Orchard Logistics Center

AIR QUALITY IMPACT ANALYSIS

CITY OF BEAUMONT

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com

Alyssa Barnett
abarnett@urbanxroads.com

Michael Tirohn
mtirohn@urbanxroads.com

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LIST OF ABBREVIATED TERMS

%	Percent
°F	Degrees Fahrenheit
(1)	Reference
$\mu g/m^3$	Microgram per Cubic Meter
1992 CO Plan	*1992 Federal Attainment Plan for Carbon Monoxide*
1993 CEQA Handbook	SCAQMD's *CEQA Air Quality Handbook (1993)*
2016-2040 RTP/SCS	*2016-2040 Regional Transportation Plan/Sustainable Communities Strategy*
AB 2595	California Clean Air Act
AQIA	Air Quality Impact Analysis
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
BC	Black Carbon
Brief	Brief of Amicus Curiae by the SCAQMD in the Friant Ranch Case
C_2Cl_4	Perchloroethylene
C_4H_6	1,3-butadiene
C_6H_6	Benzene
C_2H_3Cl	Vinyl Chloride
C_2H_4O	Acetaldehyde
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEQA Guidelines	*2019 CEQA Statute and Guidelines*
CH_2O	Formaldehyde
City	City of Beaumont
CO	Carbon Monoxide
COH	Coefficient of Haze
COHb	Carboxyhemoglobin

Cr(VI)	Chromium
CTP	Clean Truck Program
DPM	Diesel Particulate Matter
DRRP	Diesel Risk Reduction Plan
EC	Elemental Carbon
EIR	Environmental Impact Reports
EMFAC	EMissions FACtor Model
EPA	Environmental Protection Agency
ETW	Equivalent Test Weight
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating
H_2S	Hydrogen Sulfide
HDT	Heavy Duty Trucks
HI	Hazard Index
HHDT	Heavy-Heavy-Duty Trucks
hp	Horsepower
lbs	Pounds
lbs/day	Pounds Per Day
LDA	Light Duty Auto
LDR	Low Density Residential
LDT1/LDT2	Light-Duty Trucks
LHDT1/LHDT2	Light-Heavy-Duty Trucks
LST	Localized Significance Threshold
LST Methodology	Final Localized Significance Threshold Methodology
MATES	Multiple Air Toxics Exposure Study
MCY	Motorcycles
MDV	Medium-Duty Vehicles
MHDT	Medium-Heavy-Duty Trucks
MICR	Maximum Individual Cancer Risk
MM	Mitigation Measures
mph	Miles Per Hour
MWELO	California Department of Water Resources' Model Water Efficient
N_2	Nitrogen
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO	Nitric Oxide
NO_2	Nitrogen Dioxide

NO_X	Nitrogen Oxides
O_2	Oxygen
O_3	Ozone
O_2 Deficiency	Chronic Hypoxemia
OBD-II	On-Board Diagnostic
Pb	Lead
PM_{10}	Particulate Matter 10 microns in diameter or less
$PM_{2.5}$	Particulate Matter 2.5 microns in diameter or less
POLA	Port of Los Angeles
POLB	Port of Long Beach
ppm	Parts Per Million
Project	Orchard Logistics Center
RECLAIM	Regional Clean Air Incentives Market
RFG-2	Reformulated Gasoline Regulation
ROG	Reactive Organic Gases
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	Square Foot or Square Feet
SIPs	State Implementation Plans
SO_2	Sulfur Dioxide
SO_4	Sulfates
SO_X	Sulfur Oxides
SR-60	State Route 60
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TDM	Transportation Demand Management
Title 24	California Building Code
TITLE I	Non-Attainment Provisions
TITLE II	Mobile Sources Provisions
TRUs	Transportation Refrigeration Units
UFP	Ultrafine Particles
UTRs	Utility Tractors
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
vph	Vehicles Per Hour

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1 INTRODUCTION

This report presents the results of the AQIA prepared by Urban Crossroads, Inc., for the proposed Orchard Logistics Center (Project). The purpose of this AQIA is to evaluate the potential impacts to air quality associated with construction and operation of the Project and recommend measures to mitigate impacts considered potentially significant in comparison to thresholds established by the SCAQMD.

1.1 SITE LOCATION

The proposed Orchard Logistics Center site is located south of the Moreno Valley Freeway (State Route 60 [SR-60] Freeway), north of 4th Street, and at the norther terminus of Nicholas Road, in the City of Beaumont, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

As shown in Exhibit 1-B, the Project is proposed to consist of 610,000 square feet (sf) of warehouse use within a single building. Consistent with the *Orchard Logistics Center Traffic Analysis*, the building has conservatively been evaluated assuming 10 percent (%) high-cube cold storage warehousing use (61,000 sf) and 90% high-cube fulfillment center warehousing use (549,000 sf). The proposed Project is expected to generate approximately 1,304 total trips per day (652 vehicles inbound + 652 vehicles outbound) which include 1,046 total passenger vehicle trips per day (523 passenger vehicles inbound + 523 passenger vehicles outbound) and 258 total truck trips per day (129 trucks inbound + 129 trucks outbound) (1).

EXHIBIT 1-A: LOCATION MAP

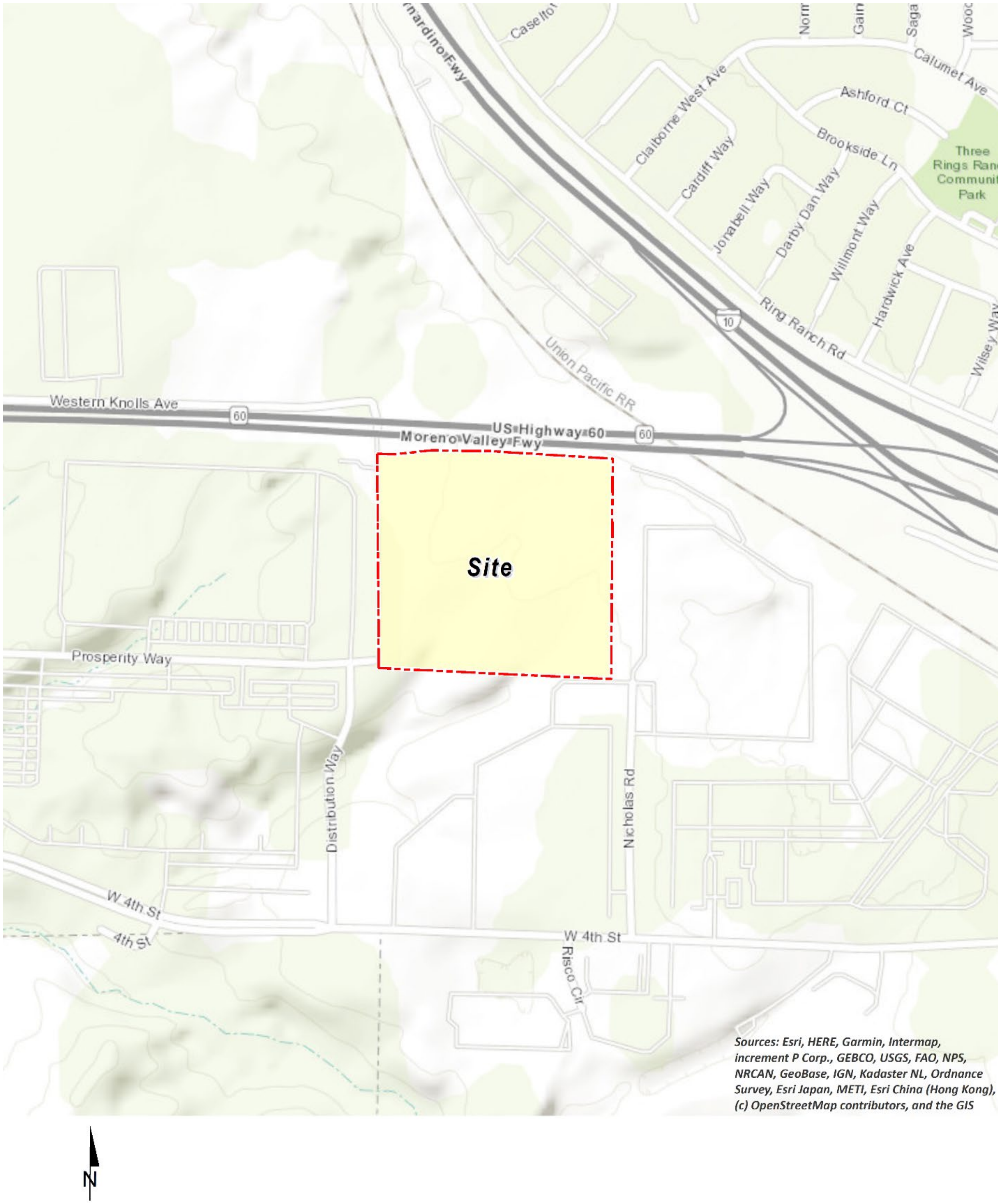
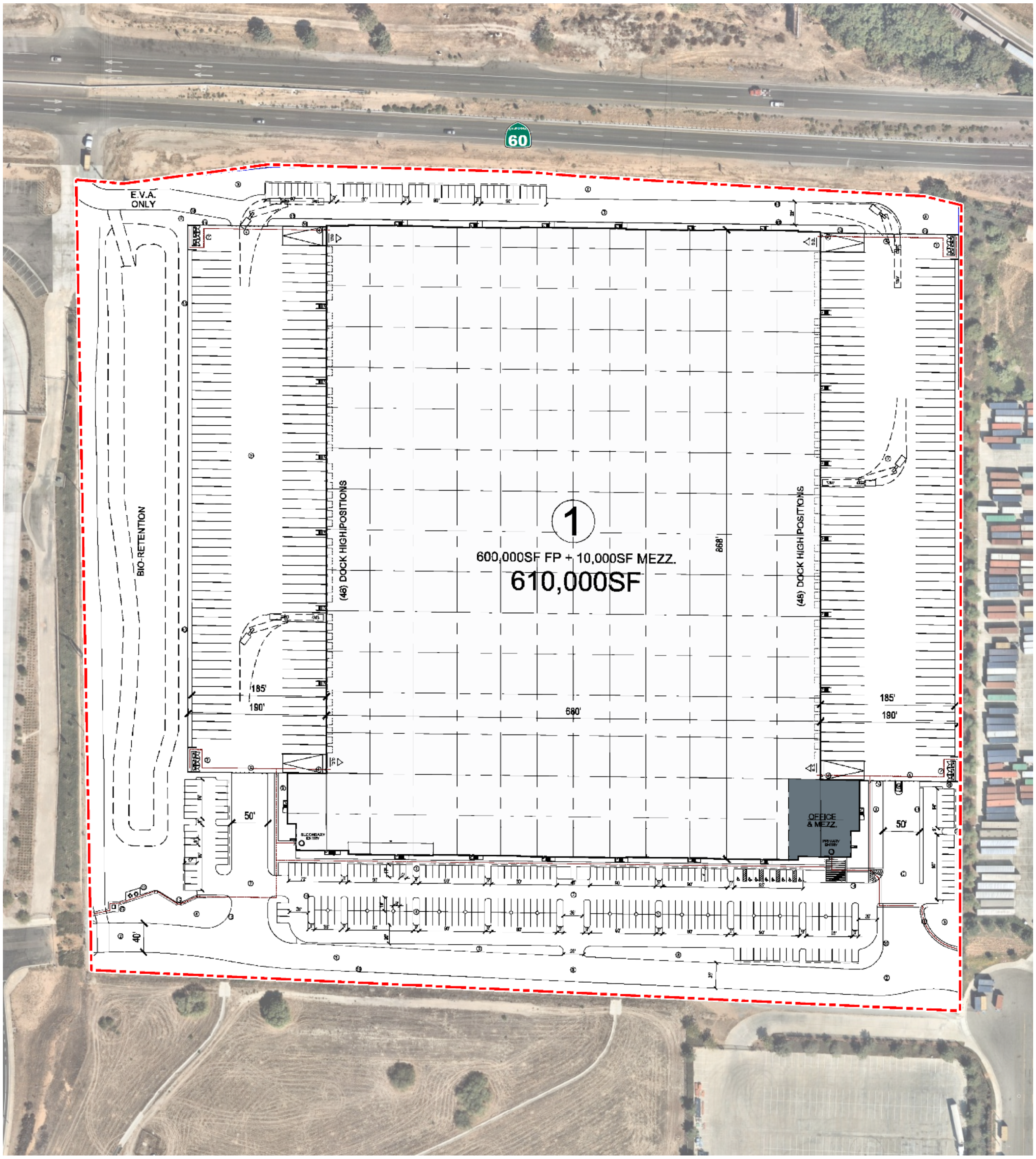


EXHIBIT 1-B: SITE PLAN



LEGEND:

Site Boundary

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2 AIR QUALITY SETTING

This section provides an overview of the existing air quality conditions in the Project area and region.

2.1 SOUTH COAST AIR BASIN (SCAB)

The Project site is located in the SCAB within the jurisdiction of SCAQMD (2). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As previously stated, the Project site is located within the SCAB, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bounded by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

2.2 REGIONAL CLIMATE

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s degrees Fahrenheit (°F). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide (SO_2) to sulfates (SO_4) is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71% along the coast and 59% inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90% of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los

Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14½ hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NO_X and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of elevated levels of primary pollutants along the coastline.

2.3 PROJECT LOCATION AND CLIMATE

The City of Beaumont, including the City's Sphere of Influence (SOI) lies within the SCAB, which is under the jurisdiction of the SCAQMD. As noted above, terrain and geographical location determine climate within the SCAB. The City of Beaumont lies within the terrain south of the San Gorgonio Mountains and

San Bernardino Mountains and northwest of the San Jacinto Mountains (3).

The City of Beaumont has a warm-summer Mediterranean climate, with temperatures reaching an average of up to 95 degrees Fahrenheit during the summer and 52 degrees Fahrenheit during the winter. Due to its higher elevation, it is usually 5-10 degrees cooler than its neighboring lower-elevation cities, such as Riverside, Hemet, Perris, San Jacinto, and the Coachella Valley. The annual precipitation is approximately 17 inches, with most rain occurring between the months of November and April (3).

The distinctive climate of the Project area and the SCAB itself is determined by its terrain and geographical location. The SCAB is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

Approximately 5 to 10 times a year the Project vicinity experiences strong, hot, dry desert winds known as the Santa Ana winds. These winds, associated with atmospheric high pressure, originate in the upper deserts, and are channeled through the passes of the San Bernardino Mountains and into the inland valleys. Santa Ana winds can last for a period of hours or days, and gusts of over 60 miles per hour have been recorded (3).

2.4 CRITERIA POLLUTANTS

Criteria pollutants are pollutants that are regulated by federal and state laws through the development of human health based and/or environmentally based criteria for setting permissible levels as shown on Table 2-1 (4). Other non-criteria pollutants are summarized on Table 2-2. Pollutants, their typical sources, and health effects are identified below on Tables 2-1 and 2-2. Table 2-3 summarizes the applicable ambient air quality standards (AAQS), which are the concentration levels at which health effects are typically seen for various pollutants.

TABLE 2-1: CRITERIA POLLUTANTS

Criteria Pollutant	Description	Sources	Health Effects
Carbon Monoxide (CO)	CO is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen (O_2) supply to the

Criteria Pollutant	Description	Sources	Health Effects
	engines, unlike ozone (O_3), motor vehicles operating at slow speeds are the primary source of CO in the SCAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.		heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with O_2 transport and competing with O_2 to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for O_2 supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (O_2 deficiency) as seen at high altitudes.
Sulfur Dioxide (SO_2)	SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms SO_4. Collectively, these pollutants are referred to as sulfur oxides (SO_X).	Coal or oil burning power plants and industries, refineries, diesel engines	A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, extremely elevated levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Criteria Pollutant	Description	Sources	Health Effects
			Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.
Nitrogen Oxides (NO_X)	NO_X consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with O_2. Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. NO_X is typically created during combustion processes and is a major contributor to smog formation and acid deposition. NO_2 is a criteria air pollutant and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitoring station.	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. In animals, exposure to levels of NO_2 considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in

Criteria Pollutant	Description	Sources	Health Effects
			maintaining immune functions. The severity of lung tissue damage associated with elevated levels of O_3 exposure increases when animals are exposed to a combination of O_3 and NO_2.
Ozone (O_3)	O_3 is a highly reactive and unstable gas that is formed when VOCs and NO_X, both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.	Formed when reactive organic gases (ROG) and NO_X react in the presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for O_3 effects. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated O_3 levels are associated with increased school absences. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple outdoor sports and reside in communities with high O_3 levels. O_3 exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes O_3 may be more toxic than

Criteria Pollutant	Description	Sources	Health Effects
			exposure to O_3 alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.
Particulate Matter	PM_{10}: A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. Particulate matter pollution is a major cause of reduce visibility (haze) which is caused by the scattering of light and consequently the significant reduction air clarity. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. $PM_{2.5}$: A similar air pollutant to PM_{10} consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). The chemical composition of fine particles highly depends on location, time of year, and weather conditions.	Sources of PM_{10} include road dust, windblown dust and construction. Also formed from other pollutants (acid rain, NO_X, SO_X, organics). Incomplete combustion of any fuel. $PM_{2.5}$ comes from fuel combustion in motor vehicles, equipment, and industrial sources, residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO_X, SO_X, organics).	A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in various parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in lifespan, and an increased mortality from lung cancer. Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long term exposure to particulate matter. The elderly, people with pre-existing respiratory or

Criteria Pollutant	Description	Sources	Health Effects
			cardiovascular disease, and children appear to be more susceptible to the effects of elevated levels of PM_{10} and $PM_{2.5}$.
Lead (Pb)	Pb is a heavy metal that is highly persistent in the environment. In the past, the primary source of Pb in the air was emissions from vehicles burning leaded gasoline. The major sources of Pb emissions are ore and metals processing, particularly Pb smelters, and piston-engine aircraft operating on leaded aviation gasoline. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. It should be noted that the Project does not include operational activities such as metal processing or Pb acid battery manufacturing. As such, the Project is not anticipated to generate a quantifiable amount of Pb emissions.	Metal smelters, resource recovery, leaded gasoline, deterioration of Pb paint.	Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

TABLE 2-2: OTHER POLLUTANTS

Other Pollutants	Description	Sources	Health Effects

Volatile Organic Compounds (VOC)	VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have various levels of reactivity; that is, they do not react at the same speed or do not form O_3 to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. VOCs are considered a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.	Organic chemicals are widely used as ingredients in household products. Paints, varnishes, and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.	Breathing VOCs can irritate the eyes, nose, and throat, can cause difficulty breathing and nausea, and can damage the central nervous system as well as other organs. Some VOCs can cause cancer. Not all VOCs have all these health effects, though many have several.
Reactive Organic Compounds (ROG)	ROGs are also precursors in forming O_3 and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and NO_X react in the presence of sunlight. ROGs are considered a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.	Sources similar to VOCs.	Health effects similar to VOCs.

2.5 TOXIC AIR CONTAMINANTS

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate Hazardous Air Pollutants (HAPs). Section 112 of the Clean Air Act lists 187 HAPs to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. The ARB and local air districts regulate TACs and HAPs in California.

Some studies indicate that Diesel Particulate Matter (DPM) poses the greatest health risk among the TACs listed above. A 10- year research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk (5). In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM10 exhaust database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of DPM. A separate *Health Risk Assessment* has been prepared that evaluates the Project's potential impacts to surrounding land uses due to exposure of DPM emissions associated with the Project.

2.6 EXISTING AIR QUALITY

Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect are shown in Table 2-3 (6).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards. At the time of this AQIA, the most recent state and federal standards were updated by CARB on May 4, 2016 and are presented in Table 2-3.

TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (1 OF 2)

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1] Concentration [3]	California Standards [1] Method [4]	National Standards [2] Primary [3,5]	National Standards [2] Secondary [3,6]	National Standards [2] Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 $\mu g/m^3$)		0.070 ppm (137 $\mu g/m^3$)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	12.0 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 $\mu g/m^3$)	Gas Phase Chemiluminescence	100 ppb (188 $\mu g/m^3$)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)		0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 $\mu g/m^3$)	Ultraviolet Fluorescence	75 ppb (196 $\mu g/m^3$)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 $\mu g/m^3$)	
	24 Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 $\mu g/m^3$	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 $\mu g/m^3$ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 $\mu g/m^3$		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 $\mu g/m^3$	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 $\mu g/m^3$)	Gas Chromatography			

See footnotes on next page ...

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TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (2 OF 2)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, PM_{10}, and $PM_{2.5}$ do not exceed standards. All others are not to be equaled or exceeded. It should be noted that the three-year period is presented for informational purposes and is not the basis for how the State assigns attainment status. Attainment status for a pollutant means that the SCAQMD meets the standards set by the EPA or the California EPA (CalEPA). Conversely, nonattainment means that an area has monitored air quality that does not meet the NAAQS or CAAQS standards. In order to improve air quality in nonattainment areas, CARB has implemented a State Implementation Plan (SIP). The SIP outlines the measures that the state will take to improve air quality. Once nonattainment areas meet the standards and additional redesignation requirements, the EPA will designate the area as a maintenance area (7).

2.7 REGIONAL AIR QUALITY

Air pollution contributes to a wide variety of adverse health effects. The EPA has established NAAQS for six of the most common air pollutants: CO, Pb, O_3, particulate matter (PM_{10} and $PM_{2.5}$), NO_2, and SO_2 which are known as criteria pollutants. The SCAQMD monitors levels of various criteria pollutants at 37 permanent monitoring stations and 5 single-pollutant source Pb air monitoring sites throughout the air district (8). On February 21, 2019, CARB posted the 2018 amendments to the state and national area designations. See Table 2-4 for attainment designations for the SCAB (9). Appendix 2.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

TABLE 2-4: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SCAB

Criteria Pollutant	State Designation	Federal Designation
O_3 – 1-hour standard	Nonattainment	--
O_3 – 8-hour standard	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassifiable/Attainment
NO_2	Attainment	Unclassifiable/Attainment
SO_2	Unclassifiable/Attainment	Unclassifiable/Attainment
Pb[1]	Attainment	Unclassifiable/Attainment

Note: See Appendix 2.1 for a detailed map of State/National Area Designations within the SCAB
"-" = The national 1-hour O_3 standard was revoked effective June 15, 2005.

2.8 LOCAL AIR QUALITY

The SCAQMD has designated general forecast areas and air monitoring areas (referred to as Source Receptor Areas [SRA]) throughout the district in order to provide Southern California residents with information about the air quality conditions. The Project site is located within the

[1] The Federal nonattainment designation for lead is only applicable towards the Los Angeles County portion of the SCAB.

San Gorgonio Pass area (SRA 29) which monitors air quality conditions for O_3, NO_2, and PM_{10}. It should be noted that the monitoring station within SRA 29 does not provide data for CO and $PM_{2.5}$. As such, the nearest monitoring station located in SRA 34 (Central San Bernardino Valley 2) will be used to report air quality conditions for CO and $PM_{2.5}$. The most recent three (3) years of data available is shown on Table 2-5 and identifies the number of days ambient air quality standards were exceeded for the study area, which is considered to be representative of the local air quality at the Project site. Data for O_3, CO, NO_2, PM_{10}, and $PM_{2.5}$ for 2018 through 2020 was obtained from the SCAQMD Air Quality Data Tables (10). Additionally, data for SO_2 has been omitted as attainment is yearly met in the SCAB and few monitoring stations measure SO_2 concentrations.

TABLE 2-5: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2018-2020

Pollutant	Standard	Year		
		2018	2019	2020
O_3				
Maximum Federal 1-Hour Concentration (ppm)		0.119	0.119	0.150
Maximum Federal 8-Hour Concentration (ppm)		0.106	0.096	0.115
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	33	24	29
Number of Days Exceeding State/Federal 8-Hour Standard	> 0.070 ppm	69	59	68
CO				
Maximum Federal 1-Hour Concentration	> 35 ppm	2.7	1.3	1.9
Maximum Federal 8-Hour Concentration	> 20 ppm	2.5	1.1	1.4
NO_2				
Maximum Federal 1-Hour Concentration[2]	> 0.100 ppm	0.056	0.056	0.051
Annual Federal Standard Design Value		0.009	0.008	0.009
PM_{10}				
Maximum Federal 24-Hour Concentration (μg/m³)	> 150 μg/m³	39	63	46
Annual Federal Arithmetic Mean (μg/m³)		19.4	17.9	19.2
Number of Days Exceeding Federal 24-Hour Standard	> 150 μg/m³	0	0	0
Number of Days Exceeding State 24-Hour Standard	> 50 μg/m³	0	2	0
$PM_{2.5}$				
Maximum Federal 24-Hour Concentration (μg/m³)	> 35 μg/m³	30.10	34.80	25.70
Annual Federal Arithmetic Mean (μg/m³)	> 12 μg/m³	11.17	10.06	11.66
Number of Days Exceeding Federal 24-Hour Standard	> 35 μg/m³	0	0	9

ppm = Parts Per Million
μg/m³ = Microgram per Cubic Meter
Source: Data for O_3, CO, NO_2, PM_{10}, and $PM_{2.5}$ was obtained from SCAQMD Air Quality Data Tables.

2 The federal standard is shown here because it is *more* stringent than the state standard, as shown on Table 2-2. State standard is 0.18, federal is 0.10

2.9 REGULATORY BACKGROUND

2.9.1 FEDERAL REGULATIONS

The EPA is responsible for setting and enforcing the NAAQS for O_3, CO, NO_X, SO_2, PM_{10}, and Pb (11). The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (12). The CAA also mandates that states submit and implement SIPs for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions) (13) (14). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 2-3 (previously presented) provides the NAAQS within the SCAB.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_X. NO_X is a collective term that includes all forms of NO_X which are emitted as byproducts of the combustion process.

2.9.2 CALIFORNIA REGULATIONS

CARB

CARB, which became part of the CalEPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. AB 2595 mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for SO_4, visibility, hydrogen sulfide (H_2S), and vinyl chloride (C_2H_3Cl). However, at this time, H_2S and C_2H_3Cl are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (15) (11).

Local air quality management districts, such as the SCAQMD, regulate air emissions from stationary sources such as commercial and industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare Air Quality Management Plans (AQMP) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g., motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a 5% or more annual reduction in emissions or 15% or more in a period of three years for ROGs, NO_X, CO and PM_{10}. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than 5% per year under certain circumstances.

TITLE 24 ENERGY EFFICIENCY STANDARDS AND CALIFORNIA GREEN BUILDING STANDARDS

California Code of Regulations (CCR) Title 24 Part 6: The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on August 1, 2009, and is administered by the California Building Standards Commission.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2022 California Green Building Code Standards that will be effective on January 1, 2023. The CEC anticipates that the 2022 energy code will provide $1.5 billion in consumer benefits and reduce GHG emissions by 10 million metric tons (16). The Project would be required to comply with the applicable standards in place at the time plan check submittals are made. These require, among other items (17):

NONRESIDENTIAL MANDATORY MEASURES

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- Designated parking for clean air vehicles. In new projects or additions to alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- EV charging stations. New construction shall facilitate the future installation of EV supply equipment. The compliance requires empty raceways for future conduit and documentation that the electrical system has adequate capacity for the future load. The number of spaces to be provided for is contained in Table 5.106. 5.3.3 (5.106.5.3). Additionally, Table 5.106.5.4.1 specifies requirements for the installation of raceway conduit and panel power requirements for medium- and heavy-duty EV supply equipment for warehouses, grocery stores, and retail stores.
- Outdoor light pollution reduction. Outdoor lighting systems shall be designed to meet the backlight, uplight and glare ratings per Table 5.106.8 (5.106.8).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1. 5.405.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reuse or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive (5.410.1).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
    - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1)
    - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor- mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
    - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combine flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).

   - Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle (5.303.3.4.5).
- Outdoor potable water uses in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).
- Water meters. Separate submeters or metering devices shall be installed for new buildings or additions in excess of 50,000 sf or for excess consumption where any tenant within a new building or within an addition that is project to consume more than 1,000 gallons per day (GPD) (5.303.1.1 and 5.303.1.2).
- Outdoor water uses in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements (5.410.2).

ADVANCED CLEAN TRUCKS RULE

On March 15, 2021 the Advanced Clean Trucks rule (13 CCR 1963) became effective. The purpose of this regulation is to accelerate California's transition to zero-emission medium- and heavy-duty vehicles. Under the rule, truck manufacturers are required to sell zero-emission trucks as an increasing percentage of their annual sales in California, beginning in 2024 and continuing through 2035.

APPLICABLE SCAQMD RULES

SCAQMD RULE 403

This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent and reduce fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth moving and grading activities.

Dust Control, Operations. Any operation or activity that might cause the emission of any smoke, fly ash, dust, fumes, vapors, gases, or other forms of air pollution, which can cause damage to human health, vegetation, or other forms of property, or can cause excessive soiling on any other parcel, shall conform to the requirements of the South Coast Air Quality Management District.

SCAQMD RULE 1113

This rule serves to limit the VOC content of architectural coatings used on projects in the SCAQMD. This rule applies to any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects.

SCAQMD RULE 2305

On May 8, 2021, South Coast AQMD adopted Warehouse Indirect Source Rule 2305, which includes the Warehouse Actions and Investments to Reduce Emissions Program (WAIRE), and Rule 316. Rule 2305 establishes for the first time a regulatory program designed to reduce air pollution (and indirect GHG emissions) from trucks that visit warehouses. Rule 316 establishes a fee system to support the Rule 2305 program on an ongoing basis. Rules 2305 and 316 apply to operators of existing and new warehouses with floor space greater than or equal to 100,000 square feet within a single building (i.e., large warehouses). Rules 2305 and 316 require such operators to annually take actions with respect to their warehouses that either reduce emissions regionally and locally or facilitate emission reductions. Specifically, operators must “earn” a specific number of WAIRE Points. Warehouse owners are only required to submit a Warehouse Operations Notification to the SCAQMD.

The number of WAIRE Points required for a specific operator is based on the intensity of operations (i.e., number of truck trips and type of trucks) at each of their warehouses every year. The required points are known as the WAIRE Points Compliance Obligation (WPCO). The WPCO is calculated based on a 12-month survey of truck trips entering or exiting the site, the truck data is weighted based on the types of trucks, and activity is projected for the next year. Thus, the WAIRE Points pay for the prior year’s emissions based on points earned in subsequent years.

WAIRE Points are earned by implementing a menu of items including purchasing/renting/leasing near-zero (NZE) and zero emission (ZE) yard equipment, installing on-site ZE fueling stations, and proving on-site solar PV systems that are intended to offset or reduce warehouse emissions. Operators may also implement custom WAIRE plans for individual facilities, subject to South Coast AQMD approval; or pay mitigation fees to have the SCAQMD implement measures within the SCAB. Operators that over-comply may transfer excess WAIRE Points earned in one year to a subsequent year or may transfer WAIRE points to another site within their control. WAIRE Points cannot be transferred to other operators and expire after 3 years. Rule 2305 also requires reporting information about facility operations and recordkeeping. Rule 316 is the companion rule to Rule 2305 and establishes the administrative fees that Rule 2305 warehouse owners and operators must pay to support South Coast AQMD compliance activities.

While the Project proponent may be defined as a warehouse owner and would submit a Warehouse Operation Notice(s), as required, the Project proponent does not intend to be the warehouse operator and has no knowledge of the future operations. Thus, the specific information required by Rule 2305 for calculating the WPCO is unavailable, and the necessary number of points is unknown. Finally, The WAIRE points expire after 3 years and are based on actions of future operators and are thus temporary and cannot be relied upon for CEQA purposes.

Therefore, even though the WAIRE program will reduce emissions warehouse activities in the region, no emission reductions from the WAIRE Program are accounted for in this analysis.

2.9.3 City of Beaumont General Plan Policies

The City of Beaumont identifies the following policies related to air quality:

Policy 3.10.1

Participate in air quality planning efforts with local, regional, and State agencies that improve local air quality to protect human health and minimize the disproportionate impacts on sensitive population groups.

Policy 3.10.2

Reduce particulate emissions from paved and unpaved roads, construction activities, and agricultural operations.

Policy 3.10.3

Discourage development of sensitive land uses – defined as schools, hospitals, residences, and elder and childcare facilities – near air pollution sources that pose health risks – including freeways and polluting industrial sites.

Policy 3.10.4

Designate truck routes to avoid sensitive land uses, where feasible.

Policy 3.10.6

Provide educational information about air quality issues and their health effects, including best practices for reducing and/or eliminating sources of indoor air pollution.

2.9.4 AQMP

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMP to meet the state and federal ambient air quality standards (18). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. The most recent update was approved in 2016. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.8.

2.10 Regional Air Quality Improvement

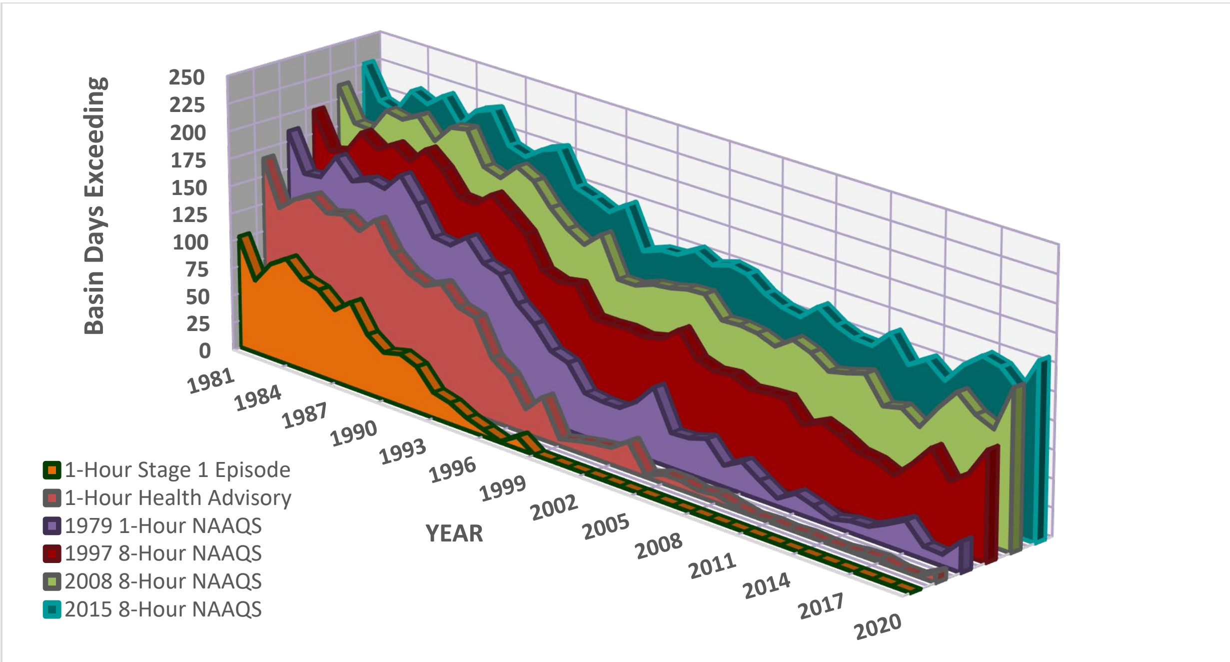
The Project is within the jurisdiction of the SCAQMD. In 1976, California adopted the Lewis Air Quality Management Act which created SCAQMD from a voluntary association of air pollution control districts in Los Angeles, Orange, Riverside, and San Bernardino counties. The geographic area of which SCAQMD consists of is known as the SCAB. SCAQMD develops comprehensive plans and regulatory programs for the region to attain federal standards by dates specified in federal law. The agency is also responsible for meeting state standards by the earliest date achievable, using reasonably available control measures.

