0.002529059	0.002631749	0.002218506	0.001038232	1.12926E-07	2.87792E-06	3.06717E-06	3.2983E-07	6.38785E-06	6.38784632	553407	4179803	33.73	0.00841914	0.00876099	0.00846304	0.00819656
553417417980333.73	553417	4179803	33.73	0.002853143	0.002968992	0.00302484	0.003467481	0.00371513	0.003865979	0.003938699	0.00451507	0.002963932	0.003084279	0.002599979	0.001216757	1.27856E-07	3.25841E-06	3.466E-06	3.7018E-07	7.22244E-06	7.22244381	553417	4179803	33.73	0.0095322	0.00991925	0.00956352	0.00919931
553427417980333.73	553427	4179803	33.73	0.003188831	0.00331831	0.003380728	0.003875449	0.004210713	0.004381685	0.004464105	0.005117362	0.003561881	0.003706507	0.003124504	0.001462228	1.47026E-07	3.74696E-06	3.9755E-06	4.2071E-07	8.29019E-06	8.29019254	553427	4179803	33.73	0.01096142	0.0114065	0.01096934	0.01045504
553437417980333.73	553437	4179803	33.73	0.003599561	0.003745717	0.003816175	0.004374616	0.004856944	0.005054156	0.005149226	0.005902739	0.002642799	0.002750107	0.00231828	0.001084925	1.48875E-07	3.79409E-06	4.08942E-06	4.5722E-07	8.4896E-06	8.48960431	553437	4179803	33.73	0.0110993	0.01154998	0.01128368	0.01136228
553417417972336.48	553417	4179723	36.48	0.002199601	0.002288914	0.002331969	0.002673218	0.002812944	0.002927161	0.002982222	0.003418626	0.002609369	0.00271532	0.002288955	0.001071202	1.02233E-07	2.60541E-06	2.75553E-06	2.8824E-07	5.75141E-06	5.75140819	553417	4179723	36.48	0.00762191	0.00793139	0.00760315	0.00716305
553427417972336.48	553427	4179723	36.48	0.002427673	0.002526246	0.002573766	0.002950399	0.00317361	0.003302471	0.003364591	0.00385695	0.003485688	0.003627221	0.003057667	0.001430949	1.21884E-07	3.10621E-06	3.26033E-06	3.3151E-07	6.81994E-06	6.81993505	553427	4179723	36.48	0.00908697	0.00945594	0.00899602	0.0082383
553437417972336.48	553437	4179723	36.48	0.002700967	0.002810637	0.002863506	0.003282538	0.003641729	0.003789598	0.003860881	0.004425865	0.003851256	0.004007632	0.003378346	0.001581022	1.36732E-07	3.48461E-06	3.66142E-06	3.7381E-07	7.65657E-06	7.65657351	553437	4179723	36.48	0.01019395	0.01060787	0.01010273	0.00928943
553447417972336.48	553447	4179723	36.48	0.003036948	0.00316026	0.003219705	0.003690862	0.004283949	0.004457894	0.004541748	0.005206367	0.002958195	0.00307831	0.002594947	0.001214402	1.37874E-07	3.51372E-06	3.75336E-06	4.0689E-07	7.81184E-06	7.8118387	553447	4179723	36.48	0.01027909	0.01069646	0.0103564	0.01011163
553417417973336.48	553417	4179733	36.48	0.002234121	0.002324835	0.002368566	0.002715171	0.002861693	0.00297789	0.003033904	0.003477872	0.002818835	0.002933291	0.002472699	0.001157192	1.06159E-07	2.70547E-06	2.85411E-06	2.9577E-07	5.96152E-06	5.96151991	553417	4179733	36.48	0.00791465	0.00823602	0.00787517	0.00735023
553427417973336.48	553427	4179733	36.48	0.002466822	0.002566985	0.00261527	0.002997977	0.00323177	0.003362993	0.003426251	0.003927633	0.003153344	0.003281383	0.002766133	0.001294515	1.18731E-07	3.02587E-06	3.19206E-06	3.3078E-07	6.66744E-06	6.66744051	553427	4179733	36.48	0.00885194	0.00921136	0.00880766	0.00822013
553437417973336.48	553437	4179733	36.48	0.00274559	0.002857072	0.002910814	0.003336769	0.003716005	0.003866889	0.003939627	0.004516133	0.003630027	0.003777421	0.003184282	0.001490203	1.35359E-07	3.44963E-06	3.63678E-06	3.7597E-07	7.59773E-06	7.59773352	553437	4179733	36.48	0.01009162	0.01050138	0.01003472	0.00934311
553447417973336.48	553447	4179733	36.48	0.00308805	0.003213437	0.003273882	0.003752967	0.004388893	0.0045671	0.004653008	0.005333908	0.002719926	0.002830366	0.002385936	0.001116588	1.36771E-07	3.48561E-06	3.73757E-06	4.1059E-07	7.77053E-06	7.7705329	553447	4179733	36.48	0.01019687	0.0106109	0.01031283	0.01020346
553417417974336.48	553417	4179743	36.48	0.002271085	0.002363301	0.002407755	0.002760095	0.002912915	0.003031191	0.003088209	0.003540123	0.002660267	0.002768284	0.002333603	0.001092096	1.05215E-07	2.68142E-06	2.83759E-06	2.9747E-07	5.92168E-06	5.92168287	553417	4179743	36.48	0.00784427	0.00816278	0.00782957	0.00739231
553427417974336.48	553427	4179743	36.48	0.002509156	0.002611038	0.002660152	0.003049426	0.003292265	0.003425945	0.003490387	0.004001155	0.003051333	0.003175229	0.002676648	0.001252637	1.18742E-07	3.02615E-06	3.19914E-06	3.3412E-07	6.67815E-06	6.67815366	553427	4179743	36.48	0.00885275	0.00921221	0.00882719	0.00830322