SCAQMD rule development through the 1970s and 1980s resulted in dramatic improvement in SCAB air quality. Nearly all control programs developed through the early 1990s relied on (in) the development and application of cleaner technology; (ii) add-on emission controls, and (iii) uniform CEQA review throughout the SCAB. Industrial emission sources have been significantly reduced by this approach and vehicular emissions have been reduced by technologies implemented at the state level by CARB.

As discussed above, the SCAQMD is the lead agency charged with regulating air quality emission reductions for the entire SCAB. SCAQMD created AQMPs which represent a regional blueprint for achieving healthful air on behalf of the 16 million residents of the SCAB. The 2012 AQMP states, “the remarkable historical improvement in air quality since the 1970’s is the direct result of Southern California’s comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs,” (19).

Emissions of O_3, NO_X, VOC, and CO have been decreasing in the SCAB since 1975 and are projected to continue to decrease through 2020 (20). These decreases result primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled (VMT) in the SCAB continue to increase, NO_X and VOC levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_X emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. O_3 contour maps show that the number of days exceeding the 8-hour NAAQS has generally decreased between 1980 and 2020. For 2020, there was an overall decrease in exceedance days compared with the 1980 period. However, as shown on Table 2-5, O_3 levels have increased in the past three years due to higher temperatures and stagnant weather conditions. Notwithstanding, O_3 levels in the SCAB have decreased substantially over the last 30 years with the current maximum measured concentrations being approximately one-third of concentrations within the late 70’s (21).

TABLE 2-5: SCAB O_3 TREND

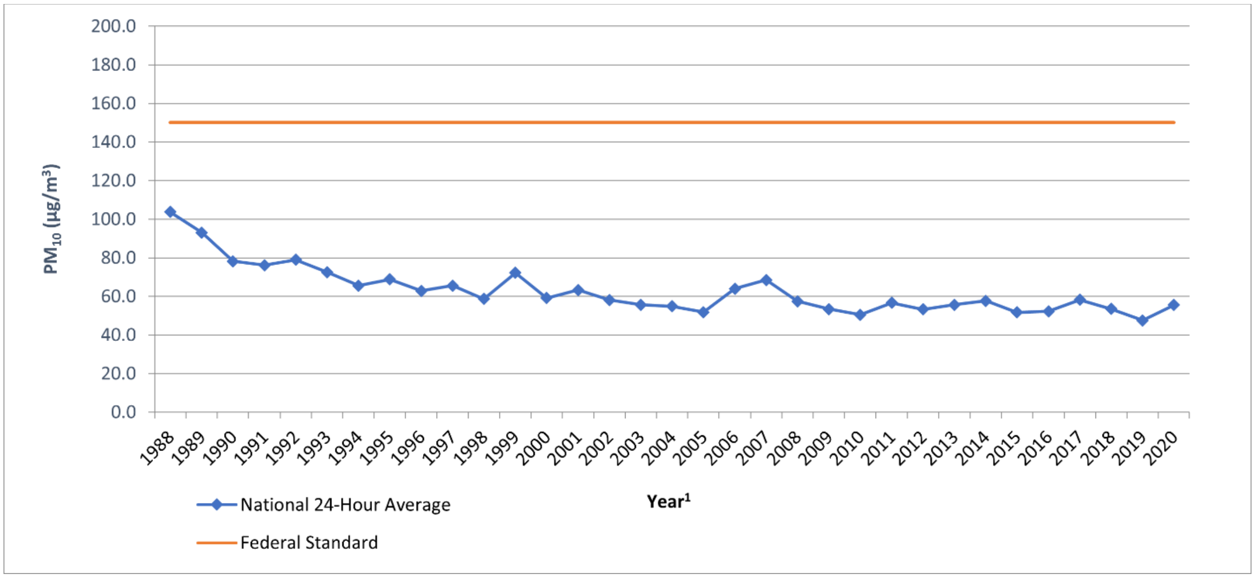


Source: 2020 SCAQMD, Historical O_3 Air Quality Trends (1976-2020)

The overall trends of PM_{10} and $PM_{2.5}$ levels in the air (not emissions) show an overall improvement since 1975. Direct emissions of PM_{10} have remained somewhat constant in the SCAB and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. Area wide sources (fugitive dust from roads, dust from construction, and other sources) contribute the greatest amount of direct particulate matter emissions.

As with other pollutants, the most recent PM_{10} statistics show an overall improvement as illustrated in Tables 2-6 and 2-7. During the period for which data are available, the 24-hour national annual average concentration for PM_{10} decreased by approximately 46%, from 103.7 microgram per cubic meter (μg/m³) in 1988 to 55.5 μg/m³ in 2020 (22). Although the values are below the federal standard, it should be noted that there are days within the year where the concentrations would exceed the threshold. The 24-hour state annual average for emissions for PM_{10}, have decreased by approximately 64%, from 93.9 μg/m³ in 1989 to 33.9 μg/m³ in 2020 (22). Although data in the late 1990's show some variability, this is probably due to the advances in meteorological science rather than a change in emissions. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM_{10} standards has also shown an overall drop.

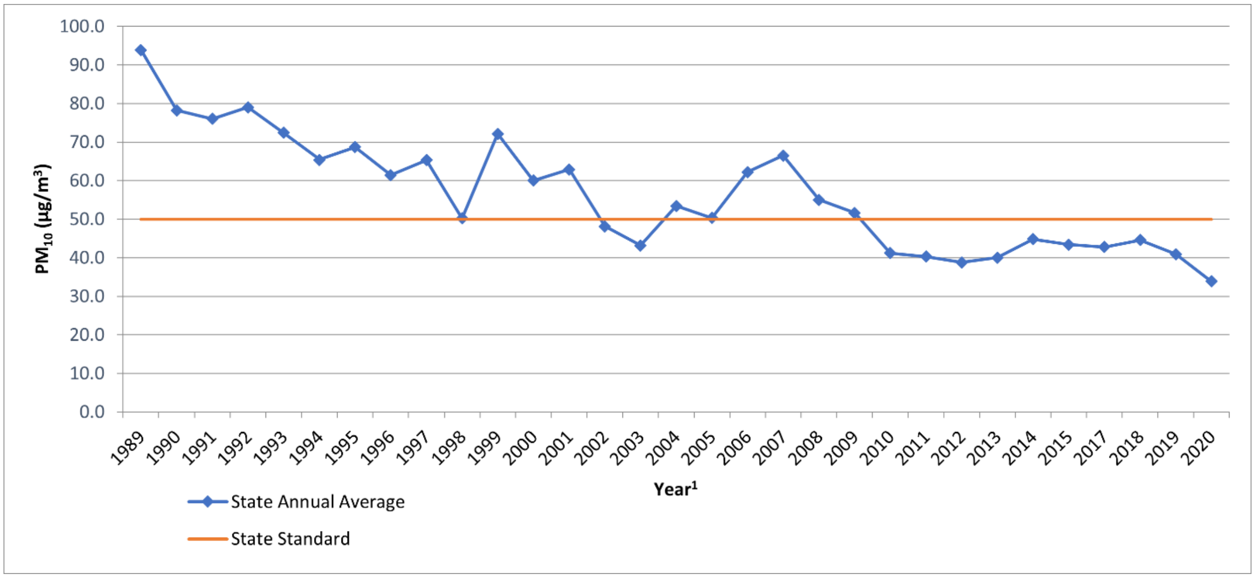
TABLE 2-6: SCAB AVERAGE 24-HOUR CONCENTRATION PM_{10} TREND (BASED ON FEDERAL STANDARD)[1]



Source: 2020 CARB, iADAM: Top Four Summary: PM_{10} 24-Hour Averages (1988-2020)

[1] Some years have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

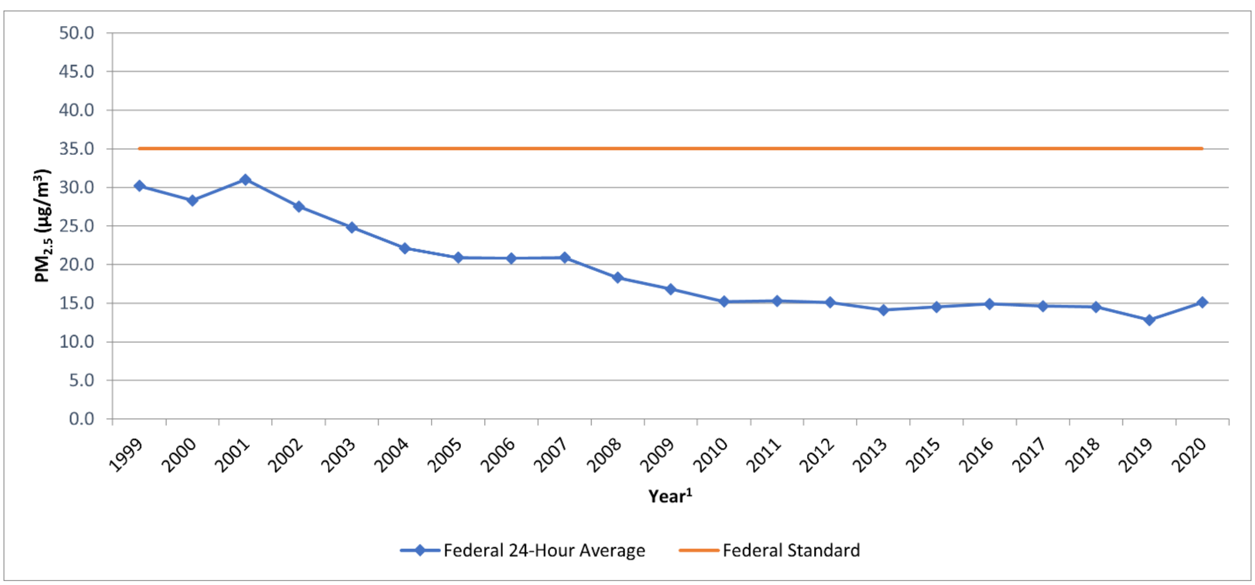
TABLE 2-7: SCAB ANNUAL AVERAGE CONCENTRATION PM_{10} TREND (BASED ON STATE STANDARD)[1]



Source: 2020 CARB, iADAM: Top Four Summary: PM_{10} 24-Hour Averages (1988-2020)
[1] Some years have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

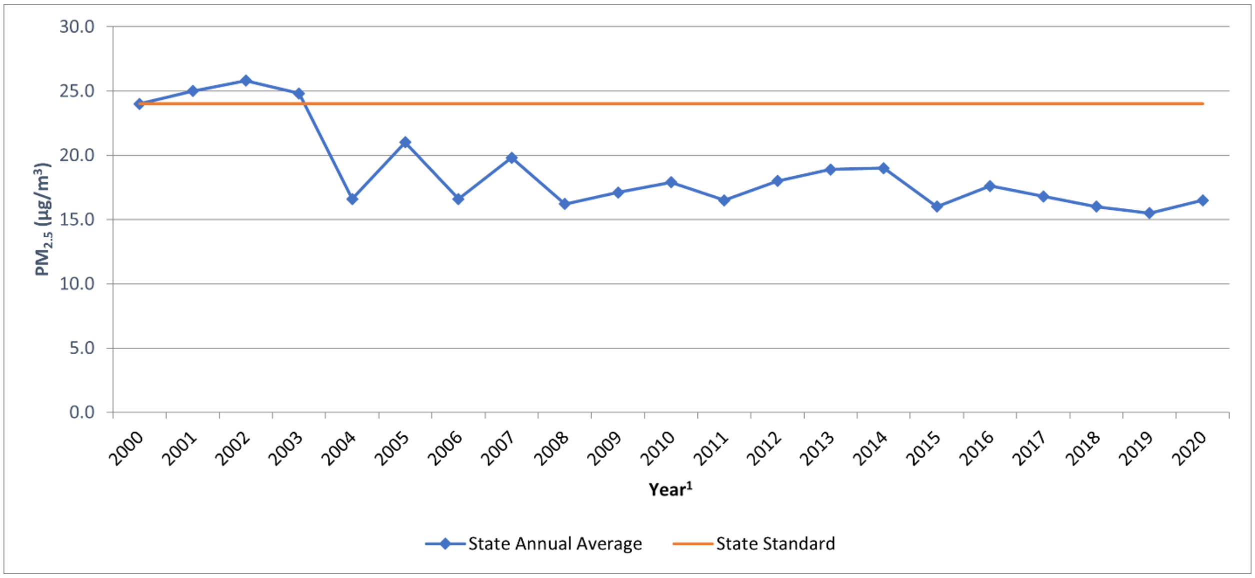
Tables 2-8 and 2-9 shows the most recent 24-hour average $PM_{2.5}$ concentrations in the SCAB from 1999 through 2020. Overall, the national and state annual average concentrations have decreased by almost 50% and 31% respectively (22). It should be noted that the SCAB is currently designated as nonattainment for the state and federal $PM_{2.5}$ standards.

TABLE 2-8: SCAB 24-HOUR AVERAGE CONCENTRATION $PM_{2.5}$ TREND (BASED ON FEDERAL STANDARD)[1]



Source: 2020 CARB, iADAM: Top Four Summary: $PM_{2.5}$ 24-Hour Averages (1999-2020)
[1] Some years have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

TABLE 2-9: SCAB ANNUAL AVERAGE CONCENTRATION $PM_{2.5}$ TREND (BASED ON STATE STANDARD)[1]



Source: 2020 CARB, iADAM: Top Four Summary: $PM_{2.5}$ 24-Hour Averages (1999-2020)
[1] Some years have been omitted from the table as insufficient data (or no) data has been reported. Years with reported value of "0" have also been omitted.

While the 2012 AQMP PM_{10} attainment demonstration and the 2015 associated supplemental SIP submission indicated that attainment of the 24-hour standard was predicted to occur by the end of 2015, it could not anticipate the effect of the ongoing drought on the measured $PM_{2.5}$.

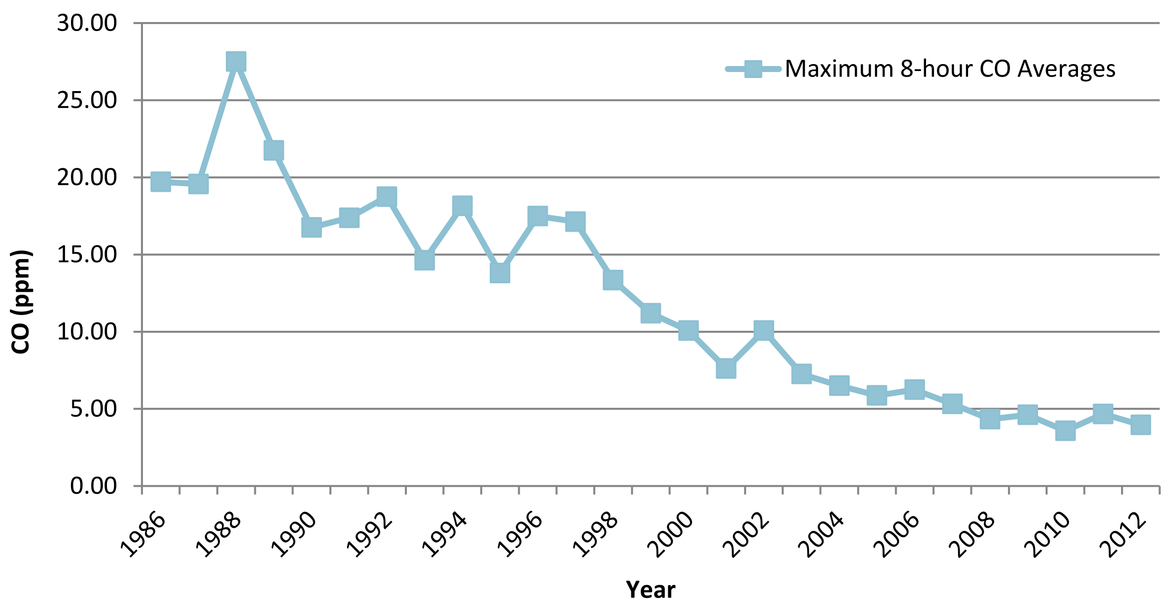
The 2006 to 2010 base period used for the 2012 attainment demonstration had near-normal rainfall. While the trend of $PM_{2.5}$-equivalent emission reductions continued through 2015, the severe drought conditions contributed to the $PM_{2.5}$ increases observed after 2012. As a result of the disrupted progress toward attainment of the federal 24-hour $PM_{2.5}$ standard, SCAQMD submitted a request and the EPA approved, in January 2016, a "bump up" to the nonattainment classification from "moderate" to "serious," with a new attainment deadline as soon as practicable, but not beyond December 31, 2019. As of March 14, 2019, the EPA approved portions of a SIP revision submitted by California to address CAA requirements for the 2006 24-hour $PM_{2.5}$ NAAQS in the Los Angeles-SCAB Serious $PM_{2.5}$ nonattainment area. The EPA also approved 2017 and 2019 motor vehicle emissions budgets for transportation conformity purposes and inter-pollutant trading ratios for use in transportation conformity analyses (23).

In March 2017, the SCAQMD released the Final 2016 AQMP. The 2016 AQMP continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (24). Similar to the 2012 AQMP, the 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS) and updated emission inventory methodologies for various source categories (18).

The 2022 AQMP is currently being developed by SCAQMD to address the EPA's strengthened ozone standard. Development of the 2022 AQMP is in its initial stages and no formal timeline for completion and adoption is currently known.

The most recent CO concentrations in the SCAB are shown in Table 2-10 (22). CO concentrations in the SCAB have decreased markedly — a total decrease of more about 80% in the peak 8-hour concentration from 1986 to 2012. It should be noted 2012 is the most recent year where 8-hour CO averages and related statistics are available in the SCAB. The number of exceedance days has also declined. The entire SCAB is now designated as attainment for both the state and national CO standards. Ongoing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations.

TABLE 2-10: SCAB 8-HOUR AVERAGE CONCENTRATION CO TREND[1]

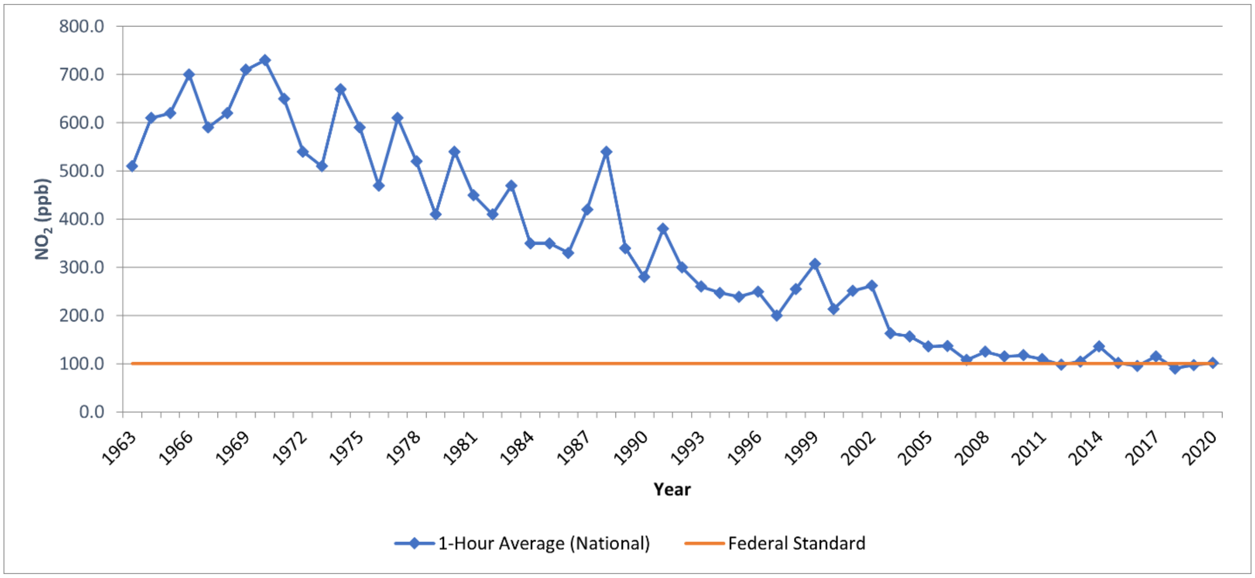


Source: 2020 CARB, iADAM: Top Four Summary: CO 8-Hour Averages (1986-2012)
[1] The most recent year where 8-hour concentration data is available is 2012.

Part of the control process of the SCAQMD's duty to greatly improve the air quality in the SCAB is the uniform CEQA review procedures required by SCAQMD's *CEQA Air Quality Handbook (1993)* (*1993 CEQA Handbook*) (25). The single threshold of significance used to assess Project direct and cumulative impacts has in fact "worked" as evidenced by the track record of the air quality in the SCAB dramatically improving over the course of the past decades. As stated by the SCAQMD, the District's thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for this Project.

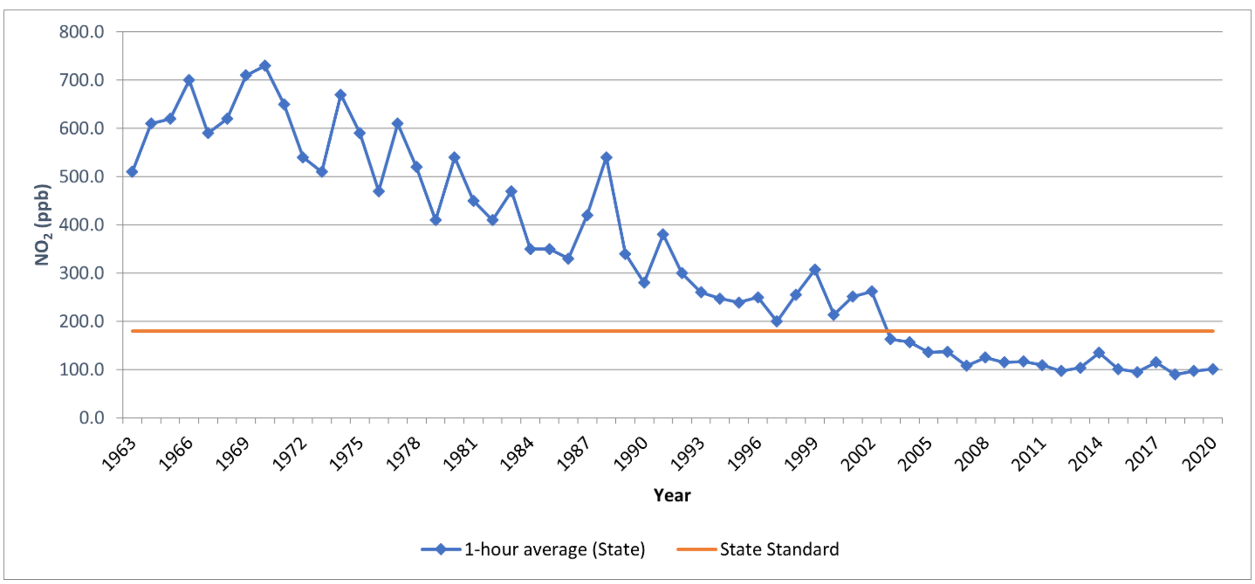
The most recent NO_2 data for the SCAB is shown in Tables 2-11 and 2-12 (22). Over the last 50 years, NO_2 values have decreased significantly; the peak 1-hour national and state averages for 2020 is approximately 80% lower than what it was during 1963. The SCAB attained the State 1-hour NO_2 standard in 1994, bringing the entire state into attainment. A new state annual average standard of 0.030 ppm was adopted by CARB in February 2007 (26). The new standard is just barely exceeded in the SCAQMD. NO_2 is formed from NO_X emissions, which also contribute to O_3. As a result, the majority of the future emission control measures would be implemented as part of the overall O_3 control strategy. Many of these control measures would target mobile sources, which account for more than three-quarters of California's NO_X emissions. These measures are expected to bring the SCAQMD into attainment of the state annual average standard.

TABLE 2-11: SCAB 1-HOUR AVERAGE CONCENTRATION NO_2 TREND (BASED ON FEDERAL STANDARD)



Source: 2020 CARB, iADAM: Top Four Summary: CO 1-Hour Averages (1963-2020)

TABLE 2-12: SCAB 1-HOUR AVERAGE CONCENTRATION NO_2 TREND (BASED ON STATE STANDARD)



Source: 2020 CARB, iADAM: Top Four Summary: CO 1-Hour Averages (1963-2020)

2.9.1 TOXIC AIR CONTAMINANTS (TAC) TRENDS

In 1984, as a result of public concern for exposure to airborne carcinogens, CARB adopted regulations to reduce the amount of TAC emissions resulting from mobile and area sources, such as cars, trucks, stationary sources, and consumer products. According to the *Ambient and Emission Trends of Toxic Air Contaminants in California* journal article (27) which was prepared for CARB, results show that between 1990-2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly (between 1990 and 2012). The seven TACs studied include those that are derived from mobile sources: diesel particulate matter (DPM), benzene (C_6H_6), and 1,3-butadiene (C_4H_6); those that are derived from stationary sources: perchloroethylene (C_2Cl_4) and hexavalent chromium (Cr(VI)); and those derived from photochemical reactions of emitted VOCs: formaldehyde (CH_2O) and acetaldehyde (C_2H_4O)[3]. The decline in ambient concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk.

MOBILE SOURCE TACS

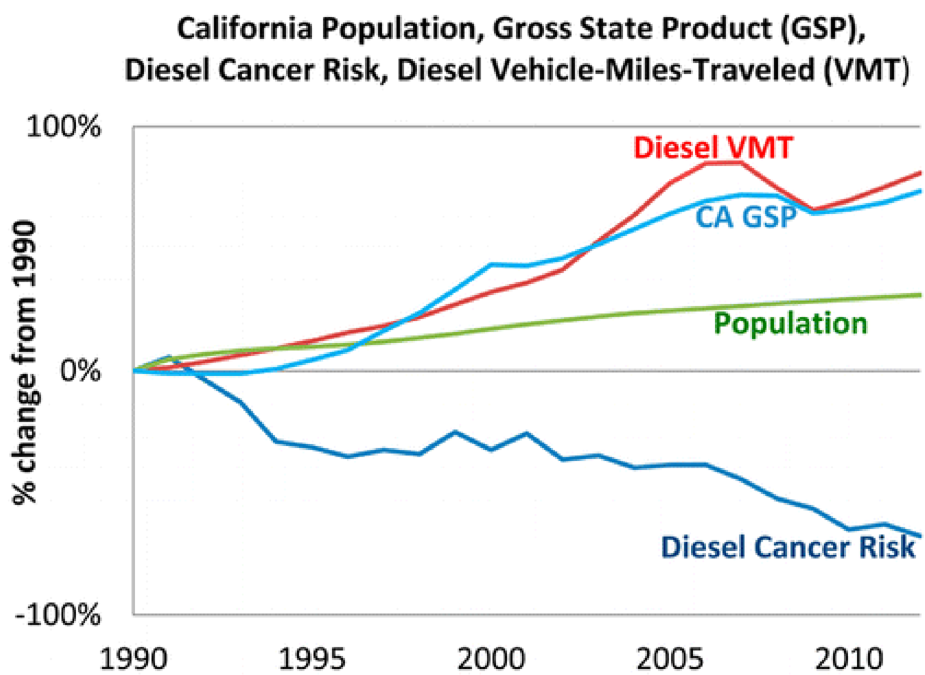
CARB introduced two programs that aimed at reducing mobile emissions for light and medium duty vehicles through vehicle emissions controls and cleaner fuel. In California, light-duty vehicles sold after 1996 are equipped with California's second-generation On-Board Diagnostic (OBD-II) system. The OBD-II system monitors virtually every component that can affect the emission performance of the vehicle to ensure that the vehicle remains as clean as possible over its entire life and assists repair technicians in diagnosing and fixing problems with the computerized engine controls. If a problem is detected, the OBD-II system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase "Check Engine" or "Service Engine Soon." The system would also store valuable information about the detected malfunction so that a repair technician can accurately find and fix the problem. CARB has recently developed similar OBD requirements for heavy-duty vehicles over 14,000 pounds (lbs). CARB's phase II Reformulated Gasoline Regulation (RFG-2), adopted in 1996, also led to a reduction of mobile source emissions. Through such regulations, benzene levels declined 88% from 1990-2012. 1,3-Butadiene concentrations also declined 85% from 1990-2012 as a result of the use of reformulated gasoline and motor vehicle regulations (27).

In 2000, CARB's Diesel Risk Reduction Plan (DRRP) recommended the replacement and retrofit of diesel-fueled engines and the use of ultra-low-sulfur (<15 ppm) diesel fuel. As a result of these measures, DPM concentrations have declined 68% since 2000, even though the state's population increased 31% and the amount of diesel vehicles miles traveled increased 81%, as shown on Exhibit 2-B. With the implementation of these diesel-related control regulations, CARB expects a DPM decline of 71% for 2000-2020.

[3] It should be noted that ambient DPM concentrations are not measured directly. Rather, a surrogate method using the coefficient of haze (COH) and elemental carbon (EC) is used to estimate DPM concentrations.

SCAQMD's Multiple Air Toxics Exposure Study (MATES) study, discussed later illustrates the cancer risk trends, which show an approximate 80% reduction in risk from 2000 to 2020, which correlates to the reductions in DPM anticipated by CARB.

EXHIBIT 2-A: DPM AND DIESEL VEHICLE MILES TREND



Source: 2020 CARB

DIESEL REGULATIONS

CARB and the Ports of Los Angeles and Long Beach (POLA and POLB) have adopted several iterations of regulations for diesel trucks that are aimed at reducing DPM. More specifically, CARB Drayage Truck Regulation (28), CARB statewide On-road Truck and Bus Regulation (29), and the Ports of Los Angeles and Long Beach Clean Truck Program (CTP) require accelerated implementation of "clean trucks" into the statewide truck fleet (30). In other words, older more polluting trucks would be replaced with newer, cleaner trucks as a function of these regulatory requirements.

Moreover, the average statewide DPM emissions for Heavy Duty Trucks (HDT), in terms of grams of DPM generated per mile traveled, would dramatically be reduced due to the aforementioned regulatory requirements.

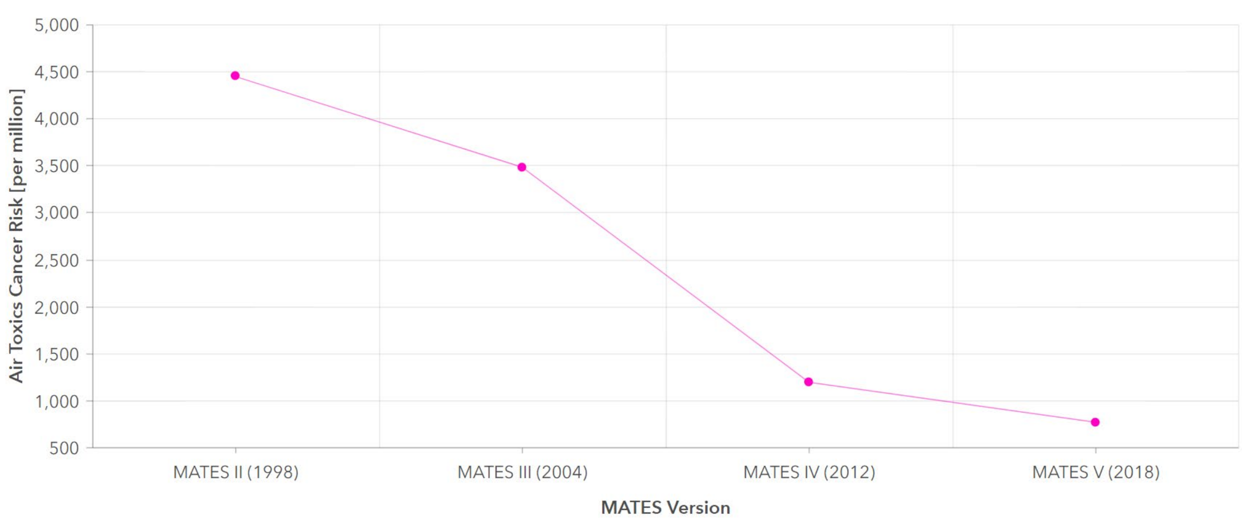
Diesel emissions identified in this analysis would therefore overstate future DPM emissions since not all the regulatory requirements are reflected in the modeling.

CANCER RISK TRENDS

Based on information available from CARB, overall cancer risk throughout the SCAB has had a declining trend since 1990. In 1998, following an exhaustive 10-year scientific assessment process, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The SCAQMD initiated a comprehensive urban toxic air pollution study called the MATES. DPM accounts for more than 70% of the cancer risk.

In January 2018, as part of the overall effort to reduce air toxics exposure in the SCAB, SCAQMD began conducting the MATES V Program. MATES V field measurements were conducted at ten fixed sites (the same sites selected for MATES III and IV) to assess trends in air toxics levels. MATES V also included measurements of ultrafine particles (UFP) and black carbon (BC) concentrations, which can be compared to the UFP levels measured in MATES IV (31). The draft report for the MATES V study was published in late May and the comment submission deadline on June 7, 2021. In addition to new measurements and updated modeling results, several key updates were implemented in MATES V. First, MATES V estimates cancer risks by taking into account multiple exposure pathways, which includes inhalation and non-inhalation pathways. This approach is consistent with how cancer risks are estimated in South Coast AQMD's programs such as permitting, Air Toxics Hot Spots (AB2588), and CEQA. Previous MATES studies quantified the cancer risks based on the inhalation pathway only. Second, along with cancer risk estimates, MATES V includes information on the chronic non-cancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic non-cancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazard Assessment (OEHHA) and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time (32). Exhibit 2-B illustrates the MATES V Risk trends for the nearest available monitoring site to the project, located in Rubidoux.

EXHIBIT 2-B: MATES V RISK MAP



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3 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

Based on Appendix G of the CEQA Guidelines, this study quantifies air quality emissions generated by construction and operation of the Project and addresses whether the Project conflicts with implementation of the SCAQMD's AQMP and Lead Agency planning regulations. The analysis of Project-generated air emissions determines whether the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is in non-attainment under an applicable NAAQS and CAAQS. Additionally, the Project has been evaluated to determine whether the Project would expose sensitive receptors to substantial pollutant concentrations and the impacts of odors. The significance of these potential impacts is described in the following sections.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from Appendix G of the *CEQA Guidelines* (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (33):

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The SCAQMD has developed regional significance thresholds for regulated pollutants, as summarized at Table 3-1 (34).