553437417974336.48	553437	4179743	36.48	0.002794395	0.002907858	0.002962556	0.003396082	0.003792803	0.003946806	0.004021047	0.004609468	0.003597083	0.003743139	0.003155384	0.001476679	1.36602E-07	3.48131E-06	3.67456E-06	3.8156E-07	7.67404E-06	7.67403563	553437	4179743	36.48	0.01018428	0.0105978	0.01013899	0.00948223
553447417974336.48	553447	4179743	36.48	0.003144505	0.003272184	0.003333735	0.003821578	0.004491708	0.00467409	0.004762011	0.005458861	0.003357616	0.003493949	0.002945322	0.001378373	1.4746E-07	3.75803E-06	4.00149E-06	4.2891E-07	8.3359E-06	8.33589988	553447	4179743	36.48	0.01099383	0.01144022	0.01104107	0.01065881
553417417975336.48	553417	4179753	36.48	0.002310808	0.002404636	0.002449868	0.00280837	0.00296759	0.003088086	0.003146174	0.003606571	0.002590327	0.002695505	0.002272251	0.001063384	1.05543E-07	2.68978E-06	2.85162E-06	3.0093E-07	5.94787E-06	5.94786755	553417	4179753	36.48	0.00786873	0.00818823	0.00786829	0.00747833
553427417975336.48	553427	4179753	36.48	0.00255516	0.00265891	0.002708925	0.003105337	0.003356095	0.003492366	0.003558058	0.004078728	0.003016176	0.003138645	0.002645808	0.001238204	1.19744E-07	3.05168E-06	3.23017E-06	3.3891E-07	6.7405E-06	6.74049745	553427	4179753	36.48	0.00892743	0.00928992	0.00891279	0.00842227
553437417975336.48	553437	4179753	36.48	0.002848192	0.00296384	0.003019591	0.003461463	0.003873403	0.004030679	0.004106497	0.004707423	0.003630386	0.003777795	0.003184598	0.001490351	1.38851E-07	3.53863E-06	3.73679E-06	3.8869E-07	7.80296E-06	7.80295991	553437	4179753	36.48	0.01035198	0.01077231	0.01031069	0.00965924
553447417975336.48	553447	4179753	36.48	0.003207799	0.003338048	0.003400838	0.0038985	0.003632254	0.003779738	0.003850836	0.00441435	0.002635452	0.002742462	0.002311835	0.001081909	1.27095E-07	3.23902E-06	3.466E-06	3.7804E-07	7.21016E-06	7.21016273	553447	4179753	36.48	0.0094755	0.00986025	0.00956351	0.00939476
553407417976336.48	553407	4179763	36.48	0.002140777	0.002227701	0.002269605	0.002601728	0.002712662	0.002822807	0.002875904	0.003296751	0.002212664	0.002302507	0.001940963	0.000908346	9.47778E-08	2.41542E-06	2.56827E-06	2.7391E-07	5.35237E-06	5.35237254	553407	4179763	36.48	0.0070661	0.00735301	0.00708647	0.00680682
553417417976336.48	553417	4179763	36.48	0.002353556	0.00244912	0.002495188	0.002860323	0.003026882	0.003149785	0.003209033	0.003678629	0.00256377	0.002667869	0.002248955	0.001052482	1.06556E-07	2.71558E-06	2.88238E-06	3.0548E-07	6.01E-06	6.00999713	553417	4179763	36.48	0.00794421	0.00826677	0.00795318	0.00759143
553427417976336.48	553427	4179763	36.48	0.002605308	0.002711094	0.002762091	0.003166282	0.003424541	0.003563591	0.003630623	0.004161911	0.003017181	0.003139691	0.00264669	0.001238617	1.21348E-07	3.09256E-06	3.27605E-06	3.4473E-07	6.83469E-06	6.83468717	553427	4179763	36.48	0.00904703	0.00941438	0.0090394	0.00856681
553437417976336.48	553437	4179763	36.48	0.002907912	0.003025984	0.003082904	0.003534042	0.003957231	0.004117911	0.00419537	0.004809301	0.003697511	0.003847645	0.00324348	0.001517907	1.41677E-07	3.61065E-06	3.81329E-06	3.9682E-07	7.96242E-06	7.96242413	553437	4179763	36.48	0.01056265	0.01099154	0.01052175	0.00986125
553447417976336.48	553447	4179763	36.48	0.003279915	0.003413093	0.003477294	0.003986145	0.004714873	0.004906316	0.004998605	0.005730078	0.002502791	0.002604415	0.002195464	0.001027449	1.40804E-07	3.5884E-06	3.86751E-06	4.3232E-07	8.02904E-06	8.02903715	553447	4179763	36.48	0.01049758	0.01092382	0.01067136	0.01074367
553407417977336.48	553407	4179773	36.48	0.002180253	0.002268779	0.002311456	0.002649704	0.002771032	0.002883547	0.002937788	0.00336769	0.002203523	0.002292995	0.001932944	0.000904593	9.59676E-08	2.44574E-06	2.60296E-06	2.7854E-07	5.42321E-06	5.42320804	553407	4179773	36.48	0.00715481	0.00744532	0.00718219	0.00692199
553417417977336.48	553417	4179773	36.48	0.002399535	0.002496966	0.002543935	0.002916202	0.003092854	0.003218437	0.003278976	0.003758806	0.002563517	0.002667606	0.002248733	0.001052378	1.08054E-07	2.75376E-06	2.92532E-06	3.1095E-07	6.09808E-06	6.09808336	553417	4179773	36.48	0.00805591	0.00838301	0.00807164	0.00772739
553427417977336.48	553427	4179773	36.48	0.00265988	0.002767882	0.002819946	0.003232604	0.003500181	0.003642302	0.003710815	0.004253838	0.003043254	0.003166822	0.002669561	0.001249321	1.23444E-07	3.14598E-06	3.33437E-06	3.5153E-07	6.95533E-06	6.95532513	553427	4179773	36.48	0.00920331	0.00957701	0.00920032	0.00873576
553437417977336.48	553437	4179773	36.48	0.002974081	0.00309484	0.003153055	0.003614458	0.004049349	0.004213768	0.004293031	0.004921253	0.003134055	0.00326131	0.002749212	0.001286596	1.36243E-07	3.47215E-06	3.69497E-06	3.9525E-07	7.69861E-06	7.69860919	553437	4179773	36.48	0.01015748	0.01056992	0.0101953	0.00982231
553407417978336.48	553407	4179783	36.48	0.00222231	0.002312545	0.002356045	0.002700817	0.002836762	0.002951946	0.003007473	0.003447573	0.00221065	0.002300411	0.001939196	0.000907519	9.7509E-08	2.48502E-06	2.64664E-06	2.8393E-07	5.5131E-06	5.51310035	553407	4179783	36.48	0.00726972	0.0075649	0.00730271	0.00705591
553417417978336.48	553417	4179783	36.48	0.002448842	0.002548275	0.002596209	0.002976126	0.003168046	0.003296681	0.003358692	0.003850188	0.002581807	0.002686639	0.002264777	0.001059887	1.09969E-07	2.80257E-06	2.97897E-06	3.1734E-07	6.20885E-06	6.20884889	553417	4179783	36.48	0.00819869	0.00853159	0.00821968	0.0078862
553427417978336.48	553427	4179783	36.48	0.002718989	0.00282939	0.002882612	0.00330444	0.003586697	0.003732331	0.003802537	0.004358983	0.003089338	0.003214778	0.002709987	0.001268239	1.26016E-07	3.21151E-06	3.40498E-06	3.5941E-07	7.10192E-06	7.10191597	553427	4179783	36.48	0.00939502	0.0097765	0.00939514	0.00893166
553437417978336.48	553437	4179783	36.48	0.003046812	0.003170525	0.003230163	0.003702851	0.004151408	0.004319972	0.004401232	0.005045288	0.003066997	0.00319153	0.002690389	0.001259068	1.37688E-07	3.50897E-06	3.74081E-06	4.0269E-07	7.79016E-06	7.79016215	553437	4179783	36.48	0.01026522	0.01068203	0.01032178	0.01000721
553407417979336.48	553407	4179793	36.48	0.002267021	0.002359072	0.002403446	0.002755156	0.00291183	0.003030062	0.003087058	0.003538804	0.002230649	0.002321222	0.001956739	0.000915729	9.93838E-08	2.5328E-06	2.69902E-06	2.9012E-07	5.62132E-06	5.62132415	553407	4179793	36.48	0.0074095	0.00771036	0.00744724	0.00720969
553417417979336.48	553417	4179793	36.48	0.002501497	0.002603068	0.002652032	0.003040118	0.003255794	0.003387992	0.003451721	0.00395683	0.002615743	0.002721953	0.002294546	0.001073818	1.12308E-07	2.86217E-06	3.0437E-06	3.2477E-07	6.34294E-06	6.34294484	553417	4179793	36.48	0.00837303	0.00871301	0.0083983	0.00807077
553427417979336.48	553427	4179793	36.48	0.002782592	0.002895576	0.002950043	0.003381739	0.003690227	0.003840065	0.003912297	0.004484805	0.003154609	0.003282699	0.002767243	0.001295034	1.29133E-07	3.29096E-06	3.48995E-06	3.6866E-07	7.2787E-06	7.27869587	553427	4179793	36.48	0.00962743	0.01001834	0.00962958	0.00916158
553437417979336.48	553437	4179793	36.48	0.00312606	0.003252991	0.00331418	0.003799162	0.004273759	0.004447291	0.004530946	0.005193984	0.00249955	0.002601041	0.002192621	0.001026118	1.3278E-07	3.38391E-06	3.63787E-06	4.0317E-07	7.55774E-06	7.5577414	553437	4179793	36.48	0.00989937	0.01030132	0.01003775	0.01001926
553407417980336.48	553407	4179803	36.48	0.002314512	0.00240849	0.002453794	0.002812871	0.002998273	0.003120015	0.003178703	0.00364386	0.002262208	0.002354063	0.001984423	0.000928685	1.01604E-07	2.58937E-06	2.76052E-06	2.9719E-07	5.74868E-06	5.74868022	553407	4179803	36.48	0.00757499	0.00788257	0.00761692	0.00738542
553417417980336.48	553417	4179803	36.48	0.002557533	0.00266138	0.002711441	0.003108221	0.00335991	0.003496335	0.003562102	0.004083364	0.002665334	0.002773557	0.002338048	0.001094176	1.15121E-07	2.93386E-06	3.12101E-06	3.3342E-07	6.50341E-06	6.50340721	553417	4179803	36.48	0.00858278	0.00893127	0.00861159	0.00828576
553427417980336.48	553427	4179803	36.48	0.002850582	0.002966327	0.003022124	0.003464368	0.003818508	0.003973555	0.004048299	0.004640708	0.003242904	0.003374579	0.002844696	0.001331281	1.3295E-07	3.38823E-06	3.59343E-06	3.7972E-07	7.49433E-06	7.49432714	553427	4179803	36.48	0.00991199	0.01031446	0.00991512	0.00943636
553437417980336.48	553437	4179803	36.48	0.003211528	0.003341929	0.003404791	0.003903032	0.004436598	0.004616742	0.004703584	0.005391885	0.002382322	0.002479054	0.002089788	0.000977994	1.34539E-07	3.42872E-06	3.69601E-06	4.1338E-07	7.67265E-06	7.6726509	553437	4179803	36.48	0.01003045	0.01043772	0.01019816	0.01027291