TABLE 3-1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS

Pollutant	Regional Construction Threshold	Regional Operational Thresholds
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Pb	3 lbs/day	3 lbs/day

lbs/day = Pounds Per Day

The SCAQMD's *CEQA Air Quality Significance Thresholds* (April 2019) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact. These thresholds have been used to determine air quality impacts in this analysis.

3.3 MODEL EMPLOYED TO ANALYZE AIR QUALITY

Land uses such as the Project affect air quality through construction-source and operational-source emissions.

In May 2022 the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of CalEEMod version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (35). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendices 3.1 through 3.2.

In May 2022, the EPA approved the 2021 version of the EMissions FACtor model (EMFAC 2021) web database for use in SIP and transportation conformity analyses. EMFAC 2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, VMT from motor vehicles that operate on highways, freeways, and local roads in California and is used by the CARB. EMFAC 2021 is incorporated into CalEEMod 2022.1 and thus included in the modeling that is provided in the analysis.

3.4 CONSTRUCTION EMISSIONS

3.4.1 CONSTRUCTION ACTIVITIES

Construction activities associated with the Project will result in emissions of VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$. Construction related emissions are expected from the following construction activities:

- Demolition/Crushing
- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

DEMOLITION ACTIVITIES

The site is currently developed with 12,150 sf of existing building, a 5,173-sf steel warehouse building, and existing asphalt/concrete which will be demolished. Demolition of the existing structures would generate approximately 796.86 total tons of material that would be demolished and hauled off-site. This analysis conservatively assumes that up demolition of asphalt/concrete would generate up to 137,367.43 tons of debris which will be crushed and re-used on site eliminating the need for demolished concrete/asphalt debris to be hauled off-site.

CRUSHING ACTIVITIES

The Project activities would include on-site crushing of concrete and asphalt pulverizing during demolition activity. Fugitive dust emissions would also be generated through the crushing debris on-site. The Environmental Protection Agency's (EPA) AP-42 compilation of emission factors available in Chapter 11.19.2-2 were used to estimate fugitive dust from crushing activities. As noted above, it is estimated that approximately 4,587.91 tons/day of debris would be crushed. It is estimated that crushing activities would result in 2.47 lbs/day of PM_{10} emissions and 0.46 lbs/day of $PM_{2.5}$ emissions. Additional details on the emissions calculation associated with crushing are provided in Appendix 3.4.

SITE PREPARATION AND GRADING ACTIVITIES

Dust is typically a major concern during grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). CalEEMod was utilized to calculate fugitive dust emissions resulting from this phase of activity. Earthwork activities are expected to balance on-site. As such, no import or export of soils would be required.

During site preparation and grading activities, a maximum of 5 acres per day can be actively disturbed during construction of the site. In CalEEMod, the Total Acres Graded (TAG) field represents the cumulative distance traversed on the property by the grading equipment. In order to properly grade a piece of land, multiple passes with grading equipment may be required. So even though the lot size is a fixed number of acres, the TAG could be an order of magnitude higher than the footprint of the lot (36). Total Acres Graded (TAG) is a function of the maximum acreage disturbed per day times the number of days of the subphase of construction. As such, the TAG field in CalEEMod has been revised to 150 acres (5 acres per day x 30 days) for site preparation activities, and 300 acres (5 acres per day x 60 days) for grading activities.[4]

3.4.1 CONSTRUCTION DURATION

Construction is expected to commence in June 2023 and will last through October 2024. The construction schedule utilized in the analysis, shown in Table 3-2, represents a "worst-case" analysis scenario should construction occur any time after the respective dates since emission

[4] CalEEMod does not provide a "Total Acres Graded" field for Demolition, Building Construction, Paving, or Architectural Coating activities.

factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent[5]. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (33).

TABLE 3-2: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Demolition/Crushing	06/01/2023	07/12/2023	30
Site Preparation	07/13/2023	08/23/2023	30
Grading	08/24/2023	11/15/2023	60
Building Construction	11/16/2023	07/24/2024	180
Paving	07/25/2024	10/16/2024	60
Architectural Coating	07/25/2024	10/16/2024	60

3.4.2 CONSTRUCTION EQUIPMENT

A summary of construction equipment by phase is provided at Table 3-3. Consistent with industry standards and typical construction practices, each piece of equipment listed in Table 3-3 are assumed to operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the code.

TABLE 3-3: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment[1]	Amount	Hours Per Day
Demolition/Crushing	Concrete/Industrial Saws	1	8
	Excavators	3	8
	Rubber Tired Dozers	2	8
Site Preparation	Crawler Tractors	3	8
	Rubber Tired Dozers	3	8
Grading	Crawler Tractors	2	8
	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
Building Construction	Cranes	2	8
	Forklifts	4	8

[5] As shown in the CalEEMod User's Guide Version 2020.4.0, Section 4.3 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

Construction Activity	Equipment[1]	Amount	Hours Per Day
	Generator Sets	2	8
	Tractors/Loaders/Backhoes	3	8
	Welders	2	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

[1] In order to account for fugitive dust emissions, Crawler Tractors were used in lieu of Tractors/Loaders/Backhoes.

3.4.3 CONSTRUCTION EMISSIONS SUMMARY

IMPACTS WITHOUT MITIGATION

The estimated maximum daily construction emissions without mitigation are summarized on Table 3-4 and include application of regulatory controls such as Rule 403 and Rule 1113 which are built into the model runs. As indicated in the Table, only VOCs are anticipated to exceed SCAQMD regional thresholds with respect to construction. Detailed construction model outputs are presented in Appendix 3.1. Under the assumed scenarios, emissions resulting from the Project construction will exceed thresholds established by the SCAQMD for emissions of VOCs during construction activity.

TABLE 3-4: OVERALL CONSTRUCTION EMISSIONS SUMMARY – WITHOUT MITIGATION

Year	Emissions (lbs/day) [1]					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2023	4.63	44.30	36.90	0.07	65.20	10.80
2024	101.00	21.90	42.50	0.05	4.56	1.66
Winter						
2023	4.31	41.60	38.90	0.07	5.01	2.88
2024	101.00	22.20	37.30	0.05	4.56	1.66
Maximum Daily Emissions	**101.00**	**44.30**	**42.50**	**0.07**	**65.20**	**10.80**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**YES**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: CalEEMod construction-source (unmitigated) emissions are presented in Appendix 3.1
[1] 2023 Emissions include dust (PM_{10} and $PM_{2.5}$) from crushing activities

RECOMMENDED CONSTRUCTION MITIGATION MEASURES

The Project construction-source emissions have the potential to exceed SCAQMD regional thresholds for volatile organic compound (VOC) emissions prior to mitigation. MM AQ-1 is designed to reduce Project construction-source VOCs. After application of MM AQ-1, Project construction-source emissions will not exceed SCAQMD regional thresholds for VOC emissions. Thus, the Project would result in a less than significant impact associated with construction activities.

MM AQ-1

The Project shall utilize "Low-VOC" paints for nonresidential interior and exterior surfaces. Low-VOC paints shall be no more than 50 grams per liter (g/L) of VOC. Alternatively, the Applicant may utilize tilt-up concrete buildings that do not require the use of architectural coatings.

IMPACTS WITH MITIGATION

As indicated above, without mitigation, only VOCs are anticipated to exceed SCAQMD regional thresholds. The estimated maximum daily construction emissions with mitigation are summarized on Table 3-5. MM AQ-1 is recommended to reduce the severity of these impacts. Detailed construction model outputs are presented in Appendix 3.2. With implementation of MM AQ-1 Project construction-source emissions of VOCs would be reduced to less than significant levels. As such, after implementation of MM AQ-1, Project construction-source emissions are considered less than significant.

TABLE 3-5: OVERALL CONSTRUCTION EMISSIONS SUMMARY – WITH MITIGATION

Year	Emissions (lbs/day) [1]					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summer						
2023	4.63	44.30	36.90	0.07	65.20	10.80
2024	52.80	21.90	42.50	0.05	4.56	1.66
Winter						
2023	4.31	41.60	38.90	0.07	5.01	2.88
2024	52.80	22.20	37.30	0.05	4.56	1.66
Maximum Daily Emissions	**52.80**	**44.30**	**42.50**	**0.07**	**65.20**	**10.80**
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: CalEEMod construction-source (mitigated) emissions are presented in Appendix 3.2

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the Project will result in emissions of VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$. Operational emissions are expected from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions
- On-Site Cargo Handling Equipment Emissions
- Transportation Refrigeration Units (TRU) Emissions

3.5.1 AREA SOURCE EMISSIONS

ARCHITECTURAL COATINGS

Over a period of time the buildings that are part of this Project will require maintenance and will therefore produce emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings. The emissions associated with architectural coatings were calculated using CalEEMod. Detailed information regarding how emissions generated from architectural coating can be found in *Appendix A: Calculation Details for CalEEMod* (37). Emissions associated with architectural coatings are summarized under the area source emissions totals presented on Table 3-8, below. Additional details are provided in the CalEEMod outputs which can be found in Appendix 3.2.

CONSUMER PRODUCTS

Consumer products include, but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with use of consumer products were calculated based on defaults provided within CalEEMod. Detailed information regarding how emissions generated from consumer products can be found in *Appendix A: Calculation Details for CalEEMod* (37). Emissions associated with consumer products are summarized under the area source emissions totals presented on Table 3-8, below. Additional details are provided in the CalEEMod outputs which can be found in Appendix 3.2.

LANDSCAPE MAINTENANCE EQUIPMENT

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. It should be noted that as October 9, 2021, Governor Gavin Newsom signed AB 1346. The bill aims to ban the sale of new gasoline-powered equipment under 25 gross horsepower (known as small off-road engines [SOREs]) by 2024. For purposes of analysis, the emissions associated with landscape maintenance equipment were calculated based on assumptions provided in CalEEMod. Detailed information regarding how emissions generated from landscape maintenance equipment can be found in *Appendix A: Calculation Details for CalEEMod* (37). Emissions associated with landscape maintenance equipment are summarized under the area source emissions totals presented on Table 3-8, below. Additional details are provided in the CalEEMod outputs which can be found in Appendix 3.2.

3.5.2 ENERGY SOURCE EMISSIONS

COMBUSTION EMISSIONS ASSOCIATED WITH NATURAL GAS AND ELECTRICITY

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the Project area are located either outside the region (state) or offset through the use of pollution credits (RECLAIM) for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity are generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using CalEEMod. Detailed information regarding how combustion emissions associated with natural gas and electricity can be found in *Appendix A: Calculation Details for CalEEMod* (37). Emissions associated with energy source emissions are summarized under the energy source emissions totals presented on Table 3-10, below. Additional details are provided in the CalEEMod outputs which can be found in Appendix 3.2.

3.5.3 MOBILE SOURCE EMISSIONS

The Project related air quality emissions derive primarily from vehicle trips associated with the Project, including employee trips, truck trips, and commercial trips to and from the site associated with the proposed uses.

PASSENGER VEHICLE TRIP LENGTH AND FLEET MIX

In order to determine emissions from passenger car vehicles, CalEEMod defaults for trip length and trip purpose were utilized. Default vehicle trip lengths for primary trips will be populated using data from the local metropolitan planning organizations/Regional Transportation Planning Agencies (MPO/RTPA). Trip type percentages and trip lengths provided by MPO/RTPAs truncate data at their demonstrative borders. This analysis assumes that passenger cars include Light-Duty-Auto vehicles (LDA), Light-Duty-Trucks (LDT1[6] & LDT2[7]), Medium-Duty-Vehicles (MDV), and Motorcycles (MCY) vehicle types. In order to account for emissions generated by passenger cars, the fleet mix in Table 3-6 was utilized, the CalEEMod calculated passenger car trip length is 21.16 miles.

TABLE 3-6: PASSENGER CAR FLEET MIX

Land Use	% Vehicle Type				
	LDA	LDT1	LDT2	MDV	MCY
High-Cube Cold Storage	54.02	4.38	21.48	17.54	2.58
High-Cube Fulfillment Center					

Note: The Project-specific passenger car fleet mix used in this analysis is based on a proportional split utilizing the default CalEEMod percentages assigned to LDA, LDT1, LDT2, MDV, and MCY vehicle types.

[6] Vehicles under the LDT1 category have a gross vehicle weight rating (GVWR) of less than 6,000 lbs. and equivalent test weight (ETW) of less than or equal to 3,750 lbs.

[7] Vehicles under the LDT2 category have a GVWR of less than 6,000 lbs. and ETW between 3,751 lbs. and 5,750 lbs.

TRUCK TRIP LENGTH AND FLEET MIX

To determine emissions from trucks for the proposed industrial uses, the analysis incorporated the SCAQMD recommended truck trip length of 15.3 miles for 2-axle (LHDT1, LHDT2), 14.2 miles for 3-axle (MHDT) trucks, and 40 miles for 4+-axle (HHDT) trucks and weighting the average trip lengths using traffic trip percentages. As such, an overall truck trip length of 33.39 miles was utilized, as well as an assumption of 100% primary trips for the proposed industrial land uses. Trucks are broken down by truck type. The truck fleet mix is estimated by rationing the trip rates for each truck type based on information provided by the SCAQMD recommended truck mix, by axle type. Heavy trucks are broken down by truck type (or axle type) and are categorized as either Light-Heavy-Duty Trucks (LHDT1[8] & LHDT2 [9])/2-axle, Medium-Heavy-Duty Trucks (MHDT)/3-axle, and Heavy-Heavy-Duty Trucks (HHDT)/4+-axle. To account for emissions generated by trucks, the fleet mix in Table 3-7 was utilized.

TABLE 3-7: TRUCK FLEET MIX

Land Use	% Vehicle Type			
	LHDT1	LHDT2	MHDT	HHDT
High-Cube Cold Storage	25.99	7.34	12.50	54.17
High-Cube Fulfillment Center	8.36	2.36	10.71	78.57

Note: Project-specific truck fleet mix is based on the number of trips generated by each truck type (LHDT1, LHDT2, MHDT, and HHDT) relative to the total number of truck trips.

FUGITIVE DUST RELATED TO VEHICULAR TRAVEL

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust inclusive of break and tire wear particulates. The emissions estimate for travel on paved roads were calculated using CalEEMod.

3.5.4 ON-SITE CARGO HANDLING EQUIPMENT EMISSIONS

It is common for warehouse buildings to require the operation of exterior cargo handling equipment in the building's truck court areas. For this particular Project, on-site modeled operational equipment includes up to two (2) 200 horsepower (hp), compressed natural gas or gasoline-powered tractors/loaders/backhoes operating at 4 hours a day[10] for 365 days of the year.

3.5.5 TRU EMISSIONS

In order to account for the possibility of refrigerated uses, trucks associated with the cold-storage land use are assumed to also have TRUs. Therefore, for modeling purposes 24 trucks (48 truck

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[8] Vehicles under the LHDT1 category have a GVWR of 8,501 to 10,000 lbs.

[9] Vehicles under the LHDT2 category have a GVWR of 10,001 to 14,000 lbs.

[10] Based on Table II-3, Port and Rail Cargo Handling Equipment Demographics by Type, from CARB's Technology Assessment: Mobile Cargo Handling Equipment document, a single piece of equipment could operate up to 2 hours per day (Total Average Annual Activity divided by Total Number Pieces of Equipment). As such, the analysis conservatively assumes that the tractor/loader/backhoe would operate up to 4 hours per day.

trips per day) have the potential to include TRUs, which accounts for all truck trips that would be associated with up to 61,000 sf of high-cube cold storage use, as summarized in the *Orchard Logistics Center Traffic Analysis* (1). TRUs are accounted for during on-site and off-site travel. The TRU calculations are based on EMFAC 2021. EMFAC 2021 does not provide emission rates per hour or mile as with the on-road emission model and only provides emission inventories. Emission results are produced in tons per day while all activity, fuel consumption and horsepower hours were reported at annual levels. The emission inventory is based on specific assumptions including the average horsepower rating of specific types of equipment and the hours of operation annually. These assumptions are not always consistent with assumptions used in the modeling of project level emissions. Therefore, the emissions inventory was converted into emission rates to accurately calculate emissions from TRU operation associated with project level details. This was accomplished by converting the annual horsepower hours to daily operational characteristics and converting the daily emission levels into hourly emission rates based on the total emission of each criteria pollutant by equipment type and the average daily hours of operation.

3.5.6 OPERATIONAL EMISSIONS SUMMARY

As previously stated, CalEEMod utilizes summer and winter EMFAC 2021 emission factors in order to derive vehicle emissions associated with Project operational activities, which vary by season. The estimated operational-source emissions are summarized on Tables 3-8. Detailed operation model outputs for the Project are presented in Appendix 3.2. As shown on Table 3-8, the Project's daily regional emissions from on-going operations will not exceed any of the thresholds of significance.

TABLE 3-8: SUMMARY OF PEAK OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Summer						
Area Source	19.10	0.22	26.50	< 0.005	0.04	0.05
Energy Source	0.36	6.50	5.46	0.04	0.49	0.49
Mobile Source	5.71	31.70	85.50	0.41	10.30	2.41
TRU Source	1.78	2.08	0.20	0.00	0.10	0.09
On-Site Equipment Source	0.23	0.75	32.89	0.00	0.06	0.05
Total Maximum Daily Emissions	**27.19**	**41.25**	**150.55**	**0.45**	**10.99**	**3.09**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Winter						
Area Source	14.70	0.00	0.00	0.00	0.00	0.00
Energy Source	0.36	6.50	5.46	0.04	0.49	0.49

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mobile Source	5.48	33.40	70.20	0.39	10.30	2.41
TRU Source	1.78	2.08	0.20	0.00	0.10	0.09
On-Site Equipment Source	0.23	0.75	32.89	0.00	0.06	0.05
Total Maximum Daily Emissions	**22.56**	**42.73**	**108.75**	**0.43**	**10.95**	**3.04**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

3.6 LOCALIZED SIGNIFICANCE

BACKGROUND ON LOCALIZED SIGNIFICANCE THRESHOLD (LST) DEVELOPMENT

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4[11]. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The analysis makes use of methodology included in the *LST Methodology* (38). Based on SCAQMD's guidance, LSTs only apply to concentrations of CO, NO_2, PM_{10}, and $PM_{2.5}$.

APPLICABILITY OF LSTS FOR THE PROJECT

For this Project, the appropriate SRA for the LST analysis is the SCAQMD San Gorgonio Pass (SRA 29). Based on SCAQMD's guidance, LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. In order to determine the appropriate methodology for determining localized impacts that could occur as a result of Project-related construction, the following process is undertaken:

- Identify the maximum daily on-site emissions that will occur during construction activity:

[11] The purpose of SCAQMD's Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as "…equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

    - The maximum daily on-site emissions could be based on information provided by the Project Applicant; or
    - The SCAQMD's *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* and CalEEMod User's Guide *Appendix A: Calculation Details for CalEEMod* can be used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod (39) (36).
- If the total acreage disturbed is less than or equal to 5 acres per day, then the SCAQMD's screening look-up tables are utilized to determine if a Project has the potential to result in a significant impact. The look-up tables establish a maximum daily emissions threshold in lbs/day that can be compared to CalEEMod outputs.
- Since total acreage disturbed for the Project is likely greater than 5 acres per day throughout the construction process, then the SCAQMD recommends dispersion modeling to be conducted to determine the actual pollutant concentrations for applicable LSTs in the air. In other words, the maximum daily on-site emissions as calculated in CalEEMod are modeled via air dispersion modeling to calculate the actual concentration in the air (e.g., parts per million or micrograms per cubic meter) in order to determine if any applicable thresholds are exceeded.

EMISSIONS CONSIDERED

Based on SCAQMD's *LST Methodology*, emissions for concern during construction activities are on-site NO_X, CO, $PM_{2.5}$, and PM_{10}. The *LST Methodology* clearly states *(page 1-4)* that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs (40)." As such, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered.

MAXIMUM DAILY DISTURBED-ACREAGE

It is assumed that 5 acres will be disturbed per day can be actively disturbed during construction of the site. In CalEEMod, the Total Acres Graded (TAG) field represents the cumulative distance traversed on the property by the grading equipment. In order to properly grade a piece of land, multiple passes with grading equipment may be required. So even though the lot size is a fixed number of acres, the TAG could be an order of magnitude higher than the footprint of the lot (36). Total Acres Graded (TAG) is a function of the maximum acreage disturbed per day times the number of days of the subphase of construction. As such, the TAG field in CalEEMod has been revised to 150 acres (5 acres per day x 30 days) for site preparation and 300 acres (5 acres per day x 60 days) for grading[12].

DISPERSION MODELING

In order to estimate localized pollutant concentrations resulting from Project construction, the SCAQMD-approved AERMOD dispersion model was utilized. The modeling approach utilized is discussed as follows:

[12] CalEEMod does not provide a "Total Acres Graded" field for Demolition, Building Construction, Paving, or Architectural Coating activities.

SOURCES

It should be noted that in order to model worst-case conditions, the highest daily peak on-site emissions resulting from overlapping construction activity were modeled.

A ground level release height and a 1 meter (~3.28 feet) initial vertical dimension (sigma z) were utilized for emissions of PM_{10} and $PM_{2.5}$ consistent with SCAQMD's LST guidance.

In order to account for equipment exhaust emissions from NO_2, and CO a release height of 5.0 meters was utilized consistent with SCAQMD's LST guidance.

METEOROLOGICAL DATA AND MODEL OPTIONS

In order to account for meteorological conditions at the Project site, meteorological data from the SCAQMD's Banning (BNAP) monitoring station was utilized, as this is the nearest station to the Project site for which meteorological data is available. Additionally, a receptor height of 0 meters and regulatory default options were utilized consistent with SCAQMD's LST guidance.

RECEPTORS

As previously stated, LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable NAAQS and CAAQS at the nearest residence or sensitive receptor. Receptor locations are off-site locations where individuals may be exposed to emissions from Project activities.

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as "sensitive receptors. These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with the LST Methodology, the nearest land use where an individual could remain for 24 hours to the Project site will be used to determine construction and operational air quality impacts for emissions of PM_{10} and $PM_{2.5}$, since PM_{10} and $PM_{2.5}$ thresholds are based on a 24-hour averaging time.

LSTs apply, even for non-sensitive land uses, consistent with *LST Methodology* and SCAQMD guidance. Per the *LST Methodology*, commercial and industrial facilities are not included in the definition of sensitive receptor because employees and patrons do not typically remain onsite for a full 24 hours but are typically onsite for 8 hours or less. However, *LST Methodology* explicitly states that "*LSTs based on shorter averaging periods, such as the NO_2 and CO LSTs, could also be applied to receptors such as industrial or commercial facilities since it is reasonable to assume that a worker at these sites could be present for periods of one to eight hours* (40)." Therefore, any adjacent land use where an individual could remain for 1 or 8-hours, which is located at a closer distance to the Project site than the receptor used for PM_{10} and $PM_{2.5}$ analysis, must be considered to determine construction and operational LST air impacts for emissions of NO_2 and CO since these pollutants have shorter averaging times of 1 or 8-hours.

PROJECT-RELATED RECEPTORS RELATIVE TO CONSTRUCTION AND OPERATIONAL ACTIVITIES

Receptors in the Project study area relative to construction and operational activities are described below and shown on Exhibit 3-A. Localized air quality impacts were evaluated at receptor land uses nearest the Project site. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site.

R1: Location R1 represents the existing residence at 1002 Darby Dan Way, approximately 1,155 feet northeast of the Project site. Receptor R1 is placed at the private outdoor living areas (backyards) facing the Project site.

R2: Location R2 represents the iFIT warehouse located at 630 Nicholas Road, approximately 294 feet east of the Project site. Receptor R2 is placed at the building façade.

R3: Location R3 represents the CJ Foods Manufacturing facility at 415 Nicholas Road, approximately 883 feet south of the Project site. Receptor R3 is placed at the building façade.

R4: Location R4 represents the Amazon Fulfillment Center facility, approximately 883 feet southwest of the Project site. Receptor R4 is placed at the building façade.

R5: Location R5 represents the Wolverine Worldwide shoe factory at 1020 Prosperity Way, approximately 357 feet west of the Project site. Receptor R5 is placed at the building façade.

R6: Location R6 represents the Beaumont RV dealership at 910 Western Knolls Avenue, approximately 549 feet northwest of the Project site. Receptor R6 is placed at the building façade.

R7: Location R7 represents the Little Folks Book and Toy Company, Inc. facility, 613 feet north of the Project site. Receptor R7 is placed at the building façade.

R8: Location R8 represents the existing residence at 901 Wilsey Way, approximately 1,743 feet northeast of the Project site. Receptor R8 is placed at the private outdoor living areas (backyards) facing the Project site.

CONSTRUCTION-SOURCE LOCALIZED EMISSIONS

IMPACTS WITHOUT MITIGATION

Without mitigation, emissions during the peak construction activity will not exceed the SCAQMD's localized significance thresholds as illustrated on Table 3-9. As such, the Project's localized impacts during construction activity would be less than significant. Outputs from the model runs for construction LSTs are provided in Appendix 3.4.

TABLE 3-9: LOCALIZED SIGNIFICANCE SUMMARY PEAK CONSTRUCTION (WITHOUT MITIGATION)

Peak Construction	**CO**		**NO_2**	**PM_{10}**	**$PM_{2.5}$**
	Averaging Time				
	1-Hour	**8-Hour**	**1-Hour**	**24-Hours**	**24-Hours**
Peak Day Localized Emissions	0.03	0.01	0.02	2.85	0.46
Background Concentration [A]	2.7	2.5	0.06		
Total Concentration	**2.73**	**2.51**	**0.08**	**2.85**	**0.46**
SCAQMD Localized Significance Threshold	20	9	0.18	10.4	10.4
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**

[A] Highest concentration from the last three years of available data.
Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm

EXHIBIT 3-A: RECEPTOR LOCATIONS

OPERATIONAL-SOURCE LOCALIZED EMISSIONS

The LST analysis generally includes on-site sources (area, energy, mobile, and on-site cargo handling equipment – are previously discussed in Section 3.5 of this report). However, it should be noted that the CalEEMod outputs do not separate on-site and off-site emissions from mobile sources. As such, to establish a maximum potential impact scenario for analytic purposes, the modeled emissions include all on-site Project-related stationary (area) sources and 5% of the Project-related mobile sources. Applying the trip length applied in the CalEEMod analysis for the Project (approximately 27.7 miles for passenger cars and 33.39 miles for all trucks), 5% of this total would represent an on-site travel distance of approximately 1.39 miles for passenger cars and 1.67 miles for trucks. It should be noted that the longest on-site distance is roughly 0.7 miles for both trucks and passenger cars. As such, the 5% assumption is conservative and would tend to overstate the actual impact because it is not likely that every single passenger car would drive 1.39 miles on the site or that every truck would drive 1.67 miles on the site.

IMPACTS WITHOUT MITIGATION

Without mitigation, emissions during the peak operational activity will not exceed the SCAQMD's localized significance thresholds as illustrated on Table 3-10. As such, the Project's localized impacts during operational activity would be less than significant. Outputs from the model runs for operational LSTs are provided in Appendix 3.4.

TABLE 3-10: LOCALIZED SIGNIFICANCE SUMMARY OPERATION (WITHOUT MITIGATION)

Peak Construction	CO		NO_2	PM_{10}	$PM_{2.5}$
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hours	24-Hours
Peak Day Localized Emissions	2.23E-02	2.05E-02	2.18E-03	0.06	0.04
Background Concentration [A]	2.7	2.5	0.06		
Total Concentration	**2.72**	**2.52**	**0.06**	**0.06**	**0.04**
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**

[A] Highest concentration from the last three years of available data.
Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in μg/m³. All others are expressed in ppm

3.7 CO "HOT SPOT" ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or "hot spots." Further, detailed modeling of Project-specific CO "hot spots" is not needed to reach this conclusion. An adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur.

It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in

California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment.

To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot spot" analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards, as shown on Table 3-11.

TABLE 3-11: CO MODEL RESULTS

Intersection Location	CO Concentrations (ppm)		
	Morning 1-hour	Afternoon 1-hour	8-hour
Wilshire Boulevard/Veteran Avenue	4.6	3.5	3.7
Sunset Boulevard/Highland Avenue	4	4.5	3.5
La Cienega Boulevard/Century Boulevard	3.7	3.1	5.2
Long Beach Boulevard/Imperial Highway	3	3.1	8.4

Source: 2003 AQMP, Appendix V: Modeling and Attainment Demonstrations
Notes: Federal 1-hour standard is 35 ppm, and the deferral 8-hour standard is 9.0 ppm.

Based on the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (*1992 CO Plan*), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. As evidence of this, for example, 8.4 ppm 8-hr CO concentration measured at the Long Beach Blvd. and Imperial Hwy. intersection (highest CO generating intersection within the "hot spot" analysis), only 0.7 ppm was attributable to the traffic volumes and congestion at this intersection; the remaining 7.7 ppm were due to the ambient air measurements at the time the 2003 AQMP was prepared (41). In contrast, an adverse CO concentration, known as a "hot spot", would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur.

The ambient 1-hr and 8-hr CO concentration within the Project study area is estimated to be 1.9 ppm and 1.4 ppm, respectively (data from San Gorgonio Pass station for 2020). Therefore, even if the traffic volumes for the proposed Project were double or even triple of the traffic volumes generated at the Long Beach Blvd. and Imperial Hwy. intersection, coupled with the on-going improvements in ambient air quality, the Project would not be capable of resulting in a CO "hot spot" at any study area intersections.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (42). Traffic volumes generating the CO concentrations for the "hot spot" analysis is shown on Table 3-12. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vph and AM/PM traffic volumes of 8,062 vph and 7,719 vph respectively (41). The *2003 AQMP* estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations (4.6 ppm x 4= 18.4 ppm) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm)[13].

TABLE 3-12: TRAFFIC VOLUMES

Intersection Location	Peak Traffic Volumes (vph)				
	Eastbound (AM/PM)	Westbound (AM/PM)	Southbound (AM/PM)	Northbound (AM/PM)	Total (AM/PM)
Wilshire Boulevard/Veteran Avenue	4,954/2,069	1,830/3,317	721/1,400	560/933	8,062/7,719
Sunset Boulevard/Highland Avenue	1,417/1,764	1,342/1,540	2,304/1,832	1,551/2,238	6,614/5,374
La Cienega Boulevard/Century Boulevard	2,540/2,243	1,890/2,728	1,384/2,029	821/1,674	6,634/8,674
Long Beach Boulevard/Imperial Highway	1,217/2,020	1,760/1,400	479/944	756/1,150	4,212/5,514

Source: 2003 AQMP

As summarized on Table 3-13 below, the intersection of Potrero Boulevard and 4th Street would have the highest AM/PM traffic volumes of 2,620 vph and 3,762 vph respectively. As such, Total traffic volumes at the intersections considered are less than the traffic volumes identified in the *2003 AQMP*. As such, the Project considered herein along with background and cumulative development would not produce the volume of traffic required to generate a CO "hot spot" either in the context of the 2003 Los Angeles hot spot study or based on representative BAAQMD CO threshold considerations. Therefore, CO "hot spots" are not an environmental impact of concern for the Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

TABLE 3-13: PEAK HOUR TRAFFIC VOLUMES

Intersection Location	Peak Traffic Volumes (vph)				
	Northbound (AM/PM)	Southbound (AM/PM)	Eastbound (AM/PM)	Westbound (AM/PM)	Total (AM/PM)
Potrero Boulevard/4th Street	508/2,316	--/--	904/1,020	1,208/426	2,620/3,762
Veile Avenue/4th Street	80/183	106/446	224/1,082	1,667/1,415	2,077/3,126

Source: *Orchard Logistics Center Traffic Analysis* (Urban Crossroads, Inc., 2022)

3.8 AQMP

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the

[13] Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm)

four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the SCAG, county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In March 2017, the SCAQMD released the *Final 2016 AQMP* (*2016 AQMP*). The *2016 AQMP* continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (43). Similar to the 2012 AQMP, the *2016 AQMP* incorporates scientific and technological information and planning assumptions, including the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (*2016-2040 RTP/SCS*), a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (18). The Project's consistency with the AQMP will be determined using the *2016 AQMP* as discussed below.

The draft 2022 AQMP was released in August 2022 and public comment closed on October 18, 2022. The SCAQMD Governing Board adopted the 2022 AQMP at its December 2, 2022, meeting, and will subsequently be reviewed and approved by CARB and the United States Environmental Protection Agency for final approval, which is expected to occur sometime in 2023.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2, and Section 12.3 of the *1993 CEQA Handbook* (44). These indicators are discussed below:

3.8.1 CONSISTENCY CRITERION NO. 1

The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that Consistency Criterion No. 1 refers to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded.

Construction Impacts – Consistency Criterion 1

Consistency Criterion No. 1 refers to violations of the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if localized or regional significance thresholds were exceeded. As evaluated, the Project's localized and regional construction-source emissions would not exceed applicable regional significance threshold (after mitigation) and LST thresholds. As such, a less than significant impact is expected.

Operational Impacts – Consistency Criterion 1

As evaluated, the Project's localized and regional operation-source emissions would not exceed applicable regional significance threshold and LST thresholds. As such, a less than significant impact is expected.

On the basis of the preceding discussion, the Project is determined to be inconsistent with the first criterion.

3.8.2 CONSISTENCY CRITERION NO. 2

The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

The *2016 AQMP* demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in City of Beaumont General Plan is considered to be consistent with the AQMP***.***

Construction and Operational Impacts – Consistency Criterion 2

Per the City's General Plan Land Use Map, the Project site is designated for Industrial uses. The Industrial designation is characterized by a wide range of industrial uses, including "stand-alone" industrial activities as well as business parks. Other types of permitted development within this land use category includes research parks, private trade schools, colleges, and business complexes containing a mix of light industrial, distribution, office, and commercial or supportive retail activities. Most of the parcels included in the Industrial land use designation are found in the Interstate Employment Subarea located south of the SR-60 Freeway. Range of industrial uses, including "standalone" industrial activities, general industrial, light industrial, research parks, private trade schools, colleges, and business parks (45). The Project is proposed to consist of a maximum of 610,000 sf of warehouse use within a single building, which is consistent with the City's designation and intensity.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

AQMP CONSISTENCY CONCLUSION

The Project would not result in or cause NAAQS or CAAQS violations. The proposed Project is consistent with the land use and growth intensities reflected in the adopted General Plan. Furthermore, the Project would not exceed any applicable regional or local thresholds. As such, the Project is therefore considered to be consistent with the AQMP and a less than significant impact is expected.

3.9 POTENTIAL HEALTH IMPACTS OF THE PROJECT

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during Project construction.

Additionally, the Project will not exceed the SCAQMD localized significance thresholds during operational activity. Further Project traffic would not create or result in a CO "hotspot." Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations as the result of Project operations.

TOXIC AIR CONTAMINANTS

Based on the results of the *Orchard Logistics Center Health Risk Assessment* (46), emissions generated from the Project during short-term construction and long-term operation will not exceed SCAQMD significance thresholds for cancer and non-cancer health risks. As such, a less than significant impact is expected.

3.10 ODORS

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required (47).

3.11 CUMULATIVE IMPACTS

As previously shown in Table 2-3, the CAAQS designate the Project site as nonattainment for O_3 PM_{10}, and $PM_{2.5}$ while the NAAQS designates the Project site as nonattainment for O_3 and $PM_{2.5}$.

The SCAQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (48). In this report the SCAQMD clearly states (Page D-3):

> *"…the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR...*
>
> *Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

CONSTRUCTION IMPACTS

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, proposed Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

OPERATIONAL IMPACTS

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project operation-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, proposed Project operation-source emissions would be considered less than significant on a project-specific and cumulative basis.

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5 CERTIFICATIONS

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Orchard Logistics Center. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation.

If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Haseeb Qureshi
Principal
URBAN CROSSROADS, INC.
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April 2008
Principles of Ambient Air Monitoring – CARB • August 2007
AB2588 Regulatory Standards – Trinity Consultants • November 2006
Air Dispersion Modeling – Lakes Environmental • June 2006

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APPENDIX 2.1:

STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

APPENDIX C

MAPS AND TABLES OF AREA DESIGNATIONS FOR STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

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APPENDIX C

MAPS AND TABLES OF AREA DESIGNATIONS FOR STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

This attachment fulfills the requirement of Health and Safety Code section 40718 for CARB to publish maps that identify areas where one or more violations of any State ambient air quality standard (State standard) or national ambient air quality standard (national standard) have been measured. The national standards are those promulgated under section 109 of the federal Clean Air Act (42 U.S.C. 7409).

This attachment is divided into three parts. The first part comprises a table showing the levels, averaging times, and measurement methods for each of the State and national standards. This is followed by a section containing maps and tables showing the area designations for each pollutant for which there is a State standard in the California Code of Regulations, title 17, section 70200. The last section contains maps and tables showing the most current area designations for the national standards.

Ambient Air Quality Standards

(Updated 5/4/16)

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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Area Designations for the State Ambient Air Quality Standards

The following maps and tables show the area designations for each pollutant with a State standard set forth in the California Code of Regulations, title 17, section 60200. Each area is identified as attainment, nonattainment, nonattainment-transitional, or unclassified for each pollutant, as shown below:

Attainment	A
Nonattainment	N
Nonattainment-Transitional	NA-T
Unclassified	U

In general, CARB designates areas by air basin for pollutants with a regional impact and by county for pollutants with a more local impact. However, when there are areas within an air basin or county with distinctly different air quality deriving from sources and conditions not affecting the entire air basin or county, CARB may designate a smaller area. Generally, when boundaries of the designated area differ from the air basin or county boundaries, the description of the specific area is referenced at the bottom of the summary table.

FIGURE 1

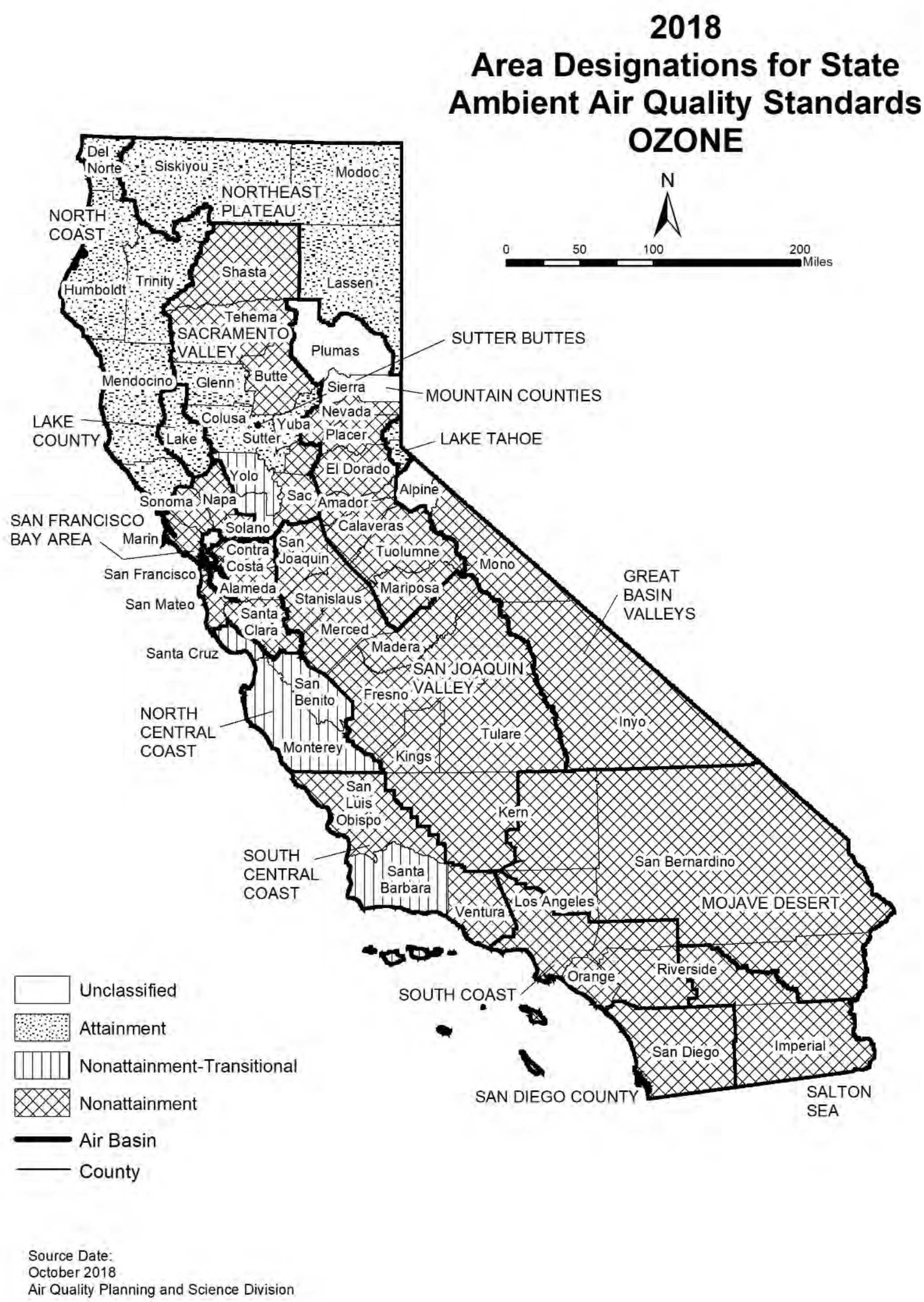

2018
Area Designations for State
Ambient Air Quality Standards
OZONE
N
0 50 100 200
Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Shasta
Lassen
Humboldt
Trinity
Tehema
SACRAMENTO VALLEY
Plumas
SUTTER BUTTES
Butte
Glenn
Mendocino
Sierra
MOUNTAIN COUNTIES
Nevada
Colusa
Yuba
LAKE COUNTY
Lake
Sutter
Placer
LAKE TAHOE
El Dorado
Yolo
Alpine
Sonoma
Napa
Sac
Amador
SAN FRANCISCO BAY AREA
Marin
Solano
Calaveras
San Joaquin
Contra Costa
Tuolumne
Mono
San Francisco
Alameda
Mariposa
GREAT BASIN VALLEYS
San Mateo
Stanislaus
Santa Clara
Merced
Santa Cruz
Madera
SAN JOAQUIN VALLEY
San Benito
Fresno
NORTH CENTRAL COAST
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
SOUTH CENTRAL COAST
Santa Barbara
San Bernardino
Los Angeles
MOJAVE DESERT
Ventura
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
SALTON SEA
Unclassified
Attainment
Nonattainment-Transitional
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 1

California Ambient Air Quality Standards Area Designations for Ozone (1)

	N	NA-T	U	A		N	NA-T	U	A
GREAT BASIN VALLEYS AIR BASIN					NORTHEAST PLATEAU AIR BASIN				X
Alpine County			X		SACRAMENTO VALLEY AIR BASIN				
Inyo County	X				Colusa and Glenn Counties				X
Mono County	X				Sutter/Yuba Counties				
LAKE COUNTY AIR BASIN				X	Sutter Buttes	X			
LAKE TAHOE AIR BASIN				X	Remainder of Sutter County				X
MOJAVE DESERT AIR BASIN	X				Yuba County				X
MOUNTAIN COUNTIES AIR BASIN					Yolo/Solano Counties		X		
Amador County	X				Remainder of Air Basin	X			
Calaveras County	X				SALTON SEA AIR BASIN	X			
El Dorado County (portion)	X				SAN DIEGO AIR BASIN	X			
Mariposa County	X				SAN FRANCISCO BAY AREA AIR BASIN	X			
Nevada County	X				SAN JOAQUIN VALLEY AIR BASIN	X			
Placer County (portion)	X				SOUTH CENTRAL COAST AIR BASIN				
Plumas County			X		San Luis Obispo County	X			
Sierra County			X		Santa Barbara County		X		
Tuolumne County	X				Ventura County	X			
NORTH CENTRAL COAST AIR BASIN		X			SOUTH COAST AIR BASIN	X			
NORTH COAST AIR BASIN				X					

(1) AB 3048 (Olberg) and AB 2525 (Miller) signed into law in 1996, made changes to Health and Safety Code, section 40925.5. One of the changes allows nonattainment districts to become nonattainment-transitional for ozone by operation of law.

FIGURE 2

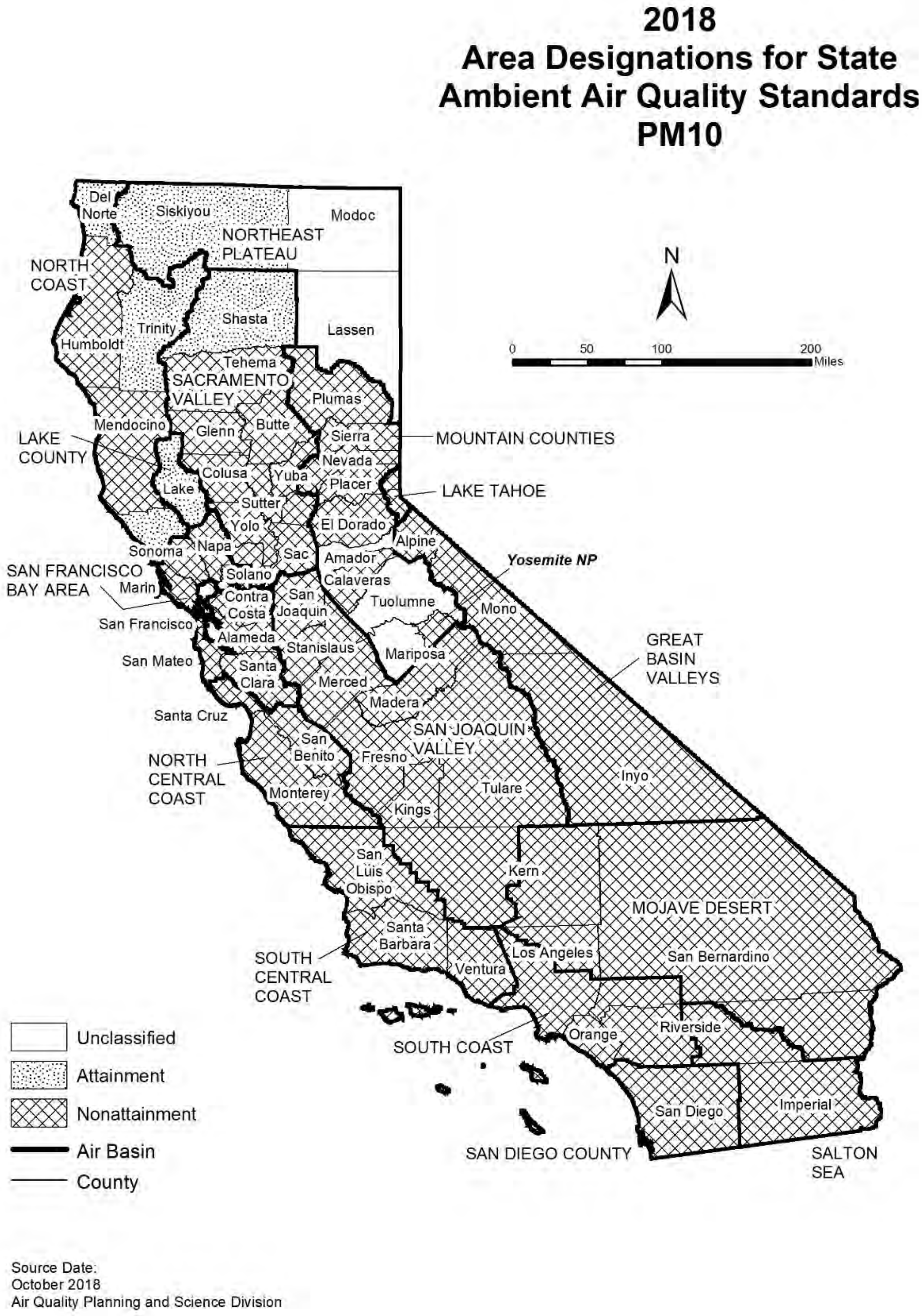

2018
Area Designations for State
Ambient Air Quality Standards
PM10
N
0 50 100 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Trinity
Shasta
Lassen
Humboldt
Tehema
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
LAKE COUNTY
Nevada
Colusa
Yuba
Placer
LAKE TAHOE
Lake
Sutter
Yolo
El Dorado
Alpine
Sonoma
Napa
Sac
Amador
Yosemite NP
SAN FRANCISCO BAY AREA
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
GREAT BASIN VALLEYS
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
SAN JOAQUIN VALLEY
San Benito
NORTH CENTRAL COAST
Fresno
Inyo
Monterey
Tulare
Kings
San Luis Obispo
Kern
MOJAVE DESERT
Santa Barbara
Los Angeles
San Bernardino
Ventura
SOUTH CENTRAL COAST
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
SALTON SEA
Unclassified
Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 2

California Ambient Air Quality Standards
Area Designation for Suspended Particulate Matter (PM10)

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN	X			NORTH CENTRAL COAST AIR BASIN	X		
LAKE COUNTY AIR BASIN			X	NORTH COAST AIR BASIN			
LAKE TAHOE AIR BASIN	X			Del Norte, Sonoma (portion) and Trinity Counties			X
MOJAVE DESERT AIR BASIN	X			Remainder of Air Basin	X		
MOUNTAIN COUNTIES AIR BASIN				NORTHEAST PLATEAU AIR BASIN			
Amador County		X		Siskiyou County			X
Calaveras County	X			Remainder of Air Basin		X	
El Dorado County (portion)	X			SACRAMENTO VALLEY AIR BASIN			
Mariposa County				Shasta County			X
- Yosemite National Park	X			Remainder of Air Basin	X		
- Remainder of County		X		SALTON SEA AIR BASIN	X		
Nevada County	X			SAN DIEGO AIR BASIN	X		
Placer County (portion)	X			SAN FRANCISCO BAY AREA AIR BASIN	X		
Plumas County	X			SAN JOAQUIN VALLEY AIR BASIN	X		
Sierra County	X			SOUTH CENTRAL COAST AIR BASIN	X		
Tuolumne County		X		SOUTH COAST AIR BASIN	X		

FIGURE 3

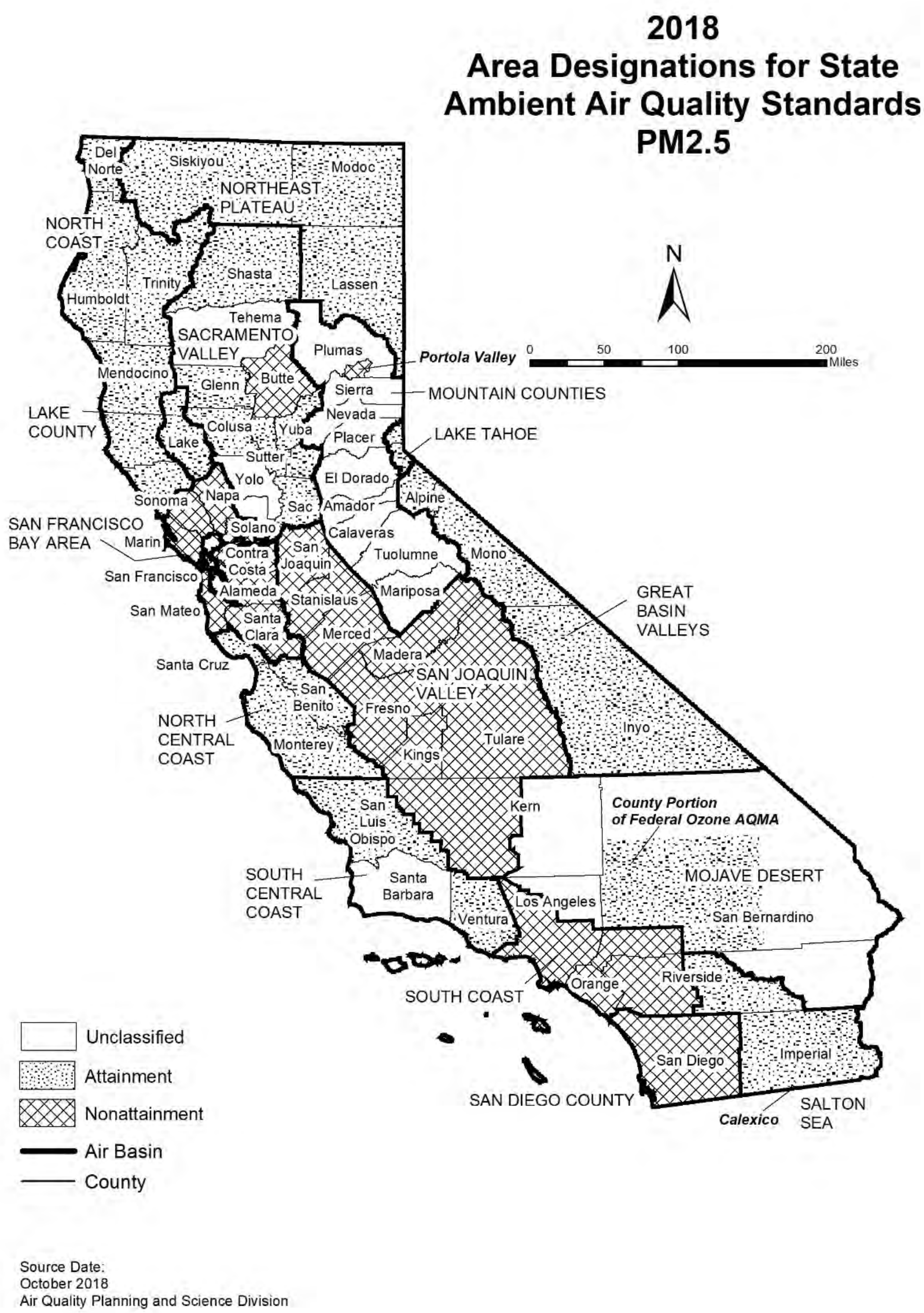

2018
Area Designations for State
Ambient Air Quality Standards
PM2.5
N
0 50 100 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Trinity
Shasta
Lassen
Humboldt
Tehema
SACRAMENTO VALLEY
Plumas
Portola Valley
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
LAKE COUNTY
Nevada
Colusa
Yuba
Lake
Placer
LAKE TAHOE
Sutter
Yolo
El Dorado
Sonoma
Napa
Sac
Amador
Alpine
SAN FRANCISCO BAY AREA
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
GREAT BASIN VALLEYS
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
SAN JOAQUIN VALLEY
San Benito
Fresno
NORTH CENTRAL COAST
Inyo
Monterey
Tulare
Kings
San Luis Obispo
Kern
County Portion of Federal Ozone AQMA
MOJAVE DESERT
SOUTH CENTRAL COAST
Santa Barbara
Los Angeles
Ventura
San Bernardino
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
Calexico
SALTON SEA
Unclassified
Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 3

California Ambient Air Quality Standards
Area Designations for Fine Particulate Matter (PM2.5)

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN			X	SALTON SEA AIR BASIN			
LAKE COUNTY AIR BASIN			X	Imperial County			
LAKE TAHOE AIR BASIN			X	- City of Calexico (3)	X		
MOJAVE DESERT AIR BASIN				Remainder of Air Basin			X
San Bernardino County				SAN DIEGO AIR BASIN	X		
- County portion of federal Southeast Desert Modified AQMA for Ozone (1)			X	SAN FRANCISCO BAY AREA AIR BASIN	X		
				SAN JOAQUIN VALLEY AIR BASIN	X		
Remainder of Air Basin		X		SOUTH CENTRAL COAST AIR BASIN			
MOUNTAIN COUNTIES AIR BASIN				San Luis Obispo County			X
Plumas County				Santa Barbara County		X	
- Portola Valley (2)	X			Ventura County			X
Remainder of Air Basin		X		SOUTH COAST AIR BASIN	X		
NORTH CENTRAL COAST AIR BASIN			X				
NORTH COAST AIR BASIN			X				
NORTHEAST PLATEAU AIR BASIN			X				
SACRAMENTO VALLEY AIR BASIN							
Butte County	X						
Colusa County			X				
Glenn County			X				
Placer County (portion)			X				
Sacramento County			X				
Shasta County			X				
Sutter and Yuba Counties			X				
Remainder of Air Basin		X					

(1) California Code of Regulations, title 17, section 60200(b)

(2) California Code of Regulations, title 17, section 60200(c)

(3) California Code of Regulations, title 17, section 60200(a)

FIGURE 4

2018
Area Designations for State Ambient Air Quality Standards
CARBON MONOXIDE

Source Date:
October 2018
Air Quality Planning and Science Division

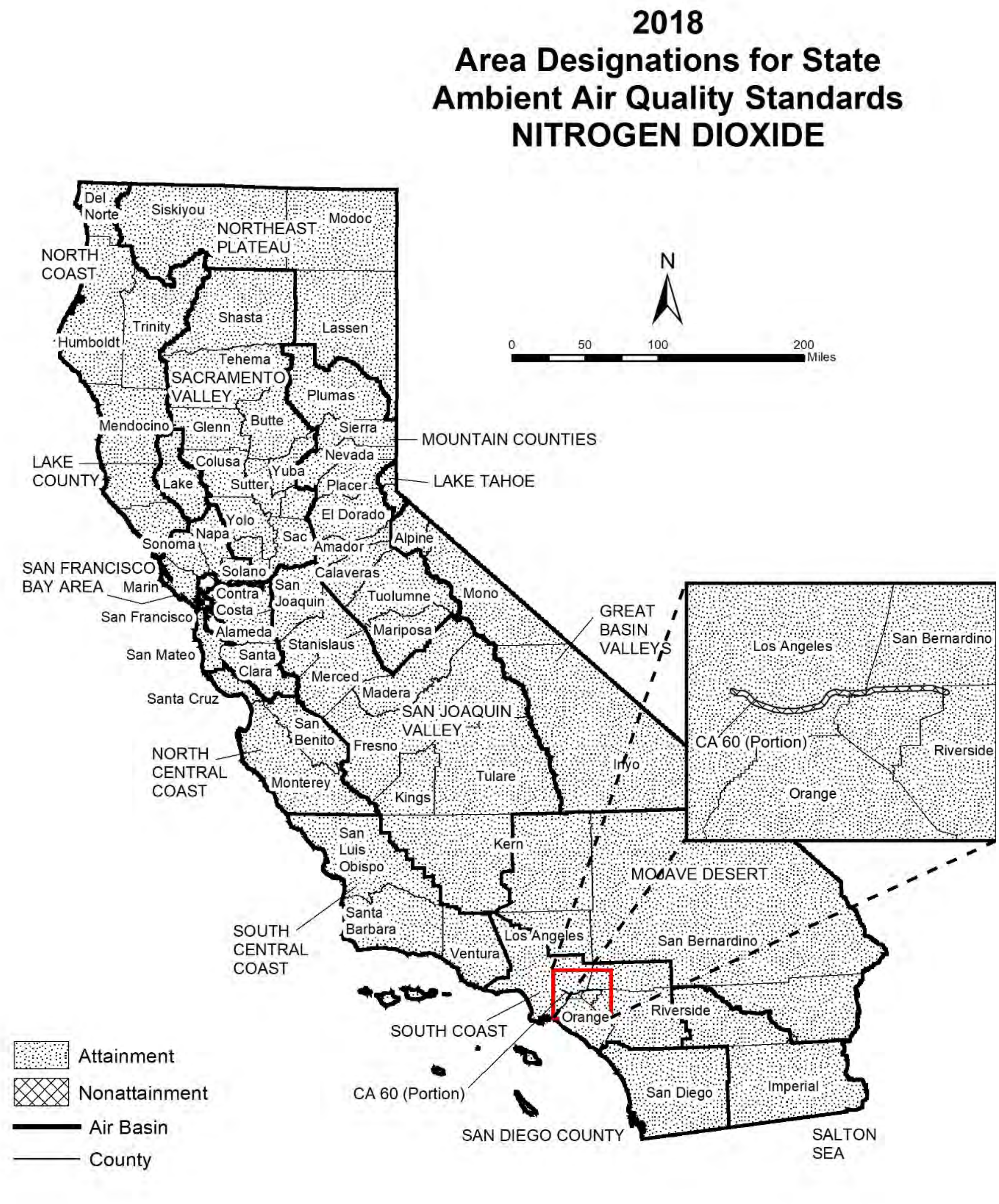
TABLE 4

California Ambient Air Quality Standards
Area Designation for Carbon Monoxide*

	N	NA-T	U	A		N	NA-T	U	A
GREAT BASIN VALLEYS AIR BASIN					SACRAMENTO VALLEY AIR BASIN				
Alpine County			X		Butte County				X
Inyo County				X	Colusa County			X	
Mono County				X	Glenn County			X	
LAKE COUNTY AIR BASIN				X	Placer County (portion)				X
LAKE TAHOE AIR BASIN				X	Sacramento County				X
MOJAVE DESERT AIR BASIN					Shasta County			X	
Kern County (portion)			X		Solano County (portion)				X
Los Angeles County (portion)				X	Sutter County				X
Riverside County (portion)			X		Tehama County			X	
San Bernardino County (portion)				X	Yolo County				X
MOUNTAIN COUNTIES AIR BASIN					Yuba County			X	
Amador County			X		SALTON SEA AIR BASIN				X
Calaveras County			X		SAN DIEGO AIR BASIN				X
El Dorado County (portion)			X		SAN FRANCISCO BAY AREA AIR BASIN				X
Mariposa County			X		SAN JOAQUIN VALLEY AIR BASIN				
Nevada County			X		Fresno County				X
Placer County (portion)			X		Kern County (portion)				X
Plumas County				X	Kings County			X	
Sierra County			X		Madera County			X	
Tuolumne County				X	Merced County			X	
NORTH CENTRAL COAST AIR BASIN					San Joaquin County				X
Monterey County				X	Stanislaus County				X
San Benito County			X		Tulare County				X
Santa Cruz County			X		SOUTH CENTRAL COAST AIR BASIN				X
NORTH COAST AIR BASIN					SOUTH COAST AIR BASIN				X
Del Norte County			X						
Humboldt County				X					
Mendocino County				X					
Sonoma County (portion)			X						
Trinity County			X						
NORTHEAST PLATEAU AIR BASIN			X						

* The area designated for carbon monoxide is a county or portion of a county

FIGURE 5



Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 5

California Ambient Air Quality Standards
Area Designation for Nitrogen Dioxide

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN			X	SACRAMENTO VALLEY AIR BASIN			X
LAKE COUNTY AIR BASIN			X	SALTON SEA AIR BASIN			X
LAKE TAHOE AIR BASIN			X	SAN DIEGO AIR BASIN			X
MOJAVE DESERT AIR BASIN			X	SAN FRANCISCO BAY AREA AIR BASIN			X
MOUNTAIN COUNTIES AIR BASIN			X	SAN JOAQUIN VALLEY AIR BASIN			X
NORTH CENTRAL COAST AIR BASIN			X	SOUTH CENTRAL COAST AIR BASIN			X
NORTH COAST AIR BASIN			X	SOUTH COAST AIR BASIN			
NORTHEAST PLATEAU AIR BASIN			X	CA 60 Near-road Portion of San Bernardino, Riverside, and Los Angeles Counties	X		
				Remainder of Air Basin			X

FIGURE 6


2018
Area Designations for State
Ambient Air Quality Standards
SULFUR DIOXIDE
N
0 50 100 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Shasta
Lassen
Trinity
Humboldt
Tehema
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
LAKE COUNTY
Colusa
Yuba
Nevada
Lake
Sutter
Placer
LAKE TAHOE
Yolo
El Dorado
Sonoma
Napa
Sac
Amador
Alpine
SAN FRANCISCO BAY AREA
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
GREAT BASIN VALLEYS
Merced
Madera
Santa Cruz
SAN JOAQUIN VALLEY
San Benito
NORTH CENTRAL COAST
Fresno
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
MOJAVE DESERT
SOUTH CENTRAL COAST
Santa Barbara
Ventura
Los Angeles
San Bernardino
Orange
Riverside
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
SALTON SEA
Attainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 6

California Ambient Air Quality Standards
Area Designation for Sulfur Dioxide*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SACRAMENTO VALLEY AIR BASIN		X
LAKE COUNTY AIR BASIN		X	SALTON SEA AIR BASIN		X
LAKE TAHOE AIR BASIN		X	SAN DIEGO AIR BASIN		X
MOJAVE DESERT AIR BASIN		X	SAN FRANCISCO BAY AREA AIR BASIN		X
MOUNTAIN COUNTIES AIR BASIN		X	SAN JOAQUIN VALLEY AIR BASIN		X
NORTH CENTRAL COAST AIR BASIN		X	SOUTH CENTRAL COAST AIR BASIN		X
NORTH COAST AIR BASIN		X	SOUTH COAST AIR BASIN		X
NORTHEAST PLATEAU AIR BASIN		X			

* The area designated for sulfur dioxide is a county or portion of a county

FIGURE 7


2018
Area Designations for State
Ambient Air Quality Standards
SULFATES
N
0 50 100 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Shasta
Lassen
Humboldt
Trinity
Tehema
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
LAKE COUNTY
Nevada
Colusa
Yuba
Placer
LAKE TAHOE
Lake
Sutter
Yolo
El Dorado
Sonoma
Napa
Sac
Amador
Alpine
Solano
Calaveras
SAN FRANCISCO BAY AREA
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
GREAT BASIN VALLEYS
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Santa Cruz
Madera
SAN JOAQUIN VALLEY
San Benito
NORTH CENTRAL COAST
Fresno
Inyo
Monterey
Tulare
Kings
San Luis Obispo
Kern
MOJAVE DESERT
SOUTH CENTRAL COAST
Santa Barbara
Ventura
Los Angeles
San Bernardino
SOUTH COAST
Orange
Riverside
San Diego
Imperial
SAN DIEGO COUNTY
SALTON SEA
Attainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 7

California Ambient Air Quality Standards
Area Designation for Sulfates

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN			X	SACRAMENTO VALLEY AIR BASIN			X
LAKE COUNTY AIR BASIN			X	SALTON SEA AIR BASIN			X
LAKE TAHOE AIR BASIN			X	SAN DIEGO AIR BASIN			X
MOJAVE DESERT AIR BASIN			X	SAN FRANCISCO BAY AREA AIR BASIN			X
MOUNTAIN COUNTIES AIR BASIN			X	SAN JOAQUIN VALLEY AIR BASIN			X
NORTH CENTRAL COAST AIR BASIN			X	SOUTH CENTRAL COAST AIR BASIN			X
NORTH COAST AIR BASIN			X	SOUTH COAST AIR BASIN			X
NORTHEAST PLATEAU AIR BASIN			X				

FIGURE 8

Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 8

California Ambient Air Quality Standards
Area Designations for Lead (particulate)*

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN			X	SALTON SEA AIR BASIN			X
LAKE COUNTY AIR BASIN			X	SAN DIEGO AIR BASIN			X
LAKE TAHOE AIR BASIN			X	SAN FRANCISCO BAY AREA AIR BASIN			X
MOJAVE DESERT AIR BASIN			X	SAN JOAQUIN VALLEY AIR BASIN			X
MOUNTAIN COUNTIES AIR BASIN			X	SOUTH CENTRAL COAST AIR BASIN			X
NORTH CENTRAL COAST AIR BASIN			X	SOUTH COAST AIR BASIN			X
NORTH COAST AIR BASIN			X				
NORTHEAST PLATEAU AIR BASIN			X				
SACRAMENTO VALLEY AIR BASIN			X				

* The area designated for lead is a county or portion of a county. Since all areas in the State are in attainment for this standard, air basins are indicated here for simplicity.