249 Pennysylvania Avenue - Freeway Health Risk Assessment

Maximum Individual Non-Cancer Impact Calculations - Sensitive Receptors (Maximum Impacted Senior Residential Receptor) (IMPACT AT ALL OTHER LOCATIONS ON THE PROJECT SITE WOULD BE LESS THAN SHOWN)

Maximum Non-cancer Chronic Hazards / Toxicological Endpoints*

Receptor Group	Pollutant	CREL[1]	CONC	WFrac	$CONC_{WF}$	HI		ALIM	BN	CVS	DEV	ENDC	EYE	HEM	IMMUN	KIDN	NS	REPRO	RESP	SK
Project:																				
MEI - Max	DPM	5.00E+00	2.31E-02	1.00E+00	2.31E-02	0.005		-	-	-	-	-	-	-	-	-	-	-	4.61E-03	-
							Total Risk				-			-				-	0.005	
							Threshold				1.00			1.00				1.00	1.00	
							Over?				NO			NO				NO	NO	

Notes:

1. California Air Resources Board, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values," "OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs," "OEHHA/ARB Approved Acute Reference Exposure Levels and Target Organs," and "OEHHA/ARB Approved 8-Hour Reference Exposure Levels and Target Organs," http://www.arb.ca.gov/toxics/healthval/healthval.htm. Tables last updated: May 8, 2018. Downloaded: 08/14/18.

Source: ESA, 2020

Where:

$CONC_{WF}$	Pollutant Concentration ($\mu g/m^3$) multiplied by the weight fraction
CREL	Chronic Reference Exposure Level
HI	Hazard Index
MEI	Maximally Exposed Individual
WFrac	Weight fraction of speciated component

* Key to Toxicological Endpoints

ALIM	Alimentary Tract	EYE	Eye	NS	Nervous System
BN	Bone	HEM	Hematologic System	REPRO	Reproductive System
CVS	Cardiovascular System	IMMUN	Immune System	RESP	Respiratory System
DEV	Developmental System	KIDN	Kidney	SK	Skin
ENDC	Endocrine System				

Appendix C

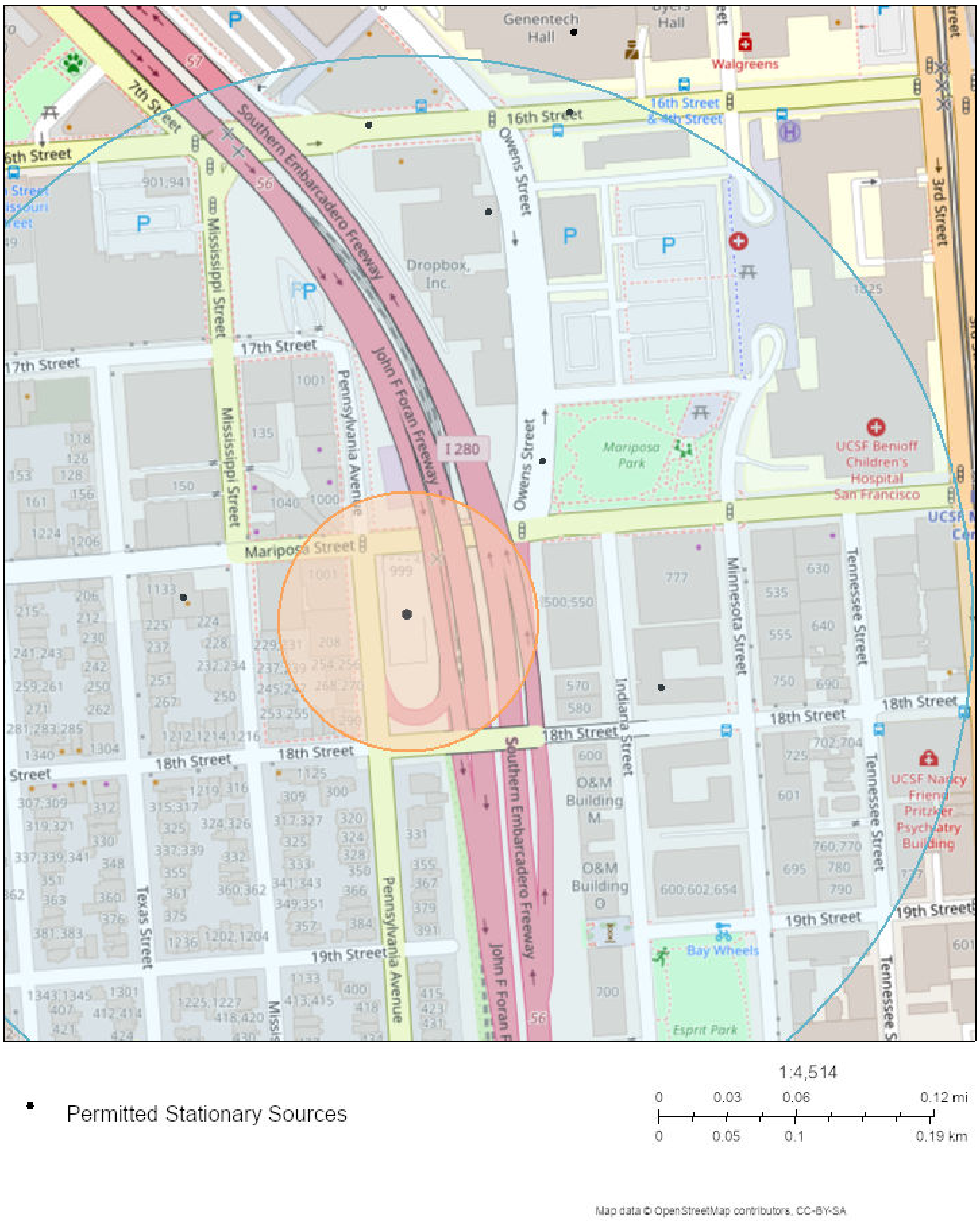
BAAQMD Permitted Stationary Source Report and Rail Source Impacts

249 Pennsylvania Avenue Screening Report

Area of Interest (AOI) Information

Area : 5,279,060.47 ft²

Jan 30 2024 14:57:16 Pacific Standard Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	6	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	18971	UCSF/CPFM	654 MINNESOTA ST	San Francisco	CA
2	21909	Innova Dynamics	1700 Owens Street Suite 405	San Francisco	CA
3	24382	Linea Caffe	1125 Mariposa Street	San Francisco	CA
4	24586	Dropbox	1800 Owens Street	San Francisco	CA
5	200652	The Exchange	1800 OWENS ST	San Francisco	CA
6	0	University of California SF	600 16th Street	San Francisco	CA