FIGURE 9

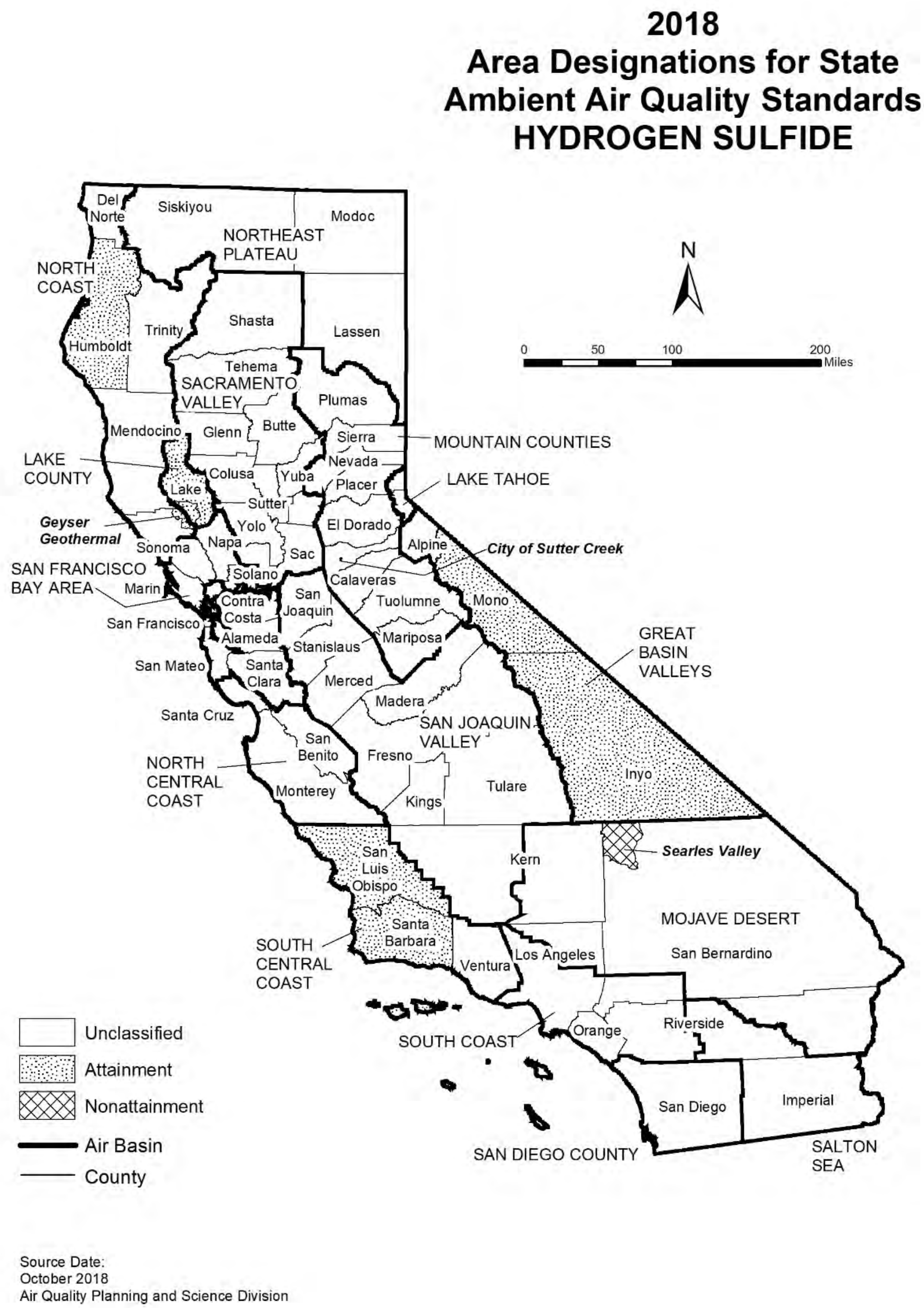

2018
Area Designations for State
Ambient Air Quality Standards
HYDROGEN SULFIDE
N
0 50 100 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Shasta
Trinity
Lassen
Humboldt
Tehema
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
LAKE COUNTY
Colusa
Yuba
Nevada
Placer
LAKE TAHOE
Lake
Sutter
Geyser Geothermal
Yolo
El Dorado
Sonoma
Napa
Sac
Alpine
City of Sutter Creek
SAN FRANCISCO BAY AREA
Solano
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
GREAT BASIN VALLEYS
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
SAN JOAQUIN VALLEY
San Benito
Fresno
NORTH CENTRAL COAST
Inyo
Monterey
Kings
Tulare
San Luis Obispo
Searles Valley
Kern
MOJAVE DESERT
Santa Barbara
SOUTH CENTRAL COAST
Ventura
Los Angeles
San Bernardino
Unclassified
Attainment
Nonattainment
Air Basin
County
SOUTH COAST
Orange
Riverside
San Diego
Imperial
SAN DIEGO COUNTY
SALTON SEA
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 9

California Ambient Air Quality Standards
Area Designation for Hydrogen Sulfide*

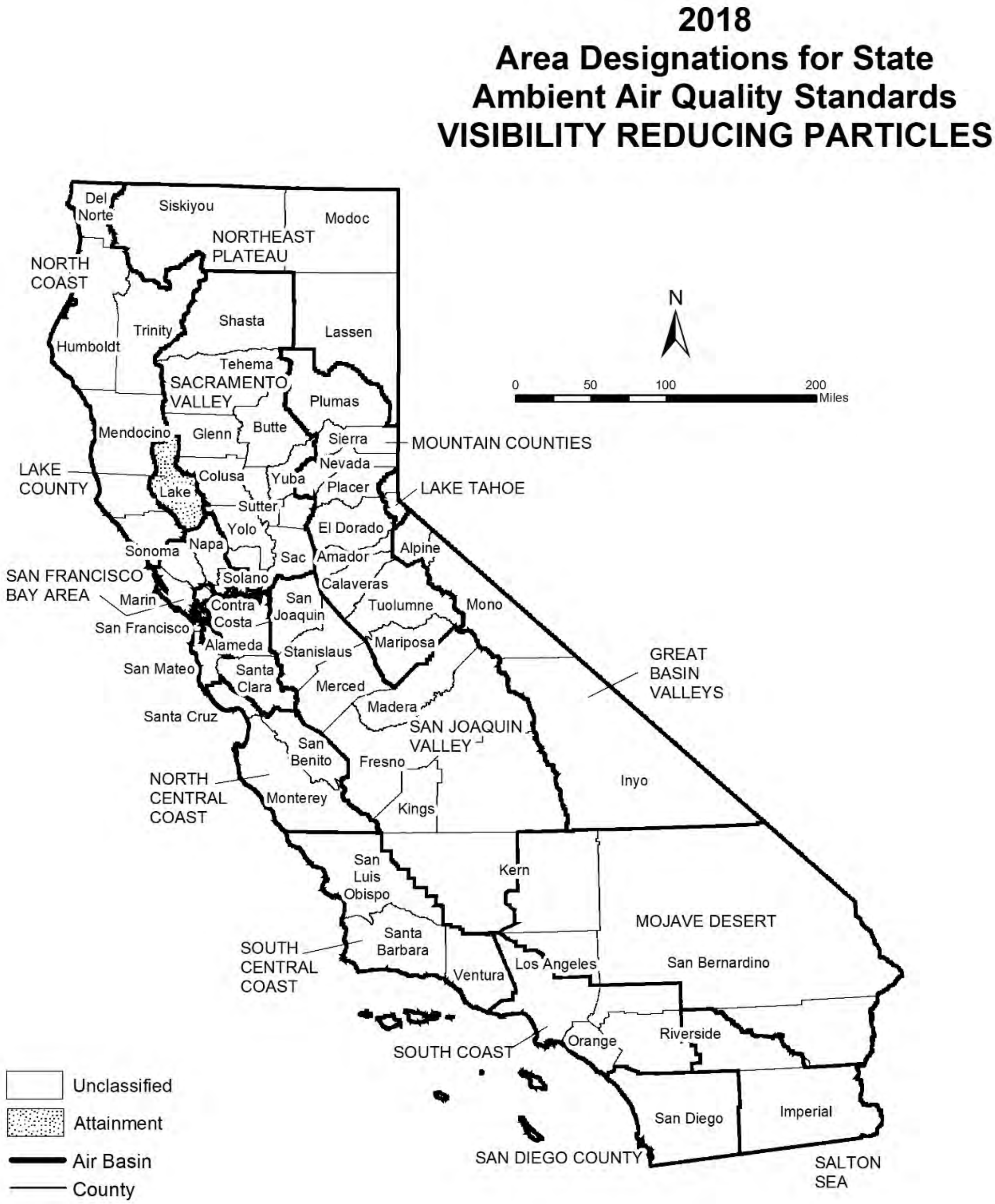
	N	NA-T	U	A		N	NA-T	U	A
GREAT BASIN VALLEYS AIR BASIN					NORTH CENTRAL COAST AIR BASIN			X	
Alpine County			X		NORTH COAST AIR BASIN				
Inyo County				X	Del Norte County			X	
Mono County				X	Humboldt County				X
LAKE COUNTY AIR BASIN				X	Mendocino County			X	
LAKE TAHOE AIR BASIN			X		Sonoma County (portion)				
MOJAVE DESERT AIR BASIN					- Geyser Geothermal Area (2)				X
Kern County (portion)			X		- Remainder of County			X	
Los Angeles County (portion)			X		Trinity County			X	
Riverside County (portion)			X		NORTHEAST PLATEAU AIR BASIN			X	
San Bernardino County (portion)					SACRAMENTO VALLEY AIR BASIN			X	
- Searles Valley Planning Area (1)	X				SALTON SEA AIR BASIN			X	
- Remainder of County			X		SAN DIEGO AIR BASIN			X	
MOUNTAIN COUNTIES AIR BASIN					SAN FRANCISCO BAY AREA AIR BASIN			X	
Amador County					SAN JOAQUIN VALLEY AIR BASIN			X	
- City of Sutter Creek	X				SOUTH CENTRAL COAST AIR BASIN				
- Remainder of County			X		San Luis Obispo County				X
Calaveras County			X		Santa Barbara County				X
El Dorado County (portion)			X		Ventura County			X	
Mariposa County			X		SOUTH COAST AIR BASIN			X	
Nevada County			X						
Placer County (portion)			X						
Plumas County			X						
Sierra County			X						
Tuolumne County			X						

* The area designated for hydrogen sulfide is a county or portion of a county

(1) 52 Federal Register 29384 (August 7, 1987)

(2) California Code of Regulations, title 17, section 60200(d)

FIGURE 10



Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 10

California Ambient Air Quality Standards
Area Designation for Visibility Reducing Particles

	N	NA-T	U	A		N	NA-T	U	A
GREAT BASIN VALLEYS AIR BASIN			X		SACRAMENTO VALLEY AIR BASIN			X	
LAKE COUNTY AIR BASIN				X	SALTON SEA AIR BASIN			X	
LAKE TAHOE AIR BASIN			X		SAN DIEGO AIR BASIN			X	
MOJAVE DESERT AIR BASIN			X		SAN FRANCISCO BAY AREA AIR BASIN			X	
MOUNTAIN COUNTIES AIR BASIN			X		SAN JOAQUIN VALLEY AIR BASIN			X	
NORTH CENTRAL COAST AIR BASIN			X		SOUTH CENTRAL COAST AIR BASIN			X	
NORTH COAST AIR BASIN			X		SOUTH COAST AIR BASIN			X	
NORTHEAST PLATEAU AIR BASIN			X						

Area Designations for the National Ambient Air Quality Standards

The following maps and tables show the area designations for each pollutant with a national ambient air quality standard. Additional information about the federal area designations is available on the U.S. EPA website:

https://www.epa.gov/green-book

Over the last several years, U.S. EPA has been reviewing the levels of the various national standards. The agency has already promulgated new standard levels for some pollutants and is considering revising the levels for others. Information about the status of these reviews is available on the U.S. EPA website:

https://www.epa.gov/criteria-air-pollutants

<u>Designation Categories</u>

Suspended Particulate Matter (PM_{10}). The U.S. EPA uses three categories to designate areas with respect to PM_{10}:

- Attainment
- Nonattainment
- Unclassifiable

Ozone, Fine Suspended Particulate Matter ($PM_{2.5}$), Carbon Monoxide (CO), and Nitrogen Dioxide (NO_2). The U.S. EPA uses two categories to designate areas with respect to these standards:

- Nonattainment
- Unclassifiable/Attainment

The national 1-hour ozone standard was revoked effective June 15, 2005, and the area designations map reflects the 2015 national 8-hour ozone standard of 0.070 ppm. Original designations were finalized on August 3, 2018.

On December 14, 2012, the U.S. EPA established a new national annual primary $PM_{2.5}$ standard of 12.0 $\mu g/m^3$. New area designations reflecting this revised standard became final in December 2014. The current designation map reflects the most recently revised (2012) annual average standard of 12.0 $\mu g/m^3$ as well as the 24-hour standard of 35 $\mu g/m^3$, revised in 2006.

On January 22, 2010, the U.S. EPA established a new national 1-hour NO_2 standard of 100 parts per billion (ppb) and retained the annual average standard of 53 ppb. Designations for the primary NO_2 standard became effective on February 29, 2012. All areas of California meet this standard.

Sulfur Dioxide (SO_2). The U.S. EPA uses three categories to designate areas with respect to the 24-hour and annual average sulfur dioxide standards. These designation categories are:

- Nonattainment,
- Unclassifiable, and
- Attainment/Unclassifiable.

On June 2, 2010, the U.S. EPA established a new primary 1-hour SO_2 standard of 75 parts per billion (ppb). At the same time, U.S. EPA revoked the 24-hour and annual average standards. Area designations for the 1-hour SO_2 standard were finalized on December 21, 2017 and are reflected in the area designations map.

Lead (particulate). The U.S. EPA promulgated a new rolling 3-month average lead standard in October 2008 of 0.15 μg/m^3. Designations were made for this standard in November 2010.

Designation Areas

From time to time, the boundaries of the California air basins have been changed to facilitate the planning process. CARB generally initiates these changes, and they are not always reflected in the U.S. EPA's area designations. For purposes of consistency, the maps in this attachment reflect area designation boundaries and nomenclature as promulgated by the U.S. EPA. In some cases, these may not be the same as those adopted by CARB. For example, the national area designations reflect the former Southeast Desert Air Basin. In accordance with Health and Safety Code section 39606.1, CARB redefined this area in 1996 to be the Mojave Desert Air Basin and Salton Sea Air Basin. The definitions and boundaries for all areas designated for the national standards can be found in Title 40, Code of Federal Regulations (CFR), Chapter I, Subchapter C, Part 81.305. They are available on the web at:

https://ecfr.io/Title-40/se40.20.81_1305

FIGURE 11

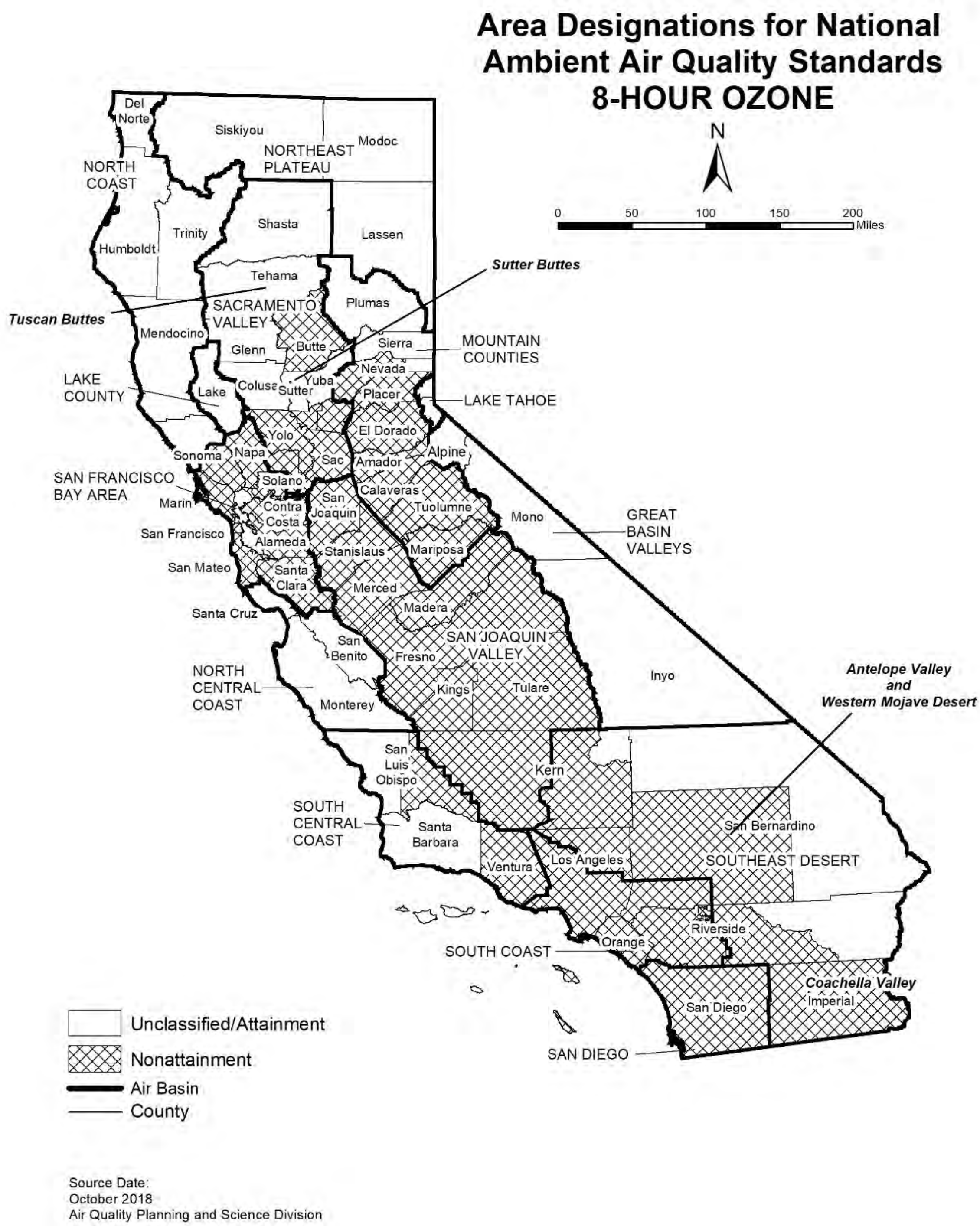

Area Designations for National Ambient Air Quality Standards
8-HOUR OZONE
N
0 50 100 150 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Trinity
Shasta
Lassen
Humboldt
Tehama
Sutter Buttes
Tuscan Buttes
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
Nevada
LAKE COUNTY
Colusa
Yuba
Sutter
Lake
Placer
LAKE TAHOE
Yolo
El Dorado
Sonoma
Napa
Alpine
Sac
Amador
SAN FRANCISCO BAY AREA
Solano
Marin
San Joaquin
Calaveras
Contra Costa
Tuolumne
Mono
GREAT BASIN VALLEYS
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Santa Cruz
Madera
San Benito
SAN JOAQUIN VALLEY
Fresno
NORTH CENTRAL COAST
Kings
Tulare
Inyo
Antelope Valley and Western Mojave Desert
Monterey
San Luis Obispo
Kern
SOUTH CENTRAL COAST
Santa Barbara
San Bernardino
Ventura
Los Angeles
SOUTHEAST DESERT
Riverside
Orange
SOUTH COAST
Coachella Valley
San Diego
Imperial
SAN DIEGO
Unclassified/Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 11

National Ambient Air Quality Standards
Area Designations for 8-Hour Ozone*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SACRAMENTO VALLEY AIR BASIN (cont.)		
LAKE COUNTY AIR BASIN		X	Yolo County (2)	X	
LAKE TAHOE AIR BASIN		X	Yuba County		X
MOUNTAIN COUNTIES AIR BASIN			SAN DIEGO COUNTY	X	
Amador County	X		SAN FRANCISCO BAY AREA AIR BASIN	X	
Calaveras County	X		SAN JOAQUIN VALLEY AIR BASIN	X	
El Dorado County (portion) (2)	X		SOUTH CENTRAL COAST AIR BASIN (1)		
Mariposa County	X		San Luis Obispo County		
Nevada County			- Eastern San Luis Obispo County	X	
- Western Nevada County	X		- Remainder of County		X
- Remainder of County		X	Santa Barbara County		X
Placer County (portion) (2)	X		Ventura County		
Plumas County		X	- Area excluding Anacapa and San Nicolas Islands	X	
Sierra County		X	- Channel Islands (1)		X
Tuolumne County	X		SOUTH COAST AIR BASIN (1)	X	
NORTH CENTRAL COAST AIR BASIN		X	SOUTHEAST DESERT AIR BASIN		
NORTH COAST AIR BASIN		X	Kern County (portion)	X	
NORTHEAST PLATEAU AIR BASIN		X	- Indian Wells Valley		X
SACRAMENTO VALLEY AIR BASIN			Imperial County	X	
Butte County	X		Los Angeles County (portion)	X	
Colusa County		X	Riverside County (portion)		
Glenn County		X	- Coachella Valley	X	
Sacramento Metro Area (2)	X		- Non-AQMA portion		X
Shasta County		X	San Bernardino County		
Sutter County			- Western portion (AQMA)	X	
- Sutter Buttes	X		- Eastern portion (non-AQMA)		X
- Southern portion of Sutter County (2)	X				
- Remainder of Sutter County		X			
Tehama County					
- Tuscan Buttes	X				
- Remainder of Tehama County		X			

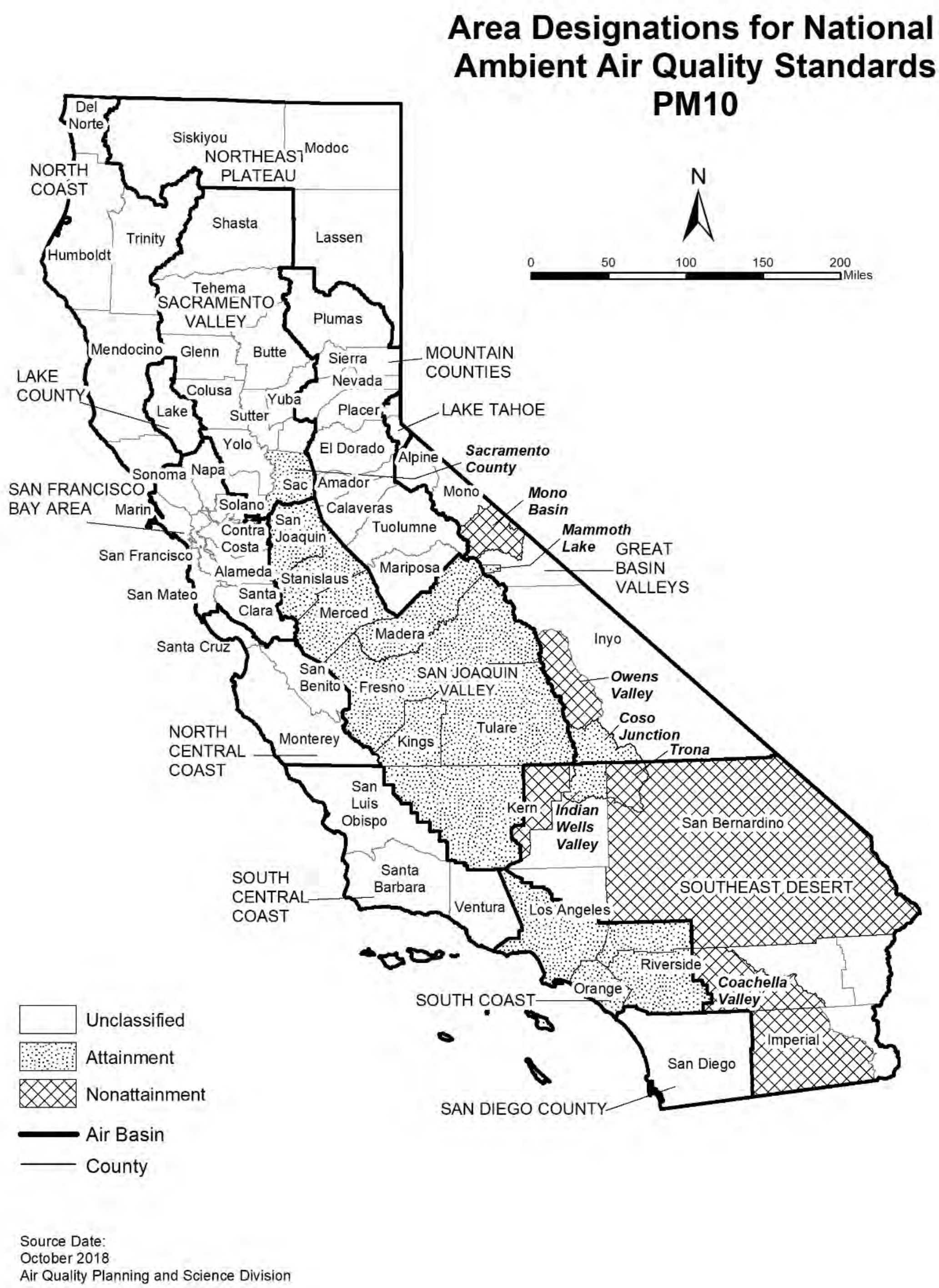
* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305.

NOTE: This map and table reflect the 2015 8-hour ozone standard of 0.070 ppm.

(1) South Central Coast Air Basin Channel Islands:
Santa Barbara County includes Santa Cruz, San Miguel, Santa Rosa, and Santa Barbara Islands.
Ventura County includes Anacapa and San Nicolas Islands.
South Coast Air Basin:
Los Angeles County includes San Clemente and Santa Catalina Islands.

(2) For this purpose, the Sacramento Metro Area comprises all of Sacramento and Yolo Counties, the Sacramento Valley Air Basin portion of Solano County, the southern portion of Sutter County, and the Sacramento Valley and Mountain Counties Air Basins portions of Placer and El Dorado counties.

FIGURE 12



Area Designations for National Ambient Air Quality Standards PM10
N
0 50 100 150 200 Miles
Del Norte
Siskiyou
NORTHEAST PLATEAU
Modoc
NORTH COAST
Shasta
Lassen
Trinity
Humboldt
Tehema
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
Nevada
MOUNTAIN COUNTIES
LAKE COUNTY
Colusa
Yuba
Lake
Sutter
Placer
LAKE TAHOE
Yolo
El Dorado
Alpine
Sacramento County
Sonoma
Napa
Sac
Amador
SAN FRANCISCO BAY AREA
Marin
Solano
Mono
Mono Basin
Calaveras
San Joaquin
Contra Costa
Tuolumne
Mammoth Lake
GREAT BASIN VALLEYS
San Francisco
Alameda
Mariposa
Stanislaus
San Mateo
Santa Clara
Merced
Madera
Inyo
Santa Cruz
San Benito
Fresno
SAN JOAQUIN VALLEY
Owens Valley
Tulare
Coso Junction
NORTH CENTRAL COAST
Monterey
Kings
Trona
San Luis Obispo
Kern
Indian Wells Valley
San Bernardino
SOUTH CENTRAL COAST
Santa Barbara
SOUTHEAST DESERT
Ventura
Los Angeles
Riverside
Coachella Valley
SOUTH COAST
Orange
Imperial
San Diego
SAN DIEGO COUNTY
Unclassified
Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 12

National Ambient Air Quality Standards
Area Designations for Suspended Particulate Matter (PM10)*

	N	U	A		N	U	A
GREAT BASIN VALLEYS AIR BASIN				SAN DIEGO COUNTY		X	
Alpine County		X		SAN FRANCISCO BAY AREA AIR BASIN		X	
Inyo County				SAN JOAQUIN VALLEY AIR BASIN			X
- Owens Valley Planning Area	X			SOUTH CENTRAL COAST AIR BASIN		X	
- Coso Junction			X	SOUTH COAST AIR BASIN			X
- Remainder of County		X		SOUTHEAST DESERT AIR BASIN			
Mono County				Eastern Kern County			
- Mammoth Lake Planning Area			X	- Indian Wells Valley			X
- Mono Lake Basin	X			- Portion within San Joaquin Valley Planning Area	X		
- Remainder of County		X		- Remainder of County		X	
LAKE COUNTY AIR BASIN		X		Imperial County			
LAKE TAHOE AIR BASIN		X		- Imperial Valley Planning Area	X		
MOUNTAIN COUNTIES AIR BASIN				- Remainder of County		X	
Placer County (portion) (2)		X		Los Angeles County (portion)		X	
Remainder of Air Basin		X		Riverside County (portion)			
NORTH CENTRAL COAST AIR BASIN		X		- Coachella Valley (3)	X		
NORTH COAST AIR BASIN		X		- Non-AQMA portion		X	
NORTHEAST PLATEAU AIR BASIN		X		San Bernardino County			
SACRAMENTO VALLEY AIR BASIN				- Trona	X		
Butte County		X		- Remainder of County	X		
Colusa County		X					
Glenn County		X					
Placer County (portion) (2)		X					
Sacramento County (1)			X				
Shasta County		X					
Solano County (portion)		X					
Sutter County		X					
Tehama County		X					
Yolo County		X					
Yuba County		X					

* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305.
(1) Air quality in Sacramento County meets the national PM10 standards. The request for redesignation to attainment was approved by U.S. EPA in September 2013.
(2) U.S. EPA designation puts the Sacramento Valley Air Basin portion of Placer County in the Mountain Counties Air Basin.
(3) Air quality in Coachella Valley meets the national PM10 standards. A request for redesignation to attainment has been submitted to U.S. EPA.

FIGURE 13


Area Designations for National Ambient Air Quality Standards PM2.5
N
0
50
100
150
200
Miles
NORTH COAST
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
Humboldt
Trinity
Shasta
Lassen
Tehama
SACRAMENTO VALLEY
Plumas
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
Mendocino
Nevada
LAKE COUNTY
Colusa
Yuba
Placer
Lake
Sutter
LAKE TAHOE
Yolo
El Dorado
Sonoma
Napa
Sacramento
Alpine
Amador
Solano
Calaveras
GREAT BASIN VALLEYS
SAN FRANCISCO BAY AREA
Marin
Tuolumne
Contra Costa
San Joaquin
Mono
Alameda
Stanislaus
Mariposa
San Mateo
Merced
Santa Clara
Madera
Santa Cruz
Fresno
NORTH CENTRAL COAST
San Benito
SAN JOAQUIN VALLEY
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
San Bernardino
SOUTH CENTRAL COAST
Santa Barbara
SOUTHEAST DESERT
Ventura
Los Angeles
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
Unclassified/Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 13

National Ambient Air Quality Standards
Area Designations for Fine Particulate Matter (PM2.5)*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SAN DIEGO COUNTY		X
LAKE COUNTY AIR BASIN		X	SAN FRANCISCO BAY AREA AIR BASIN (2)	X	
LAKE TAHOE AIR BASIN		X	SAN JOAQUIN VALLEY AIR BASIN	X	
MOUNTAIN COUNTIES AIR BASIN			SOUTH CENTRAL COAST AIR BASIN		X
Plumas County			SOUTH COAST AIR BASIN (3)	X	
- Portola Valley Portion of Plumas	X		SOUTHEAST DESERT AIR BASIN		
- Remainder of Plumas County		X	Imperial County (portion) (4)	X	
Remainder of Air Basin		X	Remainder of Air Basin		X
NORTH CENTRAL COAST AIR BASIN		X			
NORTH COAST AIR BASIN		X			
NORTHEAST PLATEAU AIR BASIN		X			
SACRAMENTO VALLEY AIR BASIN					
Sacramento Metro Area (1)	X				
Sutter County		X			
Yuba County (portion)		X			
Remainder of Air Basin		X			

* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305. This map reflects the 2006 24-hour PM2.5 standard as well as the 1997 and 2012 PM2.5 annual standards.

(1) For this purpose, Sacramento Metro Area comprises all of Sacramento and portions of El Dorado, Placer, Solano, and Yolo Counties. Air quality in this area meets the national PM2.5 standards. A Determination of Attainment for the 2006 24-hour PM2.5 standard was made by U.S. EPA in June 2017.

(2) Air quality in this area meets the national PM2.5 standards. A Determination of Attainment for the 2006 24-hour PM2.5 standard was made by U.S. EPA in June 2017.

(3) Those lands of the Santa Rosa Band of Cahulla Mission Indians in Riverside County are designated Unclassifiable/Attainment.

(4) That portion of Imperial County encompassing the urban and surrounding areas of Brawley, Calexico, El Centro, Heber, Holtville, Imperial, Seeley, and Westmorland. Air quality in this area meets the national PM2.5 standards. A Determination of Attainment for the 2006 24-hour PM2.5 standard was made by U.S. EPA in June 2017.

FIGURE 14

Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 14

National Ambient Air Quality Standards
Area Designations for Carbon Monoxide*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SACRAMENTO VALLEY AIR BASIN		X
LAKE COUNTY AIR BASIN		X	SAN DIEGO COUNTY		X
LAKE TAHOE AIR BASIN		X	SAN FRANCISCO BAY AREA AIR BASIN		X
MOUNTAIN COUNTIES AIR BASIN		X	SAN JOAQUIN VALLEY AIR BASIN		X
NORTH CENTRAL COAST AIR BASIN		X	SOUTH CENTRAL COAST AIR BASIN		X
NORTH COAST AIR BASIN		X	SOUTH COAST AIR BASIN		X
NORTHEAST PLATEAU AIR BASIN		X	SOUTHEAST DESERT AIR BASIN		X

* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305.

FIGURE 15

Source Date:
October 2018
Air Quality Planning and Science Division

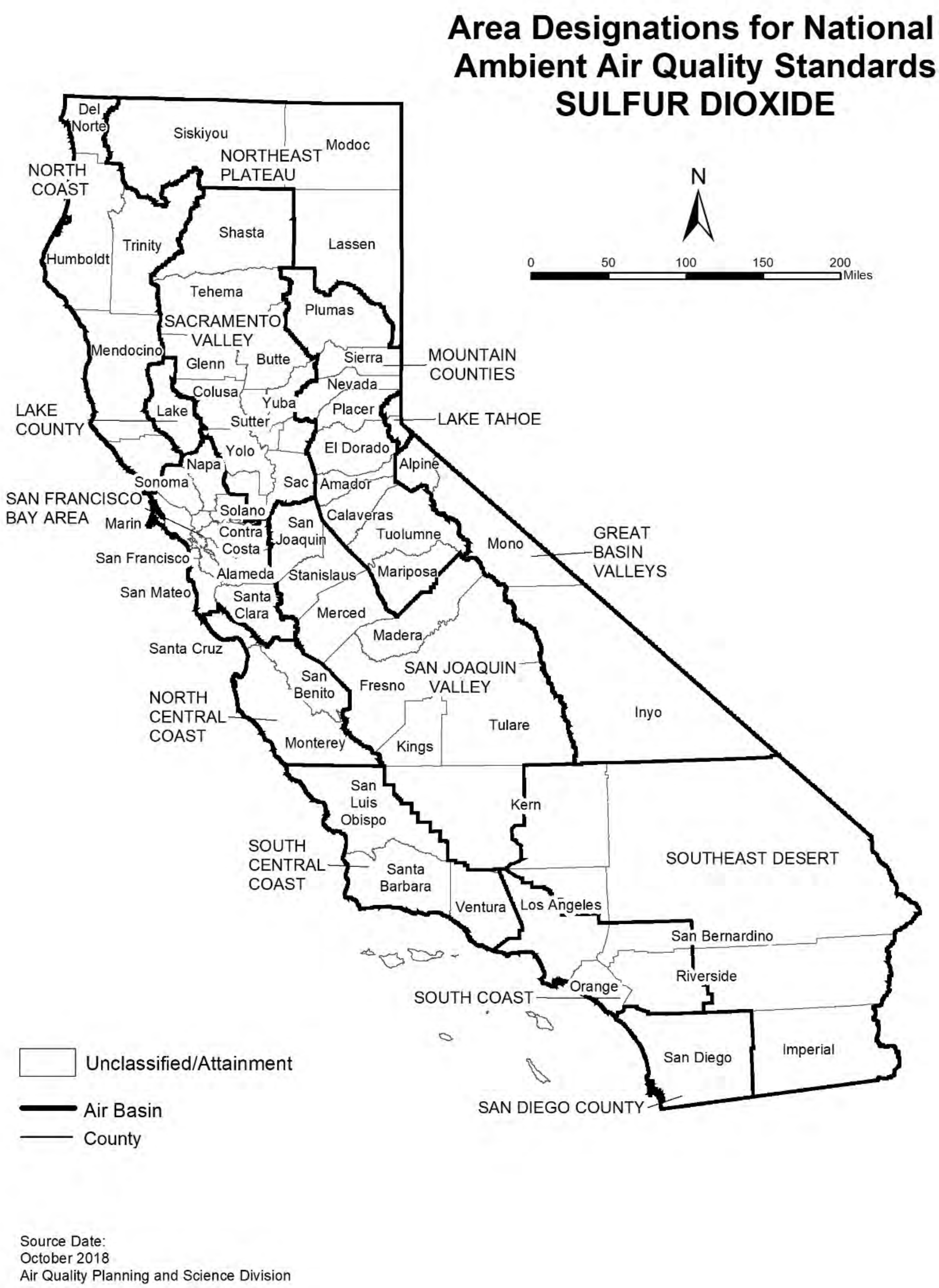
TABLE 15

National Ambient Air Quality Standards
Area Designations for Nitrogen Dioxide*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SACRAMENTO VALLEY AIR BASIN		X
LAKE COUNTY AIR BASIN		X	SAN DIEGO COUNTY		X
LAKE TAHOE AIR BASIN		X	SAN FRANCISCO BAY AREA AIR BASIN		X
MOUNTAIN COUNTIES AIR BASIN		X	SAN JOAQUIN VALLEY AIR BASIN		X
NORTH CENTRAL COAST AIR BASIN		X	SOUTH CENTRAL COAST AIR BASIN		X
NORTH COAST AIR BASIN		X	SOUTH COAST AIR BASIN		X
NORTHEAST PLATEAU AIR BASIN		X	SOUTHEAST DESERT AIR BASIN		X

* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305.