#	Zip	County	Latitude	Longitude	Details
1	94107	San Francisco	37.763132	-122.391379	Generator
2	94158	San Francisco	37.766669	-122.393700	*No Data*
3	94107	San Francisco	37.763702	-122.395177	*No Data*
4	94158	San Francisco	37.766123	-122.392751	Generator
5	94158	San Francisco	37.764553	-122.392322	*No Data*
6	94107	San Francisco	37.766751	-122.392110	*No Data*

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	622110	Health Care and Social Assistance	Hospitals	General Medical and Surgical Hospitals	54.194000
2	541720	Professional, Scientific, and Technical Services	Professional, Scientific, and Technical Services	Research and Development in the Social Sciences and Humanities	0.000000
3	311920	Manufacturing	Food Manufacturing	Coffee and Tea Manufacturing	0.019000
4	541511	Professional, Scientific, and Technical Services	Professional, Scientific, and Technical Services	Custom Computer Programming Services	2.874000
5	561990	Administrative and Support and Waste Management and Remediation Services	Administrative and Support Services	All Other Support Services	39.275000
6	611310	Educational Services	Educational Services	Colleges, Universities, and Professional Schools	16.441000

#	Chronic_Ha	PM25	Count
1	0.015000	0.073000	1
2	0.000000	0.005000	1
3	0.000000	0.077000	1
4	0.010000	0.003000	1
5	0.015000	0.052000	1
6	0.039000	3.962000	1

Facility Name	Address	City	Details	Cancer Risk	Chronic Hazard Index @ Each Facility	PM 2.5	Distance to Source (ft)	Multiplier	Cancer Risk	Chronic Hazard Index Adjusted @ Project Site	PM 2.5
UCSF/CPFM	654 MINNESOTA ST	San Francisco	Generator	54.194	0.015	0.073	659	0.08	4.34	0.001	0.006
Innova Dynamics	1700 Owens Street Suite 405	San Francisco	No Data	0	0	0.005	n/a	n/a	n/a	n/a	n/a
Linea Caffe	1125 Mariposa Street	San Francisco	No Data	0.019	0	0.077	422	0.402	0.01	0.000	0.031
Dropbox	1800 Owens Street	San Francisco	Generator	2.874	0.01	0.003	691	0.08	0.23	0.001	0.000
The Exchange	1800 OWENS ST	San Francisco	No Data	39.275	0.015	0.052	691	0.238	9.35	0.004	0.012
University of California SF	600 16th Street	San Francisco	No Data	16.441	0.039	3.962	~1000	0.132	2.17	0.005	0.523
Combined Total, Uncontrolled									**16**	**0.01**	**0.57**
Combined Total, w/MERV Filtration									**2.4**	**0.002**	**0.1**

Note:

Multiplier based off of the Public BAAQMD Health Risk Calculator Tool. Generators used the distance multiplier for "Diesel Internal Combustion Engines" and No Data entries were treated as "Generic Case".

Similar to the freeway health risk impacts, a conservative 50% removal efficiency was assumed for the installation of MERV filtration at 249 Pennsylvania Avenue.

Source: BAAQMD Stationary Source Screening Map, 2024. Rincon Consultants, 2024.

249 Pennsylvania Avenue

BAAQMD Rail and Railyard HRA Screening Tools

BAAQMD Rail and Railyard Screening Data Layers

XY	X	Y	PM25	CancerRisk	ChronicHazard
553407417	553407	4179763	0.854	50.213	0.139
553407417	553407	4179773	0.854	50.213	0.139
553407417	553407	4179783	0.854	50.213	0.139
553407417	553407	4179793	0.854	50.213	0.139
553407417	553407	4179803	0.854	50.213	0.139
553417417	553417	4179723	0.452	25.690	0.073
553417417	553417	4179733	0.452	25.690	0.073
553417417	553417	4179743	0.452	25.690	0.073
553417417	553417	4179753	0.452	25.690	0.073
553417417	553417	4179763	0.854	50.213	0.139
553417417	553417	4179773	0.854	50.213	0.139
553417417	553417	4179783	0.854	50.213	0.139
553417417	553417	4179793	0.854	50.213	0.139
553417417	553417	4179803	0.854	50.213	0.139
553427417	553427	4179723	0.452	25.690	0.073
553427417	553427	4179733	0.452	25.690	0.073
553427417	553427	4179743	0.452	25.690	0.073
553427417	553427	4179753	0.452	25.690	0.073
553427417	553427	4179763	0.854	50.213	0.139
553427417	553427	4179773	0.854	50.213	0.139
553427417	553427	4179783	0.854	50.213	0.139
553427417	553427	4179793	0.854	50.213	0.139
553427417	553427	4179803	0.854	50.213	0.139
553437417	553437	4179723	0.452	25.690	0.073
553437417	553437	4179733	0.452	25.690	0.073
553437417	553437	4179743	0.452	25.690	0.073
553437417	553437	4179753	0.452	25.690	0.073
553437417	553437	4179763	0.854	50.213	0.139
553437417	553437	4179773	0.854	50.213	0.139
553437417	553437	4179783	0.854	50.213	0.139
553437417	553437	4179793	0.854	50.213	0.139
553437417	553437	4179803	0.854	50.213	0.139
553447417	553447	4179723	1.225	70.821	0.196
553447417	553447	4179733	1.225	70.821	0.196
553447417	553447	4179743	1.225	70.821	0.196
553447417	553447	4179753	1.225	70.821	0.196
553447417	553447	4179763	1.206	66.936	0.187

AERMOD Rail Elevation Screening - % Reductions from Floor 1 to 2

% Reduction	PM25	CancerRisk	ChronicHazard
-20.8%	0.677	39.785	0.110
-20.9%	0.676	39.731	0.110
-21.0%	0.675	39.678	0.110
-21.1%	0.674	39.626	0.110
-21.2%	0.673	39.574	0.110
-21.4%	0.356	20.202	0.058
-21.5%	0.355	20.164	0.057
-21.6%	0.355	20.129	0.057
-21.8%	0.354	20.095	0.057
-21.9%	0.667	39.212	0.109
-22.0%	0.666	39.147	0.109
-22.2%	0.665	39.080	0.108
-22.3%	0.663	39.011	0.108
-22.5%	0.662	38.938	0.108
-22.8%	0.349	19.831	0.057
-23.0%	0.348	19.784	0.056
-23.2%	0.348	19.737	0.056
-23.4%	0.347	19.691	0.056
-23.5%	0.653	38.393	0.107
-23.7%	0.651	38.294	0.106
-23.9%	0.649	38.188	0.106
-24.2%	0.648	38.074	0.106
-24.4%	0.645	37.948	0.105
-25.2%	0.339	19.225	0.055
-25.5%	0.337	19.149	0.055
-25.8%	0.336	19.070	0.054
-26.1%	0.334	18.988	0.054
-26.4%	0.628	36.943	0.103
-26.8%	0.625	36.758	0.102
-27.2%	0.622	36.558	0.101
-27.6%	0.618	36.337	0.101
-28.1%	0.614	36.090	0.100
-29.7%	0.861	49.791	0.138
-30.2%	0.855	49.427	0.137
-30.7%	0.849	49.057	0.136
-31.3%	0.842	48.680	0.135
-31.8%	0.822	45.645	0.128

MERV-13 85% Reduction

PM25	CancerRisk	ChronicHazard
0.101	5.968	0.017
0.101	5.960	0.017
0.101	5.952	0.017
0.101	5.944	0.016
0.101	5.936	0.016
0.053	3.030	0.009
0.053	3.025	0.009
0.053	3.019	0.009
0.053	3.014	0.009
0.100	5.882	0.016
0.100	5.872	0.016
0.100	5.862	0.016
0.100	5.852	0.016
0.099	5.841	0.016
0.052	2.975	0.008
0.052	2.968	0.008
0.052	2.961	0.008
0.052	2.954	0.008
0.098	5.759	0.016
0.098	5.744	0.016
0.097	5.728	0.016
0.097	5.711	0.016
0.097	5.692	0.016
0.051	2.884	0.008
0.051	2.872	0.008
0.050	2.861	0.008
0.050	2.848	0.008
0.094	5.541	0.015
0.094	5.514	0.015
0.093	5.484	0.015
0.093	5.451	0.015
0.092	5.414	0.015
0.129	7.469	0.021
0.128	7.414	0.021
0.127	7.359	0.020
0.126	7.302	0.020
0.123	6.847	0.019