FIGURE 16



Area Designations for National Ambient Air Quality Standards
SULFUR DIOXIDE
N
0
50
100
150
200
Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Shasta
Lassen
Trinity
Humboldt
Tehema
Plumas
SACRAMENTO VALLEY
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
Colusa
Nevada
Yuba
LAKE COUNTY
Lake
Sutter
Placer
LAKE TAHOE
Yolo
El Dorado
Napa
Alpine
Sonoma
Sac
Amador
SAN FRANCISCO BAY AREA
Solano
Marin
Calaveras
Contra Costa
San Joaquin
Tuolumne
Mono
GREAT BASIN VALLEYS
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
SAN JOAQUIN VALLEY
San Benito
Fresno
NORTH CENTRAL COAST
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
SOUTH CENTRAL COAST
SOUTHEAST DESERT
Santa Barbara
Ventura
Los Angeles
San Bernardino
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
Unclassified/Attainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 16

National Ambient Air Quality Standards
Area Designations for Sulfur Dioxide*

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SOUTH CENTRAL COAST AIR BASIN		
LAKE COUNTY AIR BASIN		X	San Luis Obispo County		X
LAKE TAHOE AIR BASIN		X	Santa Barbara County		X
MOUNTAIN COUNTIES AIR BASIN		X	Ventura County		X
NORTH CENTRAL COAST AIR BASIN		X	Channel Islands (1)		X
NORTH COAST AIR BASIN		X	SOUTH COAST AIR BASIN		X
NORTHEAST PLATEAU AIR BASIN		X	SOUTHEAST DESERT AIR BASIN		
SACRAMENTO VALLEY AIR BASIN		X	Imperial County		X
SAN DIEGO COUNTY		X	Remainder of Air Basin		X
SAN FRANCISCO BAY AREA AIR BASIN		X			
SAN JOAQUIN VALLEY AIR BASIN					
Fresno County		X			
Kern County (portion)		X			
Kings County		X			
Madera County		X			
Merced County		X			
San Joaquin County		X			
Stanislaus County		X			
Tulare County		X			

* Definitions and references for all areas can be found in 40 CFR, Chapter I, Part 81.305.

NOTE: This map and table reflect the 2010 1-hour SO_2 standard of 75 ppb.

(1) South Central Coast Air Basin Channel Islands:

Santa Barbara County includes Santa Cruz, San Miguel, Santa Rosa, and Santa Barbara Islands.

Ventura County includes Anacapa and San Nicolas Islands.

Note that the San Clemente and Santa Catalina Islands are considered part of Los Angeles County, and therefore, are included as part of the South Coast Air Basin.

FIGURE 17


Area Designations for National Ambient Air Quality Standards
LEAD
N
0 50 100 150 200 Miles
Del Norte
Siskiyou
Modoc
NORTHEAST PLATEAU
NORTH COAST
Trinity
Shasta
Lassen
Humboldt
Tehama
SACRAMENTO VALLEY
Plumas
Mendocino
Glenn
Butte
Sierra
MOUNTAIN COUNTIES
Nevada
Colusa
Lake
Sutter
Yuba
Placer
LAKE TAHOE
LAKE COUNTY
El Dorado
Yolo
Napa
Alpine
Sonoma
Sac
Amador
SAN FRANCISCO BAY AREA
Solano
Marin
Calaveras
Contra Costa
San Joaquin
Tuolumne
Mono
GREAT BASIN VALLEYS
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Santa Cruz
Madera
San Benito
SAN JOAQUIN VALLEY
Fresno
NORTH CENTRAL COAST
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
SOUTH CENTRAL COAST
SOUTHEAST DESERT
Santa Barbara
Ventura
Los Angeles
San Bernardino
Riverside
Orange
SOUTH COAST
San Diego
Imperial
SAN DIEGO COUNTY
Unclassified/Attainment
Nonattainment
Air Basin
County
Source Date:
October 2018
Air Quality Planning and Science Division

TABLE 17

National Ambient Air Quality Standards
Area Designations for Lead (particulate)

	N	U/A		N	U/A
GREAT BASIN VALLEYS AIR BASIN		X	SAN DIEGO COUNTY		X
LAKE COUNTY AIR BASIN		X	SAN FRANCISCO BAY AREA AIR BASIN		X
LAKE TAHOE AIR BASIN		X	SAN JOAQUIN VALLEY AIR BASIN		X
MOUNTAIN COUNTIES AIR BASIN		X	SOUTH CENTRAL COAST AIR BASIN		X
NORTH CENTRAL COAST AIR BASIN		X	SOUTH COAST AIR BASIN		
NORTH COAST AIR BASIN		X	Los Angeles County (portion) (1)	X	
NORTHEAST PLATEAU AIR BASIN		X	Remainder of Air Basin		X
SACRAMENTO VALLEY AIR BASIN		X	SOUTHEAST DESERT AIR BASIN		X

(1) Portion of County in Air Basin, not including Channel Islands

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APPENDIX 3.1:

CONSTRUCTION CALEEMOD OUTPUTS

14410 Orchard Logistics Center Construction Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14410 Orchard Logistics Center Construction
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	25.8
Location	33.93154051041351, -116.99695467872836
County	Riverside-South Coast
City	Beaumont
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5625
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Refrigerated Warehouse-No Rail	61.0	1000sqft	1.40	61,000	0.00	—	—	—
Unrefrigerated Warehouse-No Rail	549	1000sqft	12.6	549,000	201,915	—	—	—

Other Asphalt Surfaces	12.3	Acre	12.3	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-13	Use Low-VOC Paints for Construction

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.	5.50	101	44.3	42.5	0.07	2.29	64.0	65.2	2.11	9.72	10.8	—	9,107	9,107	0.35	0.36	18.4	9,241
Mit.	5.50	52.8	44.3	42.5	0.07	2.29	64.0	65.2	2.11	9.72	10.8	—	9,107	9,107	0.35	0.36	18.4	9,241
% Reduced	—	48%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.13	101	41.6	38.9	0.07	1.96	3.72	5.01	1.81	1.07	2.88	—	8,894	8,894	0.36	0.36	0.51	9,011
Mit.	5.13	52.8	41.6	38.9	0.07	1.96	3.72	5.01	1.81	1.07	2.88	—	8,894	8,894	0.36	0.36	0.51	9,011
% Reduced	—	48%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.95	18.0	14.9	18.0	0.02	0.69	6.56	7.26	0.64	1.28	1.92	—	4,135	4,135	0.16	0.17	3.64	4,195

Mit.	1.95	10.0	14.9	18.0	0.02	0.69	6.56	7.26	0.64	1.28	1.92	—	4,135	4,135	0.16	0.17	3.64	4,195
% Reduced	—	44%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	3.28	2.72	3.29	< 0.005	0.13	1.20	1.32	0.12	0.23	0.35	—	685	685	0.03	0.03	0.60	694
Mit.	0.36	1.83	2.72	3.29	< 0.005	0.13	1.20	1.32	0.12	0.23	0.35	—	685	685	0.03	0.03	0.60	694
% Reduced	—	44%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.50	4.63	44.3	36.9	0.07	2.29	64.0	65.2	2.11	9.72	10.8	—	7,449	7,449	0.29	0.13	2.48	7,498
2024	3.98	101	21.9	42.5	0.05	0.84	3.72	4.56	0.78	0.89	1.66	—	9,107	9,107	0.35	0.36	18.4	9,241
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.13	4.31	41.6	38.9	0.07	1.96	3.72	5.01	1.81	1.07	2.88	—	8,894	8,894	0.36	0.36	0.51	9,011
2024	3.90	101	22.2	37.3	0.05	0.84	3.72	4.56	0.78	0.89	1.66	—	8,809	8,809	0.36	0.36	0.48	8,926
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.95	1.64	14.9	14.2	0.02	0.69	6.56	7.26	0.64	1.28	1.92	—	2,826	2,826	0.11	0.07	1.08	2,851
2024	1.84	18.0	10.7	18.0	0.02	0.41	1.65	2.07	0.38	0.39	0.78	—	4,135	4,135	0.16	0.17	3.64	4,195
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.36	0.30	2.72	2.60	< 0.005	0.13	1.20	1.32	0.12	0.23	0.35	—	468	468	0.02	0.01	0.18	472
2024	0.34	3.28	1.95	3.29	< 0.005	0.08	0.30	0.38	0.07	0.07	0.14	—	685	685	0.03	0.03	0.60	694

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.50	4.63	44.3	36.9	0.07	2.29	64.0	65.2	2.11	9.72	10.8	—	7,449	7,449	0.29	0.13	2.48	7,498
2024	3.98	52.8	21.9	42.5	0.05	0.84	3.72	4.56	0.78	0.89	1.66	—	9,107	9,107	0.35	0.36	18.4	9,241
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.13	4.31	41.6	38.9	0.07	1.96	3.72	5.01	1.81	1.07	2.88	—	8,894	8,894	0.36	0.36	0.51	9,011
2024	3.90	52.8	22.2	37.3	0.05	0.84	3.72	4.56	0.78	0.89	1.66	—	8,809	8,809	0.36	0.36	0.48	8,926
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.95	1.64	14.9	14.2	0.02	0.69	6.56	7.26	0.64	1.28	1.92	—	2,826	2,826	0.11	0.07	1.08	2,851
2024	1.84	10.0	10.7	18.0	0.02	0.41	1.65	2.07	0.38	0.39	0.78	—	4,135	4,135	0.16	0.17	3.64	4,195
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.36	0.30	2.72	2.60	< 0.005	0.13	1.20	1.32	0.12	0.23	0.35	—	468	468	0.02	0.01	0.18	472
2024	0.34	1.83	1.95	3.29	< 0.005	0.08	0.30	0.38	0.07	0.07	0.14	—	685	685	0.03	0.03	0.60	694

3. Construction Emissions Details

3.1. Demolition (2023) - 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	3.39	2.84	27.3	23.5	0.03	1.20	—	1.20	1.10	—	1.10	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	63.7	63.7	—	9.64	9.64	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.23	2.25	1.93	< 0.005	0.10	—	0.10	0.09	—	0.09	—	282	282	0.01	< 0.005	—	282
Demolition	—	—	—	—	—	—	5.23	5.23	—	0.79	0.79	—	—	—	—	—	—	—
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	0.05	0.04	0.41	0.35	< 0.005	0.02	—	0.02	0.02	—	0.02	—	46.6	46.6	< 0.005	< 0.005	—	46.8
Demolition	—	—	—	—	—	—	0.95	0.95	—	0.14	0.14	—	—	—	—	—	—	—
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	0.09	0.08	0.08	1.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	220	220	0.01	0.01	0.94	224
Vendor	0.01	0.01	0.26	0.08	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	220	220	< 0.005	0.03	0.61	230

Hauling	0.01	< 0.005	0.33	0.08	< 0.005	0.01	0.02	0.02	0.01	0.01	0.01	—	284	284	0.01	0.05	0.60	298
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.1	18.1	< 0.005	< 0.005	0.02	18.9
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.79	2.79	< 0.005	< 0.005	0.01	2.83
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.99	2.99	< 0.005	< 0.005	< 0.005	3.13
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	< 0.005	4.05

3.2. Demolition (2023) - 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	3.39	2.84	27.3	23.5	0.03	1.20	—	1.20	1.10	—	1.10	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	63.7	63.7	—	9.64	9.64	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.23	2.25	1.93	< 0.005	0.10	—	0.10	0.09	—	0.09	—	282	282	0.01	< 0.005	—	282
Demolition	—	—	—	—	—	—	5.23	5.23	—	0.79	0.79	—	—	—	—	—	—	—
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	0.05	0.04	0.41	0.35	< 0.005	0.02	—	0.02	0.02	—	0.02	—	46.6	46.6	< 0.005	< 0.005	—	46.8
Demolition	—	—	—	—	—	—	0.95	0.95	—	0.14	0.14	—	—	—	—	—	—	—
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	0.09	0.08	0.08	1.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	220	220	0.01	0.01	0.94	224
Vendor	0.01	0.01	0.26	0.08	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	220	220	< 0.005	0.03	0.61	230
Hauling	0.01	< 0.005	0.33	0.08	< 0.005	0.01	0.02	0.02	0.01	0.01	0.01	—	284	284	0.01	0.05	0.60	298
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.1	18.1	< 0.005	< 0.005	0.02	18.9
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.79	2.79	< 0.005	< 0.005	0.01	2.83

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.99	2.99	< 0.005	< 0.005	< 0.005	3.13
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	< 0.005	4.05

3.3. Site Preparation (2023) - 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	5.40	4.54	43.9	35.4	0.05	2.29	—	2.29	2.11	—	2.11	—	5,181	5,181	0.21	0.04	—	5,199
Dust From Material Movement	—	—	—	—	—	—	5.52	5.52	—	2.67	2.67	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	3.61	2.91	< 0.005	0.19	—	0.19	0.17	—	0.17	—	426	426	0.02	< 0.005	—	427
Dust From Material Movement	—	—	—	—	—	—	0.45	0.45	—	0.22	0.22	—	—	—	—	—	—	—
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	0.08	0.07	0.66	0.53	< 0.005	0.03	—	0.03	0.03	—	0.03	—	70.5	70.5	< 0.005	< 0.005	—	70.7
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
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	0.09	0.08	0.08	1.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	220	220	0.01	0.01	0.94	224
Vendor	0.01	0.01	0.26	0.08	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	220	220	< 0.005	0.03	0.61	230
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.1	18.1	< 0.005	< 0.005	0.02	18.9
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.79	2.79	< 0.005	< 0.005	0.01	2.83
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.99	2.99	< 0.005	< 0.005	< 0.005	3.13
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 (2023) - 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	5.40	4.54	43.9	35.4	0.05	2.29	—	2.29	2.11	—	2.11	—	5,181	5,181	0.21	0.04	—	5,199
Dust From Material Movement	—	—	—	—	—	—	5.52	5.52	—	2.67	2.67	—	—	—	—	—	—	—
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	3.61	2.91	< 0.005	0.19	—	0.19	0.17	—	0.17	—	426	426	0.02	< 0.005	—	427
Dust From Material Movement	—	—	—	—	—	—	0.45	0.45	—	0.22	0.22	—	—	—	—	—	—	—
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	0.08	0.07	0.66	0.53	< 0.005	0.03	—	0.03	0.03	—	0.03	—	70.5	70.5	< 0.005	< 0.005	—	70.7
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
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	0.09	0.08	0.08	1.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	220	220	0.01	0.01	0.94	224
Vendor	0.01	0.01	0.26	0.08	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	220	220	< 0.005	0.03	0.61	230
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.1	18.1	< 0.005	< 0.005	0.02	18.9
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.79	2.79	< 0.005	< 0.005	0.01	2.83
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.99	2.99	< 0.005	< 0.005	< 0.005	3.13
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 (2023) - 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	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	6,715	6,715	0.27	0.05	—	6,738

Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
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	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
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	0.82	0.69	6.73	5.37	0.01	0.32	—	0.32	0.30	—	0.30	—	1,104	1,104	0.04	0.01	—	1,108
Dust From Material Movement	—	—	—	—	—	—	0.44	0.44	—	0.16	0.16	—	—	—	—	—	—	—
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	0.15	0.13	1.23	0.98	< 0.005	0.06	—	0.06	0.05	—	0.05	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.81	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	294	294	0.01	0.01	1.26	298
Vendor	0.02	0.01	0.51	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	440	440	0.01	0.07	1.22	461
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	0.11	0.10	0.12	1.37	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	270	270	0.01	0.01	0.03	273
Vendor	0.02	0.01	0.54	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	440	440	0.01	0.07	0.03	460
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	0.24	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	44.9	44.9	< 0.005	< 0.005	0.09	45.6
Vendor	< 0.005	< 0.005	0.09	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	72.3	72.3	< 0.005	0.01	0.09	75.6
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	< 0.005	< 0.005	0.00	0.00	0.00	—	7.44	7.44	< 0.005	< 0.005	0.01	7.55
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
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

3.6. Grading (2023) - 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	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
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	5.00	4.20	40.9	32.7	0.06	1.96	—	1.96	1.80	—	1.80	—	6,715	6,715	0.27	0.05	—	6,738
Dust From Material Movement	—	—	—	—	—	—	2.67	2.67	—	0.98	0.98	—	—	—	—	—	—	—
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	0.82	0.69	6.73	5.37	0.01	0.32	—	0.32	0.30	—	0.30	—	1,104	1,104	0.04	0.01	—	1,108
Dust From Material Movement	—	—	—	—	—	—	0.44	0.44	—	0.16	0.16	—	—	—	—	—	—	—
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	0.15	0.13	1.23	0.98	< 0.005	0.06	—	0.06	0.05	—	0.05	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.81	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	294	294	0.01	0.01	1.26	298
Vendor	0.02	0.01	0.51	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	440	440	0.01	0.07	1.22	461
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	0.11	0.10	0.12	1.37	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	270	270	0.01	0.01	0.03	273
Vendor	0.02	0.01	0.54	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	440	440	0.01	0.07	0.03	460
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	0.24	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	44.9	44.9	< 0.005	< 0.005	0.09	45.6
Vendor	< 0.005	< 0.005	0.09	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	72.3	72.3	< 0.005	0.01	0.09	75.6
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	< 0.005	< 0.005	0.00	0.00	0.00	—	7.44	7.44	< 0.005	< 0.005	0.01	7.55
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
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

3.7. Building Construction (2023) - 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	2.58	2.16	20.1	20.7	0.04	0.91	—	0.91	0.83	—	0.83	—	4,084	4,084	0.17	0.03	—	4,098
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	0.23	0.19	1.81	1.87	< 0.005	0.08	—	0.08	0.07	—	0.07	—	368	368	0.01	< 0.005	—	369
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	0.04	0.04	0.33	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60.9	60.9	< 0.005	< 0.005	—	61.1
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	1.43	1.30	1.57	17.6	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,458	3,458	0.17	0.13	0.42	3,501
Vendor	0.07	0.04	1.65	0.50	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,351	1,351	0.03	0.20	0.10	1,412
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	0.12	0.14	1.66	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	315	315	0.01	0.01	0.63	320
Vendor	0.01	< 0.005	0.15	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	122	122	< 0.005	0.02	0.15	127
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	0.03	0.30	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	52.2	52.2	< 0.005	< 0.005	0.10	52.9
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	20.1	20.1	< 0.005	< 0.005	0.02	21.1
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 (2023) - 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	2.58	2.16	20.1	20.7	0.04	0.91	—	0.91	0.83	—	0.83	—	4,084	4,084	0.17	0.03	—	4,098
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	0.23	0.19	1.81	1.87	< 0.005	0.08	—	0.08	0.07	—	0.07	—	368	368	0.01	< 0.005	—	369
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	0.04	0.04	0.33	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60.9	60.9	< 0.005	< 0.005	—	61.1

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	1.43	1.30	1.57	17.6	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,458	3,458	0.17	0.13	0.42	3,501
Vendor	0.07	0.04	1.65	0.50	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,351	1,351	0.03	0.20	0.10	1,412
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	0.12	0.14	1.66	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	315	315	0.01	0.01	0.63	320
Vendor	0.01	< 0.005	0.15	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	122	122	< 0.005	0.02	0.15	127
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	0.03	0.30	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	52.2	52.2	< 0.005	< 0.005	0.10	52.9
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	20.1	20.1	< 0.005	< 0.005	0.02	21.1
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 (2024) - 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	2.48	2.07	19.1	20.6	0.04	0.82	—	0.82	0.76	—	0.76	—	4,084	4,084	0.17	0.03	—	4,098
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	2.48	2.07	19.1	20.6	0.04	0.82	—	0.82	0.76	—	0.76	—	4,084	4,084	0.17	0.03	—	4,098
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	1.00	0.83	7.72	8.31	0.02	0.33	—	0.33	0.31	—	0.31	—	1,647	1,647	0.07	0.01	—	1,652
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	0.18	0.15	1.41	1.52	< 0.005	0.06	—	0.06	0.06	—	0.06	—	273	273	0.01	< 0.005	—	274
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	1.44	1.31	1.24	21.4	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,688	3,688	0.16	0.13	14.6	3,744
Vendor	0.06	0.04	1.51	0.47	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,335	1,335	0.03	0.20	3.76	1,399
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	1.37	1.23	1.46	16.2	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,389	3,389	0.16	0.13	0.38	3,431

Vendor	0.06	0.04	1.58	0.48	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,336	1,336	0.03	0.20	0.10	1,397
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	0.55	0.50	0.59	6.86	0.00	0.00	0.08	0.08	0.00	0.00	0.00	—	1,384	1,384	0.06	0.05	2.55	1,403
Vendor	0.02	0.02	0.64	0.19	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	538	538	0.01	0.08	0.65	563
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	0.10	0.09	0.11	1.25	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	229	229	0.01	0.01	0.42	232
Vendor	< 0.005	< 0.005	0.12	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	89.1	89.1	< 0.005	0.01	0.11	93.3
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 (2024) - 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	2.48	2.07	19.1	20.6	0.04	0.82	—	0.82	0.76	—	0.76	—	4,084	4,084	0.17	0.03	—	4,098
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	2.48	2.07	19.1	20.6	0.04	0.82	—	0.82	0.76	—	0.76	—	4,084	4,084	0.17	0.03	—	4,098
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	1.00	0.83	7.72	8.31	0.02	0.33	—	0.33	0.31	—	0.31	—	1,647	1,647	0.07	0.01	—	1,652
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	0.18	0.15	1.41	1.52	< 0.005	0.06	—	0.06	0.06	—	0.06	—	273	273	0.01	< 0.005	—	274
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	1.44	1.31	1.24	21.4	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,688	3,688	0.16	0.13	14.6	3,744
Vendor	0.06	0.04	1.51	0.47	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,335	1,335	0.03	0.20	3.76	1,399
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	1.37	1.23	1.46	16.2	0.00	0.00	0.21	0.21	0.00	0.00	0.00	—	3,389	3,389	0.16	0.13	0.38	3,431
Vendor	0.06	0.04	1.58	0.48	0.01	0.02	0.08	0.10	0.02	0.03	0.05	—	1,336	1,336	0.03	0.20	0.10	1,397
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	0.55	0.50	0.59	6.86	0.00	0.00	0.08	0.08	0.00	0.00	0.00	—	1,384	1,384	0.06	0.05	2.55	1,403
Vendor	0.02	0.02	0.64	0.19	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	538	538	0.01	0.08	0.65	563
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	0.10	0.09	0.11	1.25	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	229	229	0.01	0.01	0.42	232

Vendor	< 0.005	< 0.005	0.12	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	89.1	89.1	< 0.005	0.01	0.11	93.3
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 (2024) - 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	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.65	< 0.005	0.06	—	0.06	0.06	—	0.06	—	248	248	0.01	< 0.005	—	249
Paving	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.23	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.1	41.1	< 0.005	< 0.005	—	41.3
Paving	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.08	0.07	1.25	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	216	216	0.01	0.01	0.86	219
Vendor	0.02	0.01	0.49	0.15	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	1.22	456
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	0.08	0.07	0.09	0.95	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	198	198	0.01	0.01	0.02	201
Vendor	0.02	0.01	0.52	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	0.03	455
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	0.01	0.01	0.01	0.16	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	33.0	33.0	< 0.005	< 0.005	0.06	33.5
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	71.5	71.5	< 0.005	0.01	0.09	74.8
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	0.03	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	5.47	5.47	< 0.005	< 0.005	0.01	5.55
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4
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

3.12. Paving (2024) - 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	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	—	0.54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.65	< 0.005	0.06	—	0.06	0.06	—	0.06	—	248	248	0.01	< 0.005	—	249
Paving	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.23	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.1	41.1	< 0.005	< 0.005	—	41.3
Paving	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.08	0.08	0.07	1.25	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	216	216	0.01	0.01	0.86	219
Vendor	0.02	0.01	0.49	0.15	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	1.22	456
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	0.08	0.07	0.09	0.95	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	198	198	0.01	0.01	0.02	201
Vendor	0.02	0.01	0.52	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	0.03	455
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	0.01	0.01	0.01	0.16	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	33.0	33.0	< 0.005	< 0.005	0.06	33.5
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	71.5	71.5	< 0.005	0.01	0.09	74.8
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	0.03	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	5.47	5.47	< 0.005	< 0.005	0.01	5.55
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4
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

3.13. Architectural Coating (2024) - 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	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	99.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	99.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.20	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.3	29.3	< 0.005	< 0.005	—	29.4
Architectural Coatings	—	16.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.85	4.85	< 0.005	< 0.005	—	4.86
Architectural Coatings	—	2.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.29	0.26	0.25	4.28	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	738	738	0.03	0.03	2.93	749
Vendor	0.02	0.01	0.49	0.15	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	1.22	456
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	0.27	0.25	0.29	3.23	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	678	678	0.03	0.03	0.08	686
Vendor	0.02	0.01	0.52	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	0.03	455
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	0.04	0.04	0.05	0.56	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	113	113	0.01	< 0.005	0.21	114
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	71.5	71.5	< 0.005	0.01	0.09	74.8
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	0.01	0.01	0.01	0.10	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	18.7	18.7	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4
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 (2024) - 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	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	50.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.22	0.18	1.21	1.53	< 0.005	0.04	—	0.04	0.04	—	0.04	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	50.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.20	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.3	29.3	< 0.005	< 0.005	—	29.4
Architectural Coatings	—	8.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.85	4.85	< 0.005	< 0.005	—	4.86
Architectural Coatings	—	1.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.29	0.26	0.25	4.28	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	738	738	0.03	0.03	2.93	749
Vendor	0.02	0.01	0.49	0.15	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	1.22	456
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	0.27	0.25	0.29	3.23	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	678	678	0.03	0.03	0.08	686
Vendor	0.02	0.01	0.52	0.16	< 0.005	0.01	0.03	0.03	0.01	0.01	0.02	—	435	435	0.01	0.07	0.03	455
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	0.04	0.04	0.05	0.56	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	113	113	0.01	< 0.005	0.21	114
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	71.5	71.5	< 0.005	0.01	0.09	74.8
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	0.01	0.01	0.01	0.10	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	18.7	18.7	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4
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

4.10. 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 ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	6/1/2023	7/12/2023	5.00	30.0	—
Site Preparation	Site Preparation	7/13/2023	8/23/2023	5.00	30.0	—
Grading	Grading	8/24/2023	11/15/2023	5.00	60.0	—
Building Construction	Building Construction	11/16/2023	7/24/2024	5.00	180	—
Paving	Paving	7/25/2024	10/16/2024	5.00	60.0	—
Architectural Coating	Architectural Coating	7/25/2024	10/16/2024	5.00	60.0	—

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	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
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	2.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	4.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Preparation	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40

Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	2.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	4.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Preparation	Crawler Tractors	Diesel	Average	3.00	8.00	87.0	0.43
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

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	18.5	LDA,LDT1,LDT2
Demolition	Vendor	7.00	10.2	HHDT,MHDT
Demolition	Hauling	4.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	15.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	7.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	14.0	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	256	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	43.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	14.0	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	51.2	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	14.0	10.2	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	18.5	LDA,LDT1,LDT2
Demolition	Vendor	7.00	10.2	HHDT,MHDT
Demolition	Hauling	4.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	7.00	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	14.0	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	256	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	43.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	14.0	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	51.2	18.5	LDA,LDT1,LDT2

Architectural Coating	Vendor	14.0	10.2	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	0.00	0.00	939,110	313,037	32,147

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	138,164	—
Site Preparation	0.00	0.00	150	0.00	—
Grading	0.00	0.00	300	0.00	—
Paving	0.00	0.00	0.00	0.00	12.3

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Refrigerated Warehouse-No Rail	0.00	0%
Unrefrigerated Warehouse-No Rail	0.00	0%
Other Asphalt Surfaces	12.3	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	532	0.03	< 0.005
2024	0.00	532	0.03	< 0.005

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	31.4	annual days of extreme heat
Extreme Precipitation	5.35	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	24.3	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A

Air Quality	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	99.1
AQ-PM	47.8
AQ-DPM	30.5
Drinking Water	55.1
Lead Risk Housing	23.3
Pesticides	37.0
Toxic Releases	42.0
Traffic	32.3
Effect Indicators	—
CleanUp Sites	70.2
Groundwater	57.0
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	12.5
Solid Waste	97.2

Sensitive Population	—
Asthma	60.2
Cardio-vascular	87.3
Low Birth Weights	80.3
Socioeconomic Factor Indicators	—
Education	43.4
Housing	43.9
Linguistic	15.6
Poverty	41.7
Unemployment	68.4

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	54.6002823
Employed	72.89875529
Education	—
Bachelor's or higher	47.5426665
High school enrollment	100
Preschool enrollment	49.90375978
Transportation	—
Auto Access	52.9449506
Active commuting	1.039394328
Social	—
2-parent households	88.81047094
Voting	61.97869883

Neighborhood	—
Alcohol availability	92.22379058
Park access	41.79391762
Retail density	2.617733864
Supermarket access	12.53689208
Tree canopy	5.299627871
Housing	—
Homeownership	86.71885025
Housing habitability	81.89400744
Low-inc homeowner severe housing cost burden	32.58052098
Low-inc renter severe housing cost burden	74.33594251
Uncrowded housing	67.80443988
Health Outcomes	—
Insured adults	60.00256641
Arthritis	0.0
Asthma ER Admissions	38.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	44.5
Cognitively Disabled	22.1
Physically Disabled	22.7
Heart Attack ER Admissions	4.6
Mental Health Not Good	0.0

Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	13.4
SLR Inundation Area	0.0
Children	0.7
Elderly	81.9
English Speaking	89.2
Foreign-born	20.9
Outdoor Workers	25.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.7
Traffic Density	32.2
Traffic Access	23.0
Other Indices	—
Hardship	47.1
Other Decision Support	—
2016 Voting	65.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	60.0
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 and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction anticipated to begin in June 2023 and be completed in October 2024
Construction: Off-Road Equipment	Equipment based on information provided by the Project team
Construction: Dust From Material Movement	Assumes 5 acres will be graded per day
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Demolition/Crushing, Site Preparation, Grading, Building Construction, and Paving

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APPENDIX 3.2:

OPERATIONAL CALEEMOD OUTPUTS AND TRU CALCULATIONS

14410 Orchard Logistics Center Ops Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14410 Orchard Logistics Center Ops
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	25.8
Location	33.93190946782603, -116.99688729351396
County	Riverside-South Coast
City	Beaumont
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5625
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Refrigerated Warehouse-No Rail	61.0	1000sqft	1.40	61,000	0.00	—	—	—
Unrefrigerated Warehouse-No Rail	549	1000sqft	12.6	549,000	201,915	—	—	—

Other Asphalt Surfaces	12.3	Acre	12.3	0.00	0.00	—	—	—
User Defined Industrial	610	User Defined Unit	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-53*	Electrify Loading Docks
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Water	W-4	Require Low-Flow Water Fixtures
Area	LL-1	Replace Gas Powered Landscape Equipment with Zero-Emission Landscape Equipment

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	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.	12.3	25.1	38.4	117	0.45	1.05	9.78	10.8	1.04	1.91	2.95	579	55,193	55,772	60.7	5.09	199	59,004
Mit.	7.56	20.8	38.2	90.9	0.45	1.02	9.78	10.8	0.99	1.91	2.90	556	54,235	54,791	58.3	5.01	199	57,940
% Reduced	38%	17%	1%	23%	< 0.5%	3%	—	< 0.5%	5%	—	2%	4%	2%	2%	4%	1%	—	2%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.31	20.6	39.9	75.6	0.43	1.02	9.78	10.8	0.99	1.91	2.90	579	53,808	54,387	60.7	5.11	65.7	57,492

Mit.	7.31	20.6	39.9	75.6	0.43	1.02	9.78	10.8	0.99	1.91	2.90	556	52,942	53,499	58.3	5.04	65.7	56,524
% Reduced	—	—	—	—	—	—	—	—	—	—	—	4%	2%	2%	4%	1%	—	2%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	23.3	39.0	92.9	0.42	1.02	9.32	10.3	1.00	1.82	2.82	579	52,158	52,737	60.7	4.93	118	55,840
Mit.	6.98	20.3	38.8	74.8	0.42	0.99	9.32	10.3	0.97	1.82	2.79	556	51,228	51,785	58.2	4.85	118	54,806
% Reduced	32%	13%	< 0.5%	20%	< 0.5%	2%	—	< 0.5%	3%	—	1%	4%	2%	2%	4%	1%	—	2%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.86	4.24	7.11	17.0	0.08	0.19	1.70	1.89	0.18	0.33	0.52	95.9	8,635	8,731	10.0	0.82	19.6	9,245
Mit.	1.27	3.70	7.08	13.6	0.08	0.18	1.70	1.88	0.18	0.33	0.51	92.1	8,481	8,574	9.64	0.80	19.6	9,074
% Reduced	32%	13%	< 0.5%	20%	< 0.5%	2%	—	< 0.5%	3%	—	1%	4%	2%	2%	4%	1%	—	2%

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	6.84	5.71	31.7	85.5	0.41	0.52	9.78	10.3	0.50	1.91	2.41	—	42,710	42,710	0.97	4.35	137	44,167
Area	4.71	19.1	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	12.3	25.1	38.4	117	0.45	1.05	9.78	10.8	1.04	1.91	2.95	579	55,193	55,772	60.7	5.09	199	59,004

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.60	5.48	33.4	70.2	0.39	0.52	9.78	10.3	0.50	1.91	2.41	—	41,434	41,434	0.98	4.38	3.55	42,767
Area	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	7.31	20.6	39.9	75.6	0.43	1.02	9.78	10.8	0.99	1.91	2.90	579	53,808	54,387	60.7	5.11	65.7	57,492
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.27	5.19	32.3	69.3	0.38	0.50	9.32	9.81	0.47	1.82	2.30	—	39,709	39,709	0.94	4.19	56.3	41,038
Area	3.23	17.7	0.15	18.2	< 0.005	0.02	—	0.02	0.03	—	0.03	—	74.7	74.7	< 0.005	0.01	—	76.9
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	10.2	23.3	39.0	92.9	0.42	1.02	9.32	10.3	1.00	1.82	2.82	579	52,158	52,737	60.7	4.93	118	55,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.14	0.95	5.90	12.6	0.07	0.09	1.70	1.79	0.09	0.33	0.42	—	6,574	6,574	0.16	0.69	9.32	6,794
Area	0.59	3.23	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7
Energy	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,894	1,894	0.17	0.01	—	1,901
Water	—	—	—	—	—	—	—	—	—	—	—	44.8	155	199	4.60	0.11	—	347
Waste	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.86	4.24	7.11	17.0	0.08	0.19	1.70	1.89	0.18	0.33	0.52	95.9	8,635	8,731	10.0	0.82	19.6	9,245

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	6.84	5.71	31.7	85.5	0.41	0.52	9.78	10.3	0.50	1.91	2.41	—	42,710	42,710	0.97	4.35	137	44,167
Area	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	10,669	10,669	0.96	0.05	—	10,707
Water	—	—	—	—	—	—	—	—	—	—	—	247	856	1,103	25.5	0.61	—	1,922
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	7.56	20.8	38.2	90.9	0.45	1.02	9.78	10.8	0.99	1.91	2.90	556	54,235	54,791	58.3	5.01	199	57,940
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.60	5.48	33.4	70.2	0.39	0.52	9.78	10.3	0.50	1.91	2.41	—	41,434	41,434	0.98	4.38	3.55	42,767
Area	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	10,653	10,653	0.96	0.05	—	10,691
Water	—	—	—	—	—	—	—	—	—	—	—	247	856	1,103	25.5	0.61	—	1,922
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	7.31	20.6	39.9	75.6	0.43	1.02	9.78	10.8	0.99	1.91	2.90	556	52,942	53,499	58.3	5.04	65.7	56,524
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	6.27	5.19	32.3	69.3	0.38	0.50	9.32	9.81	0.47	1.82	2.30	—	39,709	39,709	0.94	4.19	56.3	41,038
Area	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	10,664	10,664	0.96	0.05	—	10,702
Water	—	—	—	—	—	—	—	—	—	—	—	247	856	1,103	25.5	0.61	—	1,922

Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	6.98	20.3	38.8	74.8	0.42	0.99	9.32	10.3	0.97	1.82	2.79	556	51,228	51,785	58.2	4.85	118	54,806
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.14	0.95	5.90	12.6	0.07	0.09	1.70	1.79	0.09	0.33	0.42	—	6,574	6,574	0.16	0.69	9.32	6,794
Area	—	2.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,766	1,766	0.16	0.01	—	1,772
Water	—	—	—	—	—	—	—	—	—	—	—	41.0	142	183	4.21	0.10	—	318
Waste	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.27	3.70	7.08	13.6	0.08	0.18	1.70	1.88	0.18	0.33	0.51	92.1	8,481	8,574	9.64	0.80	19.6	9,074

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.46	0.41	0.31	6.28	0.01	0.01	0.06	0.07	0.01	0.02	0.02	—	1,333	1,333	0.04	0.03	5.28	1,349

Unrefrigerated Warehouse-No	5.30	4.72	3.53	72.0	0.15	0.07	0.69	0.76	0.06	0.21	0.27	—	15,269	15,269	0.49	0.34	60.5	15,444
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	1.08	0.58	27.9	7.22	0.24	0.45	1.89	2.34	0.43	0.61	1.04	—	26,108	26,108	0.44	3.97	71.0	27,374
Total	6.84	5.71	31.7	85.5	0.41	0.52	2.65	3.17	0.50	0.83	1.33	—	42,710	42,710	0.97	4.35	137	44,167
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.44	0.39	0.34	5.05	0.01	0.01	0.06	0.07	0.01	0.02	0.02	—	1,230	1,230	0.04	0.03	0.14	1,241
Unrefrigerated Warehouse-No Rail	5.09	4.52	3.93	57.9	0.14	0.07	0.69	0.76	0.06	0.21	0.27	—	14,089	14,089	0.50	0.37	1.57	14,213
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	1.06	0.56	29.1	7.26	0.24	0.45	1.89	2.34	0.43	0.61	1.04	—	26,115	26,115	0.44	3.98	1.84	27,313
Total	6.60	5.48	33.4	70.2	0.39	0.52	2.65	3.17	0.50	0.83	1.33	—	41,434	41,434	0.98	4.38	3.55	42,767
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.08	0.07	0.06	0.96	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	205	205	0.01	0.01	0.38	207

Unrefrigerated Warehouse-No Rail	0.88	0.78	0.70	10.4	0.02	0.01	0.12	0.13	0.01	0.04	0.05	—	2,236	2,236	0.08	0.06	4.09	2,260
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.19	0.10	5.13	1.26	0.04	0.08	0.33	0.41	0.08	0.11	0.18	—	4,133	4,133	0.07	0.63	4.86	4,327
Total	1.14	0.95	5.90	12.6	0.07	0.09	0.46	0.55	0.09	0.15	0.23	—	6,574	6,574	0.16	0.69	9.32	6,794

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.46	0.41	0.31	6.28	0.01	0.01	0.06	0.07	0.01	0.02	0.02	—	1,333	1,333	0.04	0.03	5.28	1,349
Unrefrigerated Warehouse-No Rail	5.30	4.72	3.53	72.0	0.15	0.07	0.69	0.76	0.06	0.21	0.27	—	15,269	15,269	0.49	0.34	60.5	15,444
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	1.08	0.58	27.9	7.22	0.24	0.45	1.89	2.34	0.43	0.61	1.04	—	26,108	26,108	0.44	3.97	71.0	27,374
Total	6.84	5.71	31.7	85.5	0.41	0.52	2.65	3.17	0.50	0.83	1.33	—	42,710	42,710	0.97	4.35	137	44,167

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.44	0.39	0.34	5.05	0.01	0.01	0.06	0.07	0.01	0.02	0.02	—	1,230	1,230	0.04	0.03	0.14	1,241
Unrefrigerated Warehouse-No Rail	5.09	4.52	3.93	57.9	0.14	0.07	0.69	0.76	0.06	0.21	0.27	—	14,089	14,089	0.50	0.37	1.57	14,213
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	1.06	0.56	29.1	7.26	0.24	0.45	1.89	2.34	0.43	0.61	1.04	—	26,115	26,115	0.44	3.98	1.84	27,313
Total	6.60	5.48	33.4	70.2	0.39	0.52	2.65	3.17	0.50	0.83	1.33	—	41,434	41,434	0.98	4.38	3.55	42,767
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.08	0.07	0.06	0.96	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	205	205	0.01	0.01	0.38	207
Unrefrigerated Warehouse-No Rail	0.88	0.78	0.70	10.4	0.02	0.01	0.12	0.13	0.01	0.04	0.05	—	2,236	2,236	0.08	0.06	4.09	2,260
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.19	0.10	5.13	1.26	0.04	0.08	0.33	0.41	0.08	0.11	0.18	—	4,133	4,133	0.07	0.63	4.86	4,327

Total	1.14	0.95	5.90	12.6	0.07	0.09	0.46	0.55	0.09	0.15	0.23	—	6,574	6,574	0.16	0.69	9.32	6,794

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,274	1,274	0.12	0.01	—	1,282
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,413	2,413	0.23	0.03	—	2,427
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,688	3,688	0.35	0.04	—	3,709
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,274	1,274	0.12	0.01	—	1,282
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,413	2,413	0.23	0.03	—	2,427
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,688	3,688	0.35	0.04	—	3,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	211	211	0.02	< 0.005	—	212
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	400	400	0.04	< 0.005	—	402
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	611	611	0.06	0.01	—	614

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	488	488	0.05	0.01	—	491
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,428	2,428	0.23	0.03	—	2,442
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,916	2,916	0.28	0.03	—	2,933
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	486	486	0.05	0.01	—	489

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,413	2,413	0.23	0.03	—	2,427
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,900	2,900	0.27	0.03	—	2,916
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	80.7	80.7	0.01	< 0.005	—	81.2
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	401	401	0.04	< 0.005	—	404
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	482	482	0.05	0.01	—	485

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037
Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037
Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	171	171	0.02	< 0.005	—	172
Unrefrigerated Warehouse-No Rail	0.11	0.06	1.03	0.86	0.01	0.08	—	0.08	0.08	—	0.08	—	1,112	1,112	0.10	< 0.005	—	1,115
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,284	1,284	0.11	< 0.005	—	1,287

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037

Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037
Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	171	171	0.02	< 0.005	—	172

Unrefrige Warehouse-No Rail	0.11	0.06	1.03	0.86	0.01	0.08	—	0.08	0.08	—	0.08	—	1,112	1,112	0.10	< 0.005	—	1,115
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,284	1,284	0.11	< 0.005	—	1,287

4.3. Area Emissions by Source

4.3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.71	4.35	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Total	4.71	19.1	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	2.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.59	0.54	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7
Total	0.59	3.23	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7

4.3.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	2.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	2.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.4. Water Emissions by Land Use

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	27.0	91.7	119	2.78	0.07	—	208

Unrefrigerated	—	—	—	—	—	—	—	—	—	—	—	243	842	1,085	25.0	0.60	—	1,890
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	27.0	91.7	119	2.78	0.07	—	208
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	243	842	1,085	25.0	0.60	—	1,890
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.48	15.2	19.7	0.46	0.01	—	34.5

Unrefrigerated	—	—	—	—	—	—	—	—	—	—	—	40.3	139	180	4.14	0.10	—	313
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.8	155	199	4.60	0.11	—	347

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	24.7	84.0	109	2.55	0.06	—	191
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	223	772	995	22.9	0.55	—	1,732
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	247	856	1,103	25.5	0.61	—	1,922

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	24.7	84.0	109	2.55	0.06	—	191
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	223	772	995	22.9	0.55	—	1,732
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	247	856	1,103	25.5	0.61	—	1,922
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.10	13.9	18.0	0.42	0.01	—	31.6
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	36.9	128	165	3.79	0.09	—	287
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	41.0	142	183	4.21	0.10	—	318

4.5. Waste Emissions by Land Use

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	5.12	0.00	5.12	0.51	0.00	—	17.9
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	46.0	0.00	46.0	4.60	0.00	—	161
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	5.12	0.00	5.12	0.51	0.00	—	17.9
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	46.0	0.00	46.0	4.60	0.00	—	161
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigera Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3

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)

Equipme 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Refrigerated Warehouse-No Rail	84.0	82.3	82.3	30,481	1,778	1,742	1,742	645,156
Unrefrigerated Warehouse-No Rail	962	784	784	332,525	20,358	16,594	16,594	7,038,216
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	258	218	218	90,046	8,616	7,292	7,292	3,006,637

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Refrigerated Warehouse-No Rail	84.0	82.3	82.3	30,481	1,778	1,742	1,742	645,156
Unrefrigerated Warehouse-No Rail	962	784	784	332,525	20,358	16,594	16,594	7,038,216
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	258	218	218	90,046	8,616	7,292	7,292	3,006,637

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

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)
0	0.00	939,110	313,037	32,147

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Refrigerated Warehouse-No Rail	1,334,043	349	0.0330	0.0040	1,614,124
Unrefrigerated Warehouse-No Rail	2,526,691	349	0.0330	0.0040	10,481,608
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00

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)
Refrigerated Warehouse-No Rail	509,043	349	0.0330	0.0040	1,614,124
Unrefrigerated Warehouse-No Rail	2,526,691	349	0.0330	0.0040	10,481,608
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Refrigerated Warehouse-No Rail	14,106,250	0.00
Unrefrigerated Warehouse-No Rail	126,956,250	3,201,506
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Refrigerated Warehouse-No Rail	12,912,861	0.00
Unrefrigerated Warehouse-No Rail	116,215,751	3,201,506
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	57.3	0.00
Unrefrigerated Warehouse-No Rail	516	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	57.3	0.00

Unrefrigerated Warehouse-No Rail	516	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

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
Refrigerated Warehouse-No Rail	Cold storage	User Defined	150	7.50	7.50	7.50	25.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Refrigerated Warehouse-No Rail	Cold storage	User Defined	150	7.50	7.50	7.50	25.0

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	31.4	annual days of extreme heat
Extreme Precipitation	5.35	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	24.3	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	99.1
AQ-PM	47.8
AQ-DPM	30.5
Drinking Water	55.1
Lead Risk Housing	23.3
Pesticides	37.0
Toxic Releases	42.0
Traffic	32.3
Effect Indicators	—
CleanUp Sites	70.2
Groundwater	57.0
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	12.5
Solid Waste	97.2
Sensitive Population	—
Asthma	60.2
Cardio-vascular	87.3

Low Birth Weights	80.3
Socioeconomic Factor Indicators	—
Education	43.4
Housing	43.9
Linguistic	15.6
Poverty	41.7
Unemployment	68.4

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	54.6002823
Employed	72.89875529
Median HI	—
Education	—
Bachelor's or higher	47.5426665
High school enrollment	100
Preschool enrollment	49.90375978
Transportation	—
Auto Access	52.9449506
Active commuting	1.039394328
Social	—
2-parent households	88.81047094
Voting	61.97869883
Neighborhood	—
Alcohol availability	92.22379058

Park access	41.79391762
Retail density	2.617733864
Supermarket access	12.53689208
Tree canopy	5.299627871
Housing	—
Homeownership	86.71885025
Housing habitability	81.89400744
Low-inc homeowner severe housing cost burden	32.58052098
Low-inc renter severe housing cost burden	74.33594251
Uncrowded housing	67.80443988
Health Outcomes	—
Insured adults	60.00256641
Arthritis	0.0
Asthma ER Admissions	38.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	44.5
Cognitively Disabled	22.1
Physically Disabled	22.7
Heart Attack ER Admissions	4.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	13.4
SLR Inundation Area	0.0
Children	0.7
Elderly	81.9
English Speaking	89.2
Foreign-born	20.9
Outdoor Workers	25.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.7
Traffic Density	32.2
Traffic Access	23.0
Other Indices	—
Hardship	47.1
Other Decision Support	—
2016 Voting	65.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0

Healthy Places Index Score for Project Location (b)	60.0
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
Operations: Vehicle Data	Trip characteristics based on Project traffic study
Operations: Fleet Mix	Fleet mix based on Project traffic study.
Operations: Refrigerants	As of 1 January 2022, new commercial refrigeration equipment may not use refrigerants with a GWP of 150 or greater

14410 Orchard Logistics Center Ops LST Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14410 Orchard Logistics Center Ops LST
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	25.8
Location	33.93190946782603, -116.99688729351396
County	Riverside-South Coast
City	Beaumont
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5625
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

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
Refrigerated Warehouse-No Rail	61.0	1000sqft	1.40	61,000	0.00	—	—	—
Unrefrigerated Warehouse-No Rail	549	1000sqft	12.6	549,000	201,915	—	—	—

Other Asphalt Surfaces	12.3	Acre	12.3	0.00	0.00	—	—	—
User Defined Industrial	610	User Defined Unit	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	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.	9.09	22.9	11.7	45.5	0.07	0.56	0.58	1.14	0.57	0.11	0.68	579	15,347	15,926	60.0	1.08	70.0	17,819
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.17	18.3	11.7	19.1	0.07	0.53	0.58	1.11	0.53	0.11	0.64	579	15,163	15,742	60.0	1.08	62.4	17,626
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.20	21.1	11.6	36.8	0.07	0.55	0.55	1.10	0.56	0.11	0.66	579	15,117	15,696	60.0	1.07	65.4	17,580
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31	3.85	2.11	6.72	0.01	0.10	0.10	0.20	0.10	0.02	0.12	95.9	2,503	2,599	9.94	0.18	10.8	2,911

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	3.66	3.44	4.93	13.5	0.03	0.03	0.58	0.61	0.03	0.11	0.14	—	2,864	2,864	0.28	0.34	7.85	2,981
Area	4.71	19.1	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	9.09	22.9	11.7	45.5	0.07	0.56	0.58	1.14	0.57	0.11	0.68	579	15,347	15,926	60.0	1.08	70.0	17,819
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.45	3.23	5.21	13.6	0.03	0.03	0.58	0.61	0.03	0.11	0.14	—	2,789	2,789	0.30	0.35	0.20	2,901
Area	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	4.17	18.3	11.7	19.1	0.07	0.53	0.58	1.11	0.53	0.11	0.64	579	15,163	15,742	60.0	1.08	62.4	17,626
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.26	3.04	4.92	13.2	0.03	0.03	0.55	0.58	0.03	0.11	0.14	—	2,668	2,668	0.29	0.33	3.23	2,778
Area	3.23	17.7	0.15	18.2	< 0.005	0.02	—	0.02	0.03	—	0.03	—	74.7	74.7	< 0.005	0.01	—	76.9
Energy	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	11,441	11,441	1.04	0.06	—	11,484
Water	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Waste	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2

Total	7.20	21.1	11.6	36.8	0.07	0.55	0.55	1.10	0.56	0.11	0.66	579	15,117	15,696	60.0	1.07	65.4	17,580
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.59	0.56	0.90	2.40	< 0.005	0.01	0.10	0.11	0.01	0.02	0.02	—	442	442	0.05	0.06	0.54	460
Area	0.59	3.23	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7
Energy	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,894	1,894	0.17	0.01	—	1,901
Water	—	—	—	—	—	—	—	—	—	—	—	44.8	155	199	4.60	0.11	—	347
Waste	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.31	3.85	2.11	6.72	0.01	0.10	0.10	0.20	0.10	0.02	0.12	95.9	2,503	2,599	9.94	0.18	10.8	2,911

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.27	0.26	0.07	0.89	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	101	101	0.01	0.01	0.35	104
Unrefrigerated Warehouse-No Rail	3.09	2.99	0.76	10.2	0.01	0.01	0.05	0.05	0.01	0.01	0.02	—	1,152	1,152	0.17	0.09	3.96	1,186

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.30	0.19	4.10	2.35	0.01	0.02	0.09	0.12	0.02	0.03	0.05	—	1,611	1,611	0.10	0.25	3.55	1,691
Total	3.66	3.44	4.93	13.5	0.03	0.03	0.14	0.18	0.03	0.05	0.08	—	2,864	2,864	0.28	0.34	7.85	2,981
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.26	0.25	0.07	0.90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	94.0	94.0	0.02	0.01	0.01	96.8
Unrefrigerated Warehouse-No Rail	2.92	2.82	0.82	10.3	0.01	0.01	0.05	0.05	0.01	0.01	0.02	—	1,077	1,077	0.19	0.09	0.10	1,109
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.28	0.17	4.31	2.43	0.01	0.02	0.09	0.12	0.02	0.03	0.05	—	1,618	1,618	0.10	0.25	0.09	1,695
Total	3.45	3.23	5.21	13.6	0.03	0.03	0.14	0.18	0.03	0.05	0.08	—	2,789	2,789	0.30	0.35	0.20	2,901
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.05	0.04	0.01	0.17	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.6	15.6	< 0.005	< 0.005	0.02	16.1

Unrefrigerated Warehouse-No Rail	0.50	0.48	0.14	1.82	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	171	171	0.03	0.01	0.27	176
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.05	0.03	0.74	0.42	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	255	255	0.02	0.04	0.24	268
Total	0.59	0.56	0.90	2.40	< 0.005	0.01	0.03	0.03	0.01	0.01	0.01	—	442	442	0.05	0.06	0.54	460

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,274	1,274	0.12	0.01	—	1,282
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,413	2,413	0.23	0.03	—	2,427
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,688	3,688	0.35	0.04	—	3,709
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,274	1,274	0.12	0.01	—	1,282
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,413	2,413	0.23	0.03	—	2,427
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,688	3,688	0.35	0.04	—	3,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	211	211	0.02	< 0.005	—	212
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	400	400	0.04	< 0.005	—	402

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	611	611	0.06	0.01	—	614

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037
Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No Rail	0.10	0.05	0.87	0.73	0.01	0.07	—	0.07	0.07	—	0.07	—	1,035	1,035	0.09	< 0.005	—	1,037
Unrefrigerated Warehouse-No Rail	0.62	0.31	5.63	4.73	0.03	0.43	—	0.43	0.43	—	0.43	—	6,718	6,718	0.59	0.01	—	6,737
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.71	0.36	6.50	5.46	0.04	0.49	—	0.49	0.49	—	0.49	—	7,753	7,753	0.69	0.01	—	7,775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	171	171	0.02	< 0.005	—	172
Unrefrigerated Warehouse-No Rail	0.11	0.06	1.03	0.86	0.01	0.08	—	0.08	0.08	—	0.08	—	1,112	1,112	0.10	< 0.005	—	1,115
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.13	0.07	1.19	1.00	0.01	0.09	—	0.09	0.09	—	0.09	—	1,284	1,284	0.11	< 0.005	—	1,287

4.3. Area Emissions by Source

4.3.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.71	4.35	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Total	4.71	19.1	0.22	26.5	< 0.005	0.04	—	0.04	0.05	—	0.05	—	109	109	< 0.005	0.01	—	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	2.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.59	0.54	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7
Total	0.59	3.23	0.03	3.32	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	12.4	12.4	< 0.005	< 0.005	—	12.7

4.4. Water Emissions by Land Use

4.4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	27.0	91.7	119	2.78	0.07	—	208
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	243	842	1,085	25.0	0.60	—	1,890
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehou Rail	—	—	—	—	—	—	—	—	—	—	—	27.0	91.7	119	2.78	0.07	—	208
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	243	842	1,085	25.0	0.60	—	1,890
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	270	933	1,204	27.8	0.67	—	2,098
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.48	15.2	19.7	0.46	0.01	—	34.5
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	40.3	139	180	4.14	0.10	—	313
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.8	155	199	4.60	0.11	—	347

4.5. Waste Emissions by Land Use

4.5.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	30.9	0.00	30.9	3.09	0.00	—	108

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	278	0.00	278	27.8	0.00	—	973
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	309	0.00	309	30.9	0.00	—	1,081
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	5.12	0.00	5.12	0.51	0.00	—	17.9
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	46.0	0.00	46.0	4.60	0.00	—	161
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	0.00	51.2	5.11	0.00	—	179

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62.2	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Refrigerated Warehouse-No Rail	84.0	82.3	82.3	30,481	116	114	114	42,216
Unrefrigerated Warehouse-No Rail	962	784	784	332,525	1,332	1,086	1,086	460,547
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	258	218	218	90,046	431	365	365	150,377

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	939,110	313,037	32,147

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Refrigerated Warehouse-No Rail	1,334,043	349	0.0330	0.0040	1,614,124
Unrefrigerated Warehouse-No Rail	2,526,691	349	0.0330	0.0040	10,481,608
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
User Defined Industrial	0.00	349	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Refrigerated Warehouse-No Rail	14,106,250	0.00
Unrefrigerated Warehouse-No Rail	126,956,250	3,201,506
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	57.3	0.00
Unrefrigerated Warehouse-No Rail	516	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

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
Refrigerated Warehouse-No Rail	Cold storage	User Defined	150	7.50	7.50	7.50	25.0

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

5.16. 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. Biomass Cover Type

5.18.1.1. Unmitigated

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)

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	31.4	annual days of extreme heat
Extreme Precipitation	5.35	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	24.3	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A

Drought	N/A	N/A	N/A	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	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	99.1
AQ-PM	47.8
AQ-DPM	30.5
Drinking Water	55.1
Lead Risk Housing	23.3
Pesticides	37.0
Toxic Releases	42.0
Traffic	32.3
Effect Indicators	—
CleanUp Sites	70.2
Groundwater	57.0
Haz Waste Facilities/Generators	69.4

Impaired Water Bodies	12.5
Solid Waste	97.2
Sensitive Population	—
Asthma	60.2
Cardio-vascular	87.3
Low Birth Weights	80.3
Socioeconomic Factor Indicators	—
Education	43.4
Housing	43.9
Linguistic	15.6
Poverty	41.7
Unemployment	68.4

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	54.6002823
Employed	72.89875529
Education	—
Bachelor's or higher	47.5426665
High school enrollment	100
Preschool enrollment	49.90375978
Transportation	—
Auto Access	52.9449506
Active commuting	1.039394328
Social	—

2-parent households	88.81047094
Voting	61.97869883
Neighborhood	—
Alcohol availability	92.22379058
Park access	41.79391762
Retail density	2.617733864
Supermarket access	12.53689208
Tree canopy	5.299627871
Housing	—
Homeownership	86.71885025
Housing habitability	81.89400744
Low-inc homeowner severe housing cost burden	32.58052098
Low-inc renter severe housing cost burden	74.33594251
Uncrowded housing	67.80443988
Health Outcomes	—
Insured adults	60.00256641
Arthritis	0.0
Asthma ER Admissions	38.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	44.5
Cognitively Disabled	22.1
Physically Disabled	22.7

Heart Attack ER Admissions	4.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	13.4
SLR Inundation Area	0.0
Children	0.7
Elderly	81.9
English Speaking	89.2
Foreign-born	20.9
Outdoor Workers	25.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.7
Traffic Density	32.2
Traffic Access	23.0
Other Indices	—
Hardship	47.1
Other Decision Support	—
2016 Voting	65.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	60.0
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 and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Operations: Vehicle Data	Trip characteristics based on Project traffic study
Operations: Fleet Mix	Fleet mix based on Project traffic study.
Operations: Refrigerants	As of 1 January 2022, new commercial refrigeration equipment may not use refrigerants with a GWP of 150 or greater

TRU Type	TRU - Instate Trailer TRU	
Number of Units	8	
Operating Time Each Unit	4	
TRU Type	TRU - Instate Truck TRU	
Number of Units	16	
Operating Time Each Unit	4	
TRU Type	TRU - Out-of-State Genset TRU	
Number of Units	0	
Operating Time Each Unit	4	
TRU Type	TRU - Instate Trailer TRU	
Number of Units	0	
Operating Time Each Unit	4	

Unit	**Emissions Pounds per Day**						**Annual**
	ROG	NO_X	CO	SOX	PM10	PM2.5	MT CO_2
TRU - Instate Trailer TRU	0.55	0.51	0.07	0.00	0.02	0.01	105.37
TRU - Instate Truck TRU	1.23	1.57	0.13	0.00	0.08	0.07	248.35
TRU - Out-of-State Genset TRU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRU - Instate Trailer TRU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.78	2.08	0.20	0.00	0.10	0.09	353.73

Total Two Way Truck Trips	48

TRU Emission Calculation

The TRU calculations are based on the 2021 Offroad Emissions model, version 1.0.2 (Orion), developed by the California Air Resources Board. The following parameters were used to generate the emissions database:

Region: County

Scenario: All Adopted Rules – Exhaust

Vehicle Classification: Types – All TRU Types

Orion does not provide emission rates per hour or mile as with the on-road emission model and only provides emission inventories. Emission results are produced in tons per day while all activity, fuel consumption and horsepower hours were reported at annual levels. The emission inventory is based on specific assumptions including the average horsepower rating of specific types of equipment and the hours of operation annually. These assumptions are not always consistent with assumptions used in the modeling of project level emissions. Therefore, the emissions inventory was converted into emission rates to accurately calculate emissions from TRU operation associated with project level details. This was accomplished by converting the annual horsepower hours to daily operational characteristics and converting the daily emission levels into hourly emission rates based on the total emission of each criteria pollutant by equipment type and the average daily hours of operation.

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APPENDIX 3.3:

CRUSHING EMISSIONS

Crushing Operations PM10 & PM2.5 Fugitive Dust Emissions

Crusher	Tons/day Processed	Controlled Emission Factor (lb/ton)[1]	Max Daily Emissions (lb/day)
PM_{10}	4,578.91	5.40E-04	2.47
$PM_{2.5}$	4,578.91	1.00E-04	0.46
Total			
PM_{10}			2.47
$PM_{2.5}$			0.46

[1]Controlled Emission Factor U.S. EPA AP 42 11.19.2-2

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APPENDIX 3.4:

LST CALCULATIONS AND AERMOD MODELING OUTPUT

Source	Emissions (lbs/day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Summer						
Area Source	19.10	0.22	26.50	< 0.005	0.04	0.05
Energy Source	0.36	6.50	5.46	0.04	0.49	0.49
Mobile Source	3.44	4.93	13.50	0.03	0.61	0.14
TRU Source	1.78	2.08	0.20	0.00	0.10	0.09
On-Site Equipment Source	0.23	0.75	32.89	0.00	0.06	0.05
Total Maximum Daily Emissions	**19.57**	**43.20**	**51.62**	**0.31**	**18.39**	**5.48**
Winter						
Area Source	14.70	0.00	0.00	0.00	0.00	0.00
Energy Source	0.36	6.50	5.46	0.04	0.49	0.49
Mobile Source	3.23	5.21	13.60	0.03	0.61	0.14
TRU Source	1.78	2.08	0.20	0.00	0.10	0.09
On-Site Equipment Source	0.23	0.75	32.89	0.00	0.06	0.05
Total Maximum Daily Emissions	**19.04**	**45.39**	**46.46**	**0.31**	**18.39**	**5.48**

Localized Emissions

	NOX	CO	PM10	PM2.5
Summer	1.25E+01	7.84E+01	1.20E+00	7.39E-01
Winter	1.26E+01	5.20E+01	1.16E+00	6.89E-01
Maximum (lb/day)	1.26E+01	7.84E+01	1.20E+00	7.39E-01
Maximum (lb/hour)	5.24E-01	3.26E+00	5.02E-02	3.08E-02

Onsite Travel (TRU): 5%

Maximum On-Site Emissions (lbs/day)

Phase	Overlap	NOX	CO	PM10 Fugitive	PM10 Exhaust	PM10 Total	PM2.5 Fugitive	PM2.5 Exhaust	PM2.5 Total
Demolition		27.3	23.5	66.17	1.20	67.37	10.1	1.1	11.2
Site Prep		43.9	35.4	5.52	2.29	7.81	2.67	2.11	4.78
Grading		40.9	32.7	2.67	1.96	4.63	1.8	0.98	2.78
Building Construction		20.1	20.7	0	0.91	0.91	0	0.83	0.83
Paving	X	7.81	10	0	0.39	0.39	0	0.36	0.36
Architectural Coating	X	1.21	1.53	0	0.04	0.04	0	0.04	0.04
Maximum		43.9	35.4	--	--	67.37	--	--	11.2

Modeled Maximum (lb/hr)	5.4875	4.425	8.27125	0.15	--	1.2625	0.1375	--

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** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
CO\14410 Construction CO.ADI
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** AERMOD Control Pathway
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CO STARTING
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   AVERTIME 1 8
   URBANOPT 2189641
   POLLUTID CO
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction CO.err"
CO FINISHED
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** AERMOD Source Pathway
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**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
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** Source Parameters **
   SRCPARAM VOL1         0.5575406215     5.000    82.279     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
***************************************
** AERMOD Receptor Pathway
***************************************
**
```

```
**
RE STARTING
   INCLUDED "14410 Construction CO.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 CONSTRUCTION CO.AD\01H1GALL.PLT" 31
   PLOTFILE 8 ALL 1ST "14410 CONSTRUCTION CO.AD\08H1GALL.PLT" 32
   SUMMFILE "14410 Construction CO.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
CO\14410 Construction CO.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 2189641
   POLLUTID CO
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction CO.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.5575406215     5.000    82.279     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
```

```
**
**
RE STARTING
   INCLUDED "14410 Construction CO.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 CONSTRUCTION CO.AD\01H1GALL.PLT" 31
   PLOTFILE 8 ALL 1ST "14410 CONSTRUCTION CO.AD\08H1GALL.PLT" 32
   SUMMFILE "14410 Construction CO.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      83       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      83       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:55:32

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                             ***     MODEL SETUP OPTIONS SUMMARY       ***
```

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  CO

**Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR

**This Run Includes:      1 Source(s);       1 Source Group(s); and      59 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  16216

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing
                                                                Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate
                 Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.5 MB of RAM.
```

```
 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Construction
 CO.err
 **File for Summary of Results:   14410 Construction
 CO.sum
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:55:32

                     PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                     *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.    INIT.
              URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - -

 VOL1            0   0.55754E+00  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES   HRDOW
```

```
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:55:32
```

```
                     PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                              *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                 SOURCE IDs
 -----------                                                 ----------


  ALL        VOL1        ,
```

```
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:55:32
```

```
                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                             *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                       SOURCE IDs
  --------   ---------                                       ----------


             2189641.   VOL1        ,
```

```
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
```

```
 *** AERMET - VERSION  16216 ***
 ***                                                                             ***        09:55:32

                      PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK
                   (HRDOW) *

 SOURCE ID = VOL1         ; SOURCE TYPE = VOLUME   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
   .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                             ***        09:55:32

                      PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                             *** DISCRETE CARTESIAN RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                          (METERS)

     ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
     780.4,     780.4,       0.0);
     ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
     782.0,     782.0,       0.0);
     ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
     776.2,     776.2,       0.0);
     ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
     774.5,     782.0,       0.0);
     ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
     778.0,     778.0,       0.0);
     ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);         ( 500000.1, 3754482.4,
     774.2,     774.2,       0.0);
     ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);         ( 500446.4, 3754903.2,
     771.1,     776.0,       0.0);
     ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);         ( 500531.0, 3755126.6,
     774.3,     774.3,       0.0);
     ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);         ( 500603.1, 3755064.1,
     775.4,     775.4,       0.0);
     ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);         ( 500664.9, 3755005.8,
```

```
    776.8,     776.8,        0.0);
    ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);         ( 500749.8, 3754946.4,
    778.1,     778.1,        0.0);
    ( 500791.8, 3754922.7,     778.4,     778.4,       0.0);         ( 500820.4, 3754899.4,
    778.5,     778.5,        0.0);
    ( 500862.5, 3754875.7,     779.0,     779.0,       0.0);         ( 500896.8, 3754859.8,
    779.2,     779.2,        0.0);
    ( 500941.7, 3754840.0,     780.0,     780.0,       0.0);         ( 500975.6, 3754824.1,
    780.8,     780.8,        0.0);
    ( 501025.4, 3754801.5,     781.0,     781.0,       0.0);         ( 501083.8, 3754779.9,
    781.9,     781.9,        0.0);
    ( 501118.8, 3754761.5,     782.0,     782.0,       0.0);         ( 501141.7, 3754750.6,
    782.3,     782.3,        0.0);
    ( 501165.0, 3754738.9,     782.5,     782.5,       0.0);         ( 501192.3, 3754733.6,
    783.0,     783.0,        0.0);
    ( 501216.3, 3754735.0,     783.2,     783.2,       0.0);         ( 501240.0, 3754734.3,
    783.7,     783.7,        0.0);
    ( 501301.1, 3754707.8,     784.3,     784.3,       0.0);         ( 501331.9, 3754683.1,
    784.7,     784.7,        0.0);
    ( 501347.1, 3754684.1,     785.1,     785.1,       0.0);         ( 501372.2, 3754683.1,
    785.5,     785.5,        0.0);
    ( 501397.6, 3754684.1,     785.9,     785.9,       0.0);         ( 501413.9, 3754682.0,
    786.4,     786.4,        0.0);
    ( 501442.2, 3754678.5,     787.0,     787.0,       0.0);         ( 501339.3, 3754636.0,
    784.9,     784.9,        0.0);
    ( 501371.5, 3754616.3,     785.0,     785.0,       0.0);         ( 501384.2, 3754554.0,
    784.6,     784.6,        0.0);
    ( 501222.0, 3754446.2,     781.0,     781.0,       0.0);         ( 501278.2, 3754384.8,
    781.9,     781.9,        0.0);
    ( 501160.5, 3754265.6,     780.0,     780.0,       0.0);         ( 501101.8, 3754046.9,
    780.0,     780.0,        0.0);
    ( 501100.7, 3753964.9,     780.0,     780.0,       0.0);         ( 500493.9, 3753958.5,
    775.9,     775.9,        0.0);
    ( 500545.1, 3753958.1,     777.9,     777.9,       0.0);         ( 500584.0, 3753956.4,
    778.3,     778.3,        0.0);
    ( 500231.7, 3754177.5,     774.0,     774.0,       0.0);         ( 499973.4, 3754320.0,
    771.6,     771.6,        0.0);
    ( 499959.2, 3754153.3,     758.1,     776.0,       0.0);         ( 499606.4, 3754166.9,
    757.3,     772.0,        0.0);
    ( 499987.9, 3754953.8,     774.9,     774.9,
    0.0);
```



```
                                               *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                  (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1   1 1 1 1 1 1 1 1 1 1
```