249 Pennsylvania Avenue

AERMOD Unitized Rail Concentrations, by Floor

		Elev (m):	13.69	17.04	20.02	22.76	25.5	28.25	30.99	33.73	36.48	**% Diff Concentrations**
XY	**X**	**Y**	**Floor 1**	**Floor 2**	**Floor 3**	**Floor 4**	**Floor 5**	**Floor 6**	**Floor 7**	**Floor 8**	**Floor 9**	**Floor 1 -> 2**
553417417	553417	4179723	13.13037	10.32542	8.93337	8.16673	7.66154	7.29815	7.02207	6.80749	6.63554	-21.4%
553427417	553427	4179723	14.3495	11.07703	9.53951	8.70941	8.17072	7.79072	7.50897	7.29586	7.12995	-22.8%
553437417	553437	4179723	15.36728	11.50015	9.79878	8.91423	8.36017	7.98507	7.71852	7.52427	7.37761	-25.2%
553447417	553447	4179723	15.7557	11.07697	9.22376	8.33141	7.80863	7.47548	7.24937	7.08914	6.97005	-29.7%
553417417	553417	4179733	13.39273	10.51206	9.08058	8.29172	7.7737	7.40359	7.12444	6.90875	6.73684	-21.5%
553427417	553427	4179733	14.61798	11.25726	9.6764	8.82295	8.2719	7.88628	7.60294	7.39015	7.22552	-23.0%
553437417	553437	4179733	15.61385	11.63822	9.88953	8.98245	8.41843	8.04065	7.77495	7.58278	7.4386	-25.5%
553447417	553447	4179733	15.92861	11.11685	9.222	8.31437	7.78728	7.45472	7.23102	7.07368	6.95747	-30.2%
553417417	553417	4179743	13.64038	10.68772	9.21929	8.40925	7.87884	7.50206	7.21998	7.00342	6.83181	-21.6%
553427417	553427	4179743	14.86781	11.42276	9.8014	8.92587	8.36286	7.97183	7.68713	7.475	7.31194	-23.2%
553437417	553437	4179743	15.83556	11.75516	9.9624	9.0347	8.46158	8.08127	7.81668	7.62695	7.48558	-25.8%
553447417	553447	4179743	16.06853	11.13058	9.20006	8.28018	7.74944	7.41731	7.19615	7.04201	6.9289	-30.7%
553417417	553417	4179753	13.87342	10.85203	9.3491	8.51898	7.9765	7.59321	7.30822	7.091	6.91993	-21.8%
553427417	553427	4179753	15.09839	11.57246	9.91331	9.01713	8.44269	8.04649	7.76059	7.54939	7.38818	-23.4%
553437417	553437	4179753	16.03118	11.8491	10.01575	9.06928	8.48755	8.10503	7.84176	7.65481	7.51648	-26.1%
553447417	553447	4179753	16.17356	11.1171	9.15752	8.22736	7.69272	7.36085	7.14215	6.99116	6.88111	-31.3%
553407417	553407	4179763	12.82855	10.16441	8.77263	7.99065	7.47603	7.10981	6.83516	6.62312	6.45314	-20.8%
553417417	553417	4179763	14.09183	11.00459	9.4695	8.62056	8.06655	7.67698	7.38926	7.17154	7.00119	-21.9%
553427417	553427	4179763	15.30914	11.70534	10.01113	9.09578	8.51057	8.10948	7.82265	7.61265	7.45357	-23.5%
553437417	553437	4179763	16.19967	11.91834	10.04787	9.08426	8.49482	8.11047	7.84869	7.66458	7.52936	-26.4%
553447417	553447	4179763	16.24143	11.07551	9.09256	8.15301	7.61451	7.28246	7.06569	6.91733	6.80968	-31.8%
553407417	553407	4179773	13.02689	10.30756	8.88805	8.08909	7.56351	7.1907	6.91255	6.69912	6.52905	-20.9%
553417417	553417	4179773	14.29586	11.14523	9.58038	8.71369	8.14869	7.75299	7.46281	7.24479	7.07539	-22.0%
553427417	553427	4179773	15.49958	11.82043	10.09379	9.16074	8.56562	8.16026	7.87286	7.66432	7.50762	-23.7%
553437417	553437	4179773	16.33912	11.96083	10.05651	9.0781	8.48231	8.09695	7.83705	7.65596	7.52386	-26.8%
553407417	553407	4179783	13.2147	10.44221	8.99684	8.18195	7.64583	7.26655	6.98505	6.77038	6.60043	-21.0%
553417417	553417	4179783	14.48604	11.27416	9.68156	8.79845	8.22308	7.82175	7.52928	7.31125	7.14318	-22.2%
553427417	553427	4179783	15.66918	11.91685	10.1603	9.21119	8.60732	8.19841	7.911	7.70432	7.55031	-23.9%
553437417	553437	4179783	16.44692	11.97426	10.03992	9.04944	8.44955	8.06438	7.80706	7.62937	7.50075	-27.2%
553407417	553407	4179793	13.39266	10.56892	9.09956	8.26964	7.72335	7.33782	7.05307	6.83734	6.66774	-21.1%
553417417	553417	4179793	14.663	11.39168	9.77344	8.87482	8.28968	7.88305	7.58866	7.37095	7.20451	-22.3%
553427417	553427	4179793	15.81791	11.99398	10.20978	9.24608	8.63445	8.223	7.93614	7.73186	7.58109	-24.2%

553437417	553437	4179793	16.52141	11.95577	9.99513	8.99552	8.39353	8.01	7.75607	7.58232	7.45786		-27.6%
553407417	553407	4179803	13.56166	10.68814	9.19654	8.35251	7.79636	7.40493	7.11716	6.90059	6.73169		-21.2%
553417417	553417	4179803	14.82773	11.49828	9.85619	8.94303	8.34873	7.93726	7.64141	7.42447	7.26021		-22.5%
553427417	553427	4179803	15.94573	12.05086	10.24079	9.26395	8.64594	8.2327	7.94733	7.74618	7.59938		-24.4%
553437417	553437	4179803	16.55918	11.90179	9.91842	8.91238	8.31023	7.92968	7.68009	7.51124	7.39164		-28.1%