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
               INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                                    ***
                                                               (METERS/SEC)

                                                   1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:55:32

                      PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                             Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                   Upper air station no.:     3190
                  Name: UNKNOWN                                     Name:
                  UNKNOWN
                  Year:   2011                                      Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
 60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
```

```
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:55:32

                     PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN
                                          MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34        9.63476  (14121214)                500556.63
       3754410.67       19.97633  (15112616)
       500557.31   3754522.38       32.56735  (15112616)                500557.99
       3754617.83       30.84835  (12121716)
       500444.25   3754297.61       11.94648  (11121216)                500388.06
       3754298.29       13.75139  (11121216)
       500452.38   3754021.40        4.28804  (11121216)                500886.33
       3754374.11        9.75668  (15112616)
       501084.01   3754379.53        7.91837  (15112616)                501013.61
       3754294.91        6.48764  (15112616)
       500006.24   3754662.51       20.93897  (15120816)                500000.14
       3754482.43       26.48877  (13112216)
```

```
        499973.28   3754829.30        7.97174  (14120916)                500446.44
        3754903.20        11.72401  (14121916)
        500504.10   3755148.67        3.76864  (14121916)                500530.97
        3755126.64         4.68211  (14121916)
        500575.15   3755089.88        5.96150  (14121916)                500603.07
        3755064.08         6.47484  (14121916)
        500640.19   3755030.85        6.50989  (14121916)                500664.93
        3755005.76         6.13325  (14121916)
        500711.23   3754973.95        5.33681  (12121416)                500749.75
        3754946.38         6.70536  (12121716)
        500791.82   3754922.70        8.02534  (12121716)                500820.44
        3754899.37         9.06221  (12121716)
        500862.50   3754875.69        9.82644  (12121716)                500896.79
        3754859.79        10.04344  (12121716)
        500941.68   3754839.99        9.98338  (12121716)                500975.61
        3754824.09         9.74948  (12121716)
        501025.44   3754801.47        9.16230  (12121716)                501083.76
        3754779.91         8.25285  (12121716)
        501118.75   3754761.53        7.63326  (12121716)                501141.73
        3754750.57         7.21451  (12121716)
        501165.05   3754738.91        6.78172  (12121716)                501192.27
        3754733.61         6.37301  (12121716)
        501216.30   3754735.02        6.10054  (12121716)                501239.99
        3754734.31         5.82156  (12121716)
        501301.13   3754707.80        9.84735  (11121516)                501331.88
        3754683.06         9.56239  (11121516)
        501347.08   3754684.12        9.53921  (11121516)                501372.17
        3754683.06         9.37856  (11121516)
        501397.62   3754684.12        9.26979  (11121516)                501413.88
        3754682.00         9.24228  (11121516)
        501442.16   3754678.47        9.07014  (11121516)                501339.30
        3754636.05         8.99521  (11121516)
        501371.47   3754616.26        8.26216  (11121516)                501384.19
        3754554.05         7.37693  (15112616)
        501221.96   3754446.25        7.14681  (15112616)                501278.16
        3754384.75         6.32138  (15112616)
        501160.46   3754265.64        5.29541  (15112616)                501101.79
        3754046.86         2.05555  (14121210)
        501100.73   3753964.86        1.62717  (14120216)                500493.86
        3753958.50         3.50098  (11121216)
        500545.11   3753958.14        3.34124  (11121216)                500583.99
        3753956.38         3.19480  (11121216)
        500231.73   3754177.54        8.02109  (11121216)                499973.43
        3754319.99        17.26902  (13112216)
        499959.24   3754153.30        5.38376  (13112216)                499606.37
        3754166.90         7.23844  (13112216)
        499987.88   3754953.78        6.33338
        (12071216)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                         ***        09:55:32

                        PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1         ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN
                                          MICROGRAMS/M**3                           **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)               X-COORD (M)  Y-COORD
```

```
      (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - - - - - - - - - -
        500554.60   3754323.34       5.38525  (14121216)                 500556.63
        3754410.67        7.59496  (15112616)
        500557.31   3754522.38      12.36547  (15112616)                 500557.99
        3754617.83       11.20997  (12121716)
        500444.25   3754297.61       5.86478  (14121216)                 500388.06
        3754298.29        5.62571  (14121216)
        500452.38   3754021.40       0.90732  (12121316)                 500886.33
        3754374.11        3.03805  (15112616)
        501084.01   3754379.53       2.17964  (15112616)                 501013.61
        3754294.91        1.89835  (15112616)
        500006.24   3754662.51       9.90206  (14120316)                 500000.14
        3754482.43        9.42069  (13112216)
        499973.28   3754829.30       3.71486  (15113016)                 500446.44
        3754903.20        2.52161  (13040816)
        500504.10   3755148.67       0.87257  (13040816)                 500530.97
        3755126.64        1.01928  (13040816)
        500575.15   3755089.88       1.21907  (13040816)                 500603.07
        3755064.08        1.30630  (13040816)
        500640.19   3755030.85       1.38290  (12122716)                 500664.93
        3755005.76        1.66875  (12122716)
        500711.23   3754973.95       2.09174  (13020816)                 500749.75
        3754946.38        2.32408  (13020816)
        500791.82   3754922.70       2.32887  (13020816)                 500820.44
        3754899.37        2.42068  (12121716)
        500862.50   3754875.69       2.63620  (12121716)                 500896.79
        3754859.79        2.69228  (12121716)
        500941.68   3754839.99       2.66696  (12121716)                 500975.61
        3754824.09        2.59431  (12121716)
        501025.44   3754801.47       2.41354  (12121716)                 501083.76
        3754779.91        2.14169  (12121716)
        501118.75   3754761.53       1.96356  (12121716)                 501141.73
        3754750.57        1.84444  (12121716)
        501165.05   3754738.91       1.72282  (12121716)                 501192.27
        3754733.61        1.60536  (12121716)
        501216.30   3754735.02       1.52904  (13112016)                 501239.99
        3754734.31        1.47443  (13112016)
        501301.13   3754707.80       1.88507  (11121516)                 501331.88
        3754683.06        1.80938  (11121516)
        501347.08   3754684.12       1.78799  (11121516)                 501372.17
        3754683.06        1.73884  (11121516)
        501397.62   3754684.12       1.69791  (11121516)                 501413.88
        3754682.00        1.67751  (11121516)
        501442.16   3754678.47       1.62841  (11121516)                 501339.30
        3754636.05        1.71233  (11121516)
        501371.47   3754616.26       1.57202  (11121516)                 501384.19
        3754554.05        1.48525  (15112616)
        501221.96   3754446.25       1.80189  (15112616)                 501278.16
        3754384.75        1.59640  (15112616)
        501160.46   3754265.64       1.46554  (15112616)                 501101.79
        3754046.86        0.65263  (14123016)
        501100.73   3753964.86       0.59745  (14121216)                 500493.86
        3753958.50        0.74204  (12121316)
        500545.11   3753958.14       0.75386  (12121316)                 500583.99
        3753956.38        0.78476  (14121216)
        500231.73   3754177.54       1.56294  (12121316)                 499973.43
        3754319.99        3.65006  (13112216)
        499959.24   3754153.30       0.84483  (12121316)                 499606.37
        3754166.90        1.33319  (13112216)
        499987.88   3754953.78       1.60498
        (14120916)
```

*** *** 09:55:32

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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

```
                                                   DATE                                         NETWORK
GROUP ID                    AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      32.56735  ON 15112616: AT (  500557.31,  3754522.38,   780.21,   780.21,    0.00)  DC
```

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

FF *** AERMOD - VERSION 21112 *** *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op *** 09/08/22
*** AERMET - VERSION 16216 ***
*** *** 09:55:32

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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

```
                                                   DATE                                         NETWORK
GROUP ID                    AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      12.36547  ON 15112616: AT (  500557.31,  3754522.38,   780.21,   780.21,    0.00)  DC
```

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

FF *** AERMOD - VERSION 21112 *** *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op *** 09/08/22
*** AERMET - VERSION 16216 ***
*** *** 09:55:32

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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

```
 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            2 Warning Message(s)
A Total of         1311 Informational Message(s)

A Total of        43824 Hours Were Processed

A Total of           64 Calm Hours Identified

A Total of         1247 Missing Hours Identified (  2.85 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186      83       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
ME W187      83       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

```
**
***************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
NO2\14410 Construction NO2.ADI
**
***************************************
**
**
***************************************
** AERMOD Control Pathway
***************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1
   URBANOPT 2189641
   POLLUTID NOX
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction NO2.err"
CO FINISHED
**
***************************************
** AERMOD Source Pathway
***************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.6914133695     5.000    82.279     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
***************************************
** AERMOD Receptor Pathway
***************************************
**
```

```
**
RE STARTING
   INCLUDED "14410 Construction NO2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 CONSTRUCTION NO2.AD\01H1GALL.PLT" 31
   SUMMFILE "14410 Construction NO2.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
NO2\14410 Construction NO2.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1
   URBANOPT 2189641
   POLLUTID NOX
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction NO2.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.6914133695     5.000    82.279     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
```

```
**
**
RE STARTING
   INCLUDED "14410 Construction NO2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 CONSTRUCTION NO2.AD\01H1GALL.PLT" 31
   SUMMFILE "14410 Construction NO2.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      83       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      83       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:57:23

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - -
```

```
**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  NOX

**Model Calculates  1 Short Term Average(s) of:   1-HR

**This Run Includes:      1 Source(s);       1 Source Group(s); and      58 Receptor(s)

              with:      0 POINT(s), including
                         0 POINTCAP(s) and      0 POINTHOR(s)
               and:      1 VOLUME source(s)
               and:      0 AREA type source(s)
               and:      0 LINE source(s)
               and:      0 RLINE/RLINEXT source(s)
               and:      0 OPENPIT source(s)
               and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  16216

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing
                                                                Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate
                 Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.5 MB of RAM.

**Input Runstream File:
```

```
aermod.inp
**Output Print File:
aermod.out

**Detailed Error/Message File:   14410 Construction
NO2.err
**File for Summary of Results:   14410 Construction
NO2.sum
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
*** AERMET - VERSION  16216 ***
***                                                                       ***        09:57:23

                     PAGE   2
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                   *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                       BASE    RELEASE    INIT.    INIT.
              URBAN  EMISSION RATE
  SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
  SOURCE  SCALAR VARY
    ID         CATS.              (METERS) (METERS) (METERS) (METERS) (METERS)
    (METERS)              BY
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - -

VOL1             0   0.69141E+00  500286.0 3754559.1   779.1     5.00    82.28     1.40
YES   HRDOW
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
*** AERMET - VERSION  16216 ***
***                                                                       ***        09:57:23

                     PAGE   3
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                            *** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID                                                 SOURCE IDs
-----------                                                 ----------


 ALL        VOL1        ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
*** AERMET - VERSION  16216 ***
***                                                                       ***        09:57:23

                     PAGE   4
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                           *** SOURCE IDs DEFINED AS URBAN SOURCES ***

 URBAN ID   URBAN POP                                       SOURCE IDs
 --------   ---------                                       ----------


             2189641.   VOL1         ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
*** AERMET - VERSION  16216 ***
***                                                                       ***        09:57:23
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

```
 SOURCE ID = VOL1         ; SOURCE TYPE = VOLUME   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
    .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
    .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
    .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
    .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
    .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
    .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
```


*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
    ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);        ( 500556.6, 3754410.7,
    780.4,     780.4,       0.0);
    ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);        ( 500558.0, 3754617.8,
    782.0,     782.0,       0.0);
    ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);        ( 500388.1, 3754298.3,
    776.2,     776.2,       0.0);
    ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);        ( 500886.3, 3754374.1,
    774.5,     782.0,       0.0);
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);        ( 501013.6, 3754294.9,
    778.0,     778.0,       0.0);
    ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);        ( 500000.1, 3754482.4,
    774.2,     774.2,       0.0);
    ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);        ( 500446.4, 3754903.2,
    771.1,     776.0,       0.0);
    ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);        ( 500531.0, 3755126.6,
    774.3,     774.3,       0.0);
    ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);        ( 500603.1, 3755064.1,
    775.4,     775.4,       0.0);
    ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);        ( 500664.9, 3755005.8,
    776.8,     776.8,       0.0);
    ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);        ( 500749.8, 3754946.4,
```

```
    778.1,     778.1,        0.0);
    ( 500791.8, 3754922.7,      778.4,      778.4,        0.0);          ( 500820.4, 3754899.4,
    778.5,     778.5,        0.0);
    ( 500862.5, 3754875.7,      779.0,      779.0,        0.0);          ( 500896.8, 3754859.8,
    779.2,     779.2,        0.0);
    ( 500941.7, 3754840.0,      780.0,      780.0,        0.0);          ( 500975.6, 3754824.1,
    780.8,     780.8,        0.0);
    ( 501025.4, 3754801.5,      781.0,      781.0,        0.0);          ( 501083.8, 3754779.9,
    781.9,     781.9,        0.0);
    ( 501118.8, 3754761.5,      782.0,      782.0,        0.0);          ( 501141.7, 3754750.6,
    782.3,     782.3,        0.0);
    ( 501165.0, 3754738.9,      782.5,      782.5,        0.0);          ( 501192.3, 3754733.6,
    783.0,     783.0,        0.0);
    ( 501216.3, 3754735.0,      783.2,      783.2,        0.0);          ( 501240.0, 3754734.3,
    783.7,     783.7,        0.0);
    ( 501301.1, 3754707.8,      784.3,      784.3,        0.0);          ( 501331.9, 3754683.1,
    784.7,     784.7,        0.0);
    ( 501347.1, 3754684.1,      785.1,      785.1,        0.0);          ( 501372.2, 3754683.1,
    785.5,     785.5,        0.0);
    ( 501397.6, 3754684.1,      785.9,      785.9,        0.0);          ( 501413.9, 3754682.0,
    786.4,     786.4,        0.0);
    ( 501442.2, 3754678.5,      787.0,      787.0,        0.0);          ( 501339.3, 3754636.0,
    784.9,     784.9,        0.0);
    ( 501371.5, 3754616.3,      785.0,      785.0,        0.0);          ( 501384.2, 3754554.0,
    784.6,     784.6,        0.0);
    ( 501222.0, 3754446.2,      781.0,      781.0,        0.0);          ( 501278.2, 3754384.8,
    781.9,     781.9,        0.0);
    ( 501160.5, 3754265.6,      780.0,      780.0,        0.0);          ( 501101.8, 3754046.9,
    780.0,     780.0,        0.0);
    ( 501100.7, 3753964.9,      780.0,      780.0,        0.0);          ( 500493.9, 3753958.5,
    775.9,     775.9,        0.0);
    ( 500545.1, 3753958.1,      777.9,      777.9,        0.0);          ( 500584.0, 3753956.4,
    778.3,     778.3,        0.0);
    ( 500231.7, 3754177.5,      774.0,      774.0,        0.0);          ( 499973.4, 3754320.0,
    771.6,     771.6,        0.0);
    ( 499959.2, 3754153.3,      758.1,      776.0,        0.0);          ( 499606.4, 3754166.9,
    757.3,     772.0,        0.0);
```



```
                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
                INCLUDED IN THE DATA FILE.
```

```
                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                                    ***
                                                                (METERS/SEC)

                                                   1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:57:23

                        PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                             Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                   Upper air station no.:     3190
                  Name: UNKNOWN                                     Name:
                  UNKNOWN
                  Year:   2011                                      Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
```

```
98.    9.1  277.0    5.5
11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
99.    9.1  276.4    5.5
11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
103.    9.1  276.4    5.5
11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
106.    9.1  275.9    5.5
11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
100.    9.1  274.9    5.5
11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
70.    9.1  273.1    5.5
11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
85.    9.1  273.1    5.5
11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
82.    9.1  273.1    5.5
11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
64.    9.1  272.5    5.5
11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
61.    9.1  272.5    5.5
11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
76.    9.1  272.5    5.5


First hour of profile data
YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
*** AERMET - VERSION  16216 ***
***                                                                        ***        09:57:23

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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                             *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR
                             SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     VOL1        ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN
                                       MICROGRAMS/M**3                         **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -
       500554.60   3754323.34      11.94819  (14121214)               500556.63
       3754410.67       24.77291  (15112616)
       500557.31   3754522.38      40.38720  (15112616)               500557.99
       3754617.83       38.25544  (12121716)
       500444.25   3754297.61      14.81498  (11121216)               500388.06
       3754298.29       17.05328  (11121216)
       500452.38   3754021.40       5.31765  (11121216)               500886.33
       3754374.11       12.09939  (15112616)
       501084.01   3754379.53       9.81967  (15112616)               501013.61
       3754294.91        8.04541  (15112616)
       500006.24   3754662.51      25.96669  (15120816)               500000.14
       3754482.43       32.84907  (13112216)
       499973.28   3754829.30       9.88586  (14120916)               500446.44
       3754903.20       14.53910  (14121916)
       500504.10   3755148.67       4.67354  (14121916)               500530.97
       3755126.64        5.80634  (14121916)
```

```
      500575.15   3755089.88        7.39294  (14121916)                 500603.07
      3755064.08        8.02954  (14121916)
      500640.19   3755030.85        8.07300  (14121916)                 500664.93
      3755005.76        7.60592  (14121916)
      500711.23   3754973.95        6.61825  (12121416)                 500749.75
      3754946.38        8.31540  (12121716)
      500791.82   3754922.70        9.95233  (12121716)                 500820.44
      3754899.37       11.23816  (12121716)
      500862.50   3754875.69       12.18590  (12121716)                 500896.79
      3754859.79       12.45500  (12121716)
      500941.68   3754839.99       12.38052  (12121716)                 500975.61
      3754824.09       12.09045  (12121716)
      501025.44   3754801.47       11.36229  (12121716)                 501083.76
      3754779.91       10.23447  (12121716)
      501118.75   3754761.53        9.46611  (12121716)                 501141.73
      3754750.57        8.94680  (12121716)
      501165.05   3754738.91        8.41010  (12121716)                 501192.27
      3754733.61        7.90326  (12121716)
      501216.30   3754735.02        7.56536  (12121716)                 501239.99
      3754734.31        7.21940  (12121716)
      501301.13   3754707.80       12.21183  (11121516)                 501331.88
      3754683.06       11.85844  (11121516)
      501347.08   3754684.12       11.82970  (11121516)                 501372.17
      3754683.06       11.63047  (11121516)
      501397.62   3754684.12       11.49559  (11121516)                 501413.88
      3754682.00       11.46147  (11121516)
      501442.16   3754678.47       11.24800  (11121516)                 501339.30
      3754636.05       11.15508  (11121516)
      501371.47   3754616.26       10.24602  (11121516)                 501384.19
      3754554.05        9.14823  (15112616)
      501221.96   3754446.25        8.86285  (15112616)                 501278.16
      3754384.75        7.83923  (15112616)
      501160.46   3754265.64        6.56691  (15112616)                 501101.79
      3754046.86        2.54912  (14121210)
      501100.73   3753964.86        2.01788  (14120216)                 500493.86
      3753958.50        4.34162  (11121216)
      500545.11   3753958.14        4.14351  (11121216)                 500583.99
      3753956.38        3.96191  (11121216)
      500231.73   3754177.54        9.94706  (11121216)                 499973.43
      3754319.99       21.41554  (13112216)
      499959.24   3754153.30        6.67647  (13112216)                 499606.37
      3754166.90        8.97648  (13112216)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                         ***        09:57:23

                    PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                   *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                      ** CONC OF NOX      IN
                                      MICROGRAMS/M**3                         **


                                                         DATE
                                                                                    NETWORK
GROUP ID                             AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      40.38720  ON 15112616: AT (  500557.31,  3754522.38,
780.21,   780.21,    0.00)  DC
```

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                     ***        09:57:23

                      PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of         1311 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           64 Calm Hours Identified

 A Total of         1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      83       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      83       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
**
***************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
PM2\14410 Construction PM2.ADI
**
***************************************
**
**
***************************************
** AERMOD Control Pathway
***************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_2.5
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction PM2.err"
CO FINISHED
**
***************************************
** AERMOD Source Pathway
***************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
   LOCATION AREA1        AREA       500108.860  3754381.920      775.110
** Source Parameters **
   SRCPARAM VOL1         0.0173247086     5.000    82.279     1.400
   SRCPARAM AREA1        1.2686E-06     0.000   354.110   354.110     0.000     1.000
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AREA1        HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
```

```
** Saturday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Construction PM2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 CONSTRUCTION PM2.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Construction PM2.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
***************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
PM2\14410 Construction PM2.ADI
**
***************************************
**
**
***************************************
** AERMOD Control Pathway
***************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_2.5
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction PM2.err"
CO FINISHED
**
***************************************
** AERMOD Source Pathway
***************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
   LOCATION AREA1        AREA       500108.860  3754381.920      775.110
** Source Parameters **
   SRCPARAM VOL1         0.0173247086     5.000    82.279     1.400
   SRCPARAM AREA1        1.2686E-06     0.000   354.110   354.110     0.000     1.000
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AREA1        HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
```

```
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Construction PM2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 CONSTRUCTION PM2.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Construction PM2.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     100       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
```

```
 ME W187     100       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                            ***       10:06:31

                     PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     2 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      2 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
```

```
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
        Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing
                                                                 Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                  ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Construction
 PM2.err
 **File for Summary of Results:   14410 Construction
 PM2.sum
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        10:06:31

                        PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.    INIT.
               URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - -

 VOL1             0   0.17325E-01  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES   HRDOW
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        10:06:31

                        PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                    *** AREA SOURCE DATA ***

               NUMBER EMISSION RATE  COORD (SW CORNER)  BASE     RELEASE  X-DIM     Y-DIM
               ORIENT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF AREA   OF AREA   OF
   AREA     SZ      SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)    (METERS) (METERS) (METERS) (METERS) (METERS)  (METERS)
     (DEG.)  (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
```

```
 AREA1            0   0.12686E-05  500108.9 3754381.9   775.1     0.00    354.11    354.11
 0.00     1.00     YES   HRDOW
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       10:06:31

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                    SOURCE IDs
 -----------                                                    ----------



  ALL        VOL1        , AREA1       ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       10:06:31

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                          SOURCE IDs
  --------   ---------                                          ----------



             2189641.   VOL1        , AREA1       ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       10:06:31

                     PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK
                   (HRDOW) *

 SOURCE ID = VOL1        ; SOURCE TYPE = VOLUME   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
    .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
    .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
    .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
    .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
   .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
```

```
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***        10:06:31

                     PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK
                  (HRDOW) *

 SOURCE ID = AREA1        ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
   .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***        10:06:31

                     PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                             *** DISCRETE CARTESIAN RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                          (METERS)

    ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
    780.4,     780.4,       0.0);
    ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
    782.0,     782.0,       0.0);
    ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
    776.2,     776.2,       0.0);
    ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
    774.5,     782.0,       0.0);
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
    778.0,     778.0,       0.0);
    ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);         ( 500000.1, 3754482.4,
```

```
    774.2,      774.2,        0.0);
    ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);          ( 500446.4, 3754903.2,
    771.1,      776.0,        0.0);
    ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);          ( 500531.0, 3755126.6,
    774.3,      774.3,        0.0);
    ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);          ( 500603.1, 3755064.1,
    775.4,      775.4,        0.0);
    ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);          ( 500664.9, 3755005.8,
    776.8,      776.8,        0.0);
    ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);          ( 500749.8, 3754946.4,
    778.1,      778.1,        0.0);
    ( 500791.8, 3754922.7,     778.4,     778.4,       0.0);          ( 500820.4, 3754899.4,
    778.5,      778.5,        0.0);
    ( 500862.5, 3754875.7,     779.0,     779.0,       0.0);          ( 500896.8, 3754859.8,
    779.2,      779.2,        0.0);
    ( 500941.7, 3754840.0,     780.0,     780.0,       0.0);          ( 500975.6, 3754824.1,
    780.8,      780.8,        0.0);
    ( 501025.4, 3754801.5,     781.0,     781.0,       0.0);          ( 501083.8, 3754779.9,
    781.9,      781.9,        0.0);
    ( 501118.8, 3754761.5,     782.0,     782.0,       0.0);          ( 501141.7, 3754750.6,
    782.3,      782.3,        0.0);
    ( 501165.0, 3754738.9,     782.5,     782.5,       0.0);          ( 501192.3, 3754733.6,
    783.0,      783.0,        0.0);
    ( 501216.3, 3754735.0,     783.2,     783.2,       0.0);          ( 501240.0, 3754734.3,
    783.7,      783.7,        0.0);
    ( 501301.1, 3754707.8,     784.3,     784.3,       0.0);          ( 501331.9, 3754683.1,
    784.7,      784.7,        0.0);
    ( 501347.1, 3754684.1,     785.1,     785.1,       0.0);          ( 501372.2, 3754683.1,
    785.5,      785.5,        0.0);
    ( 501397.6, 3754684.1,     785.9,     785.9,       0.0);          ( 501413.9, 3754682.0,
    786.4,      786.4,        0.0);
    ( 501442.2, 3754678.5,     787.0,     787.0,       0.0);          ( 501339.3, 3754636.0,
    784.9,      784.9,        0.0);
    ( 501371.5, 3754616.3,     785.0,     785.0,       0.0);          ( 501384.2, 3754554.0,
    784.6,      784.6,        0.0);
    ( 501222.0, 3754446.2,     781.0,     781.0,       0.0);          ( 501278.2, 3754384.8,
    781.9,      781.9,        0.0);
    ( 501160.5, 3754265.6,     780.0,     780.0,       0.0);          ( 501101.8, 3754046.9,
    780.0,      780.0,        0.0);
    ( 501100.7, 3753964.9,     780.0,     780.0,       0.0);          ( 500493.9, 3753958.5,
    775.9,      775.9,        0.0);
    ( 500545.1, 3753958.1,     777.9,     777.9,       0.0);          ( 500584.0, 3753956.4,
    778.3,      778.3,        0.0);
    ( 500231.7, 3754177.5,     774.0,     774.0,       0.0);          ( 499973.4, 3754320.0,
    771.6,      771.6,        0.0);
    ( 499959.2, 3754153.3,     758.1,     776.0,       0.0);          ( 499606.4, 3754166.9,
    757.3,      772.0,        0.0);
```


```
                                               *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                  (1=YES; 0=NO)

              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
```

```
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
                INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                                    ***
                                                              (METERS/SEC)

                                                   1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***       10:06:31

                      PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                          Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                 Upper air station no.:     3190
                  Name: UNKNOWN                                    Name:
                  UNKNOWN
                  Year:   2011                                     Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
 60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
```

```
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                    ***        10:06:31

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        , AREA1       ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_2.5   IN
                                          MICROGRAMS/M**3                         **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34        0.73681  (14121224)               500556.63
       3754410.67        1.38972  (15112624)
       500557.31   3754522.38        1.65089c (11121524)               500557.99
       3754617.83        1.72062c (11121524)
       500444.25   3754297.61        0.79754  (14121224)               500388.06
       3754298.29        0.73420  (14121224)
```

```
     500452.38   3754021.40       0.09788  (14121224)                 500886.33
     3754374.11        0.48975  (15112624)
     501084.01   3754379.53       0.37704  (15112624)                 501013.61
     3754294.91        0.26498  (15112624)
     500006.24   3754662.51       1.45203m (13123124)                 500000.14
     3754482.43        1.34860  (13112224)
     499973.28   3754829.30       0.51487  (15123024)                 500446.44
     3754903.20        0.30631  (13040824)
     500504.10   3755148.67       0.10487  (13040824)                 500530.97
     3755126.64        0.12426  (13040824)
     500575.15   3755089.88       0.15201  (13040824)                 500603.07
     3755064.08        0.16465  (13040824)
     500640.19   3755030.85       0.16910  (13040824)                 500664.93
     3755005.76        0.21081  (12122724)
     500711.23   3754973.95       0.26690  (13020824)                 500749.75
     3754946.38        0.30908  (13020824)
     500791.82   3754922.70       0.31311  (13020824)                 500820.44
     3754899.37        0.36901  (12121724)
     500862.50   3754875.69       0.43118  (12121724)                 500896.79
     3754859.79        0.45386  (12121724)
     500941.68   3754839.99       0.45823  (12121724)                 500975.61
     3754824.09        0.45026  (12121724)
     501025.44   3754801.47       0.42077  (12121724)                 501083.76
     3754779.91        0.41005c (11121524)
     501118.75   3754761.53       0.41595c (11121524)                 501141.73
     3754750.57        0.41483c (11121524)
     501165.05   3754738.91       0.41108c (11121524)                 501192.27
     3754733.61        0.40084c (11121524)
     501216.30   3754735.02       0.38936c (11121524)                 501239.99
     3754734.31        0.37944c (11121524)
     501301.13   3754707.80       0.36210c (11121524)                 501331.88
     3754683.06        0.34344c (11121524)
     501347.08   3754684.12       0.33748c (11121524)                 501372.17
     3754683.06        0.32668c (11121524)
     501397.62   3754684.12       0.31704c (11121524)                 501413.88
     3754682.00        0.31003c (11121524)
     501442.16   3754678.47       0.29778c (11121524)                 501339.30
     3754636.05        0.31332c (11121524)
     501371.47   3754616.26       0.28124c (11121524)                 501384.19
     3754554.05        0.23099  (15112624)
     501221.96   3754446.25       0.34281  (15112624)                 501278.16
     3754384.75        0.30260  (15112624)
     501160.46   3754265.64       0.20267  (15112624)                 501101.79
     3754046.86        0.08977  (14111224)
     501100.73   3753964.86       0.06917  (14111224)                 500493.86
     3753958.50        0.07727  (14121224)
     500545.11   3753958.14       0.08584  (14121224)                 500583.99
     3753956.38        0.08926  (14121224)
     500231.73   3754177.54       0.09557  (11090524)                 499973.43
     3754319.99        0.71751  (13112224)
     499959.24   3754153.30       0.14992  (11090524)                 499606.37
     3754166.90        0.27095  (13112224)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                            ***        10:06:31

                      PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                       ** CONC OF PM_2.5   IN
                                       MICROGRAMS/M**3                            **
```

```
                                                        DATE
                                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       1.72062c ON 11121524: AT (  500557.99,  3754617.83,
781.97,   781.97,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***       10:06:31

                      PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of         1311 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           64 Calm Hours Identified

 A Total of         1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     100       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187     100       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
PM10\14410 Construction PM10.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_10
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction PM10.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
   LOCATION AREA1        AREA       500108.860  3754381.920      775.110
** Source Parameters **
   SRCPARAM VOL1         0.0188996821     5.000    82.279     1.400
   SRCPARAM AREA1        8.3111E-06     0.000   354.110   354.110     0.000     1.000
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AREA1        HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
```

```
** Saturday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Construction PM10.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 CONSTRUCTION PM10.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Construction PM10.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Construction
PM10\14410 Construction PM10.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_10
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Construction PM10.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
   LOCATION AREA1        AREA       500108.860  3754381.920      775.110
** Source Parameters **
   SRCPARAM VOL1         0.0188996821     5.000    82.279     1.400
   SRCPARAM AREA1        8.3111E-06     0.000   354.110   354.110     0.000     1.000
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AREA1        HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
```

```
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREA1        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Construction PM10.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 CONSTRUCTION PM10.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Construction PM10.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     100       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
```

```
 ME W187     100       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                          ***        10:04:31

                     PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     2 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      2 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
```

```
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
        Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing
                                                                 Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                  ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Construction
 PM10.err
 **File for Summary of Results:   14410 Construction
 PM10.sum
```


```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                   *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.    INIT.
              URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - -

 VOL1            0   0.18900E-01  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES   HRDOW
```


```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                   *** AREA SOURCE DATA ***

              NUMBER EMISSION RATE  COORD (SW CORNER)  BASE     RELEASE  X-DIM     Y-DIM
              ORIENT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF AREA   OF AREA   OF
   AREA     SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS) (METERS)  (METERS)
     (DEG.)  (METERS)               BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
```

```
 AREA1            0   0.83111E-05  500108.9 3754381.9   775.1     0.00    354.11    354.11
 0.00     1.00     YES   HRDOW
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                           ***        10:04:31

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                              *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------



  ALL        VOL1        , AREA1       ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                           ***        10:04:31

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                             *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                      SOURCE IDs
  --------   ---------                                      ----------



             2189641.   VOL1        , AREA1       ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                           ***        10:04:31

                     PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK
                    (HRDOW) *

 SOURCE ID = VOL1         ; SOURCE TYPE = VOLUME   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
   .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
```

```
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK
                    (HRDOW) *

 SOURCE ID = AREA1        ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR
  SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
                                               DAY OF WEEK = WEEKDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01   14
   .1000E+01   15  .1000E+01   16  .1000E+01
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                               DAY OF WEEK = SATURDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
                                               DAY OF WEEK = SUNDAY
   1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00    6
   .0000E+00    7  .0000E+00    8  .0000E+00
   9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00   14
   .0000E+00   15  .0000E+00   16  .0000E+00
  17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00   22
  .0000E+00   23  .0000E+00   24  .0000E+00
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                          (METERS)

    ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
    780.4,     780.4,       0.0);
    ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
    782.0,     782.0,       0.0);
    ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
    776.2,     776.2,       0.0);
    ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
    774.5,     782.0,       0.0);
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
    778.0,     778.0,       0.0);
    ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);         ( 500000.1, 3754482.4,
```

```
    774.2,      774.2,          0.0);
    ( 499973.3, 3754829.3,      772.3,      772.3,        0.0);           ( 500446.4, 3754903.2,
    771.1,      776.0,          0.0);
    ( 500504.1, 3755148.7,      775.9,      775.9,        0.0);           ( 500531.0, 3755126.6,
    774.3,      774.3,          0.0);
    ( 500575.1, 3755089.9,      774.6,      774.6,        0.0);           ( 500603.1, 3755064.1,
    775.4,      775.4,          0.0);
    ( 500640.2, 3755030.8,      776.8,      776.8,        0.0);           ( 500664.9, 3755005.8,
    776.8,      776.8,          0.0);
    ( 500711.2, 3754973.9,      777.7,      777.7,        0.0);           ( 500749.8, 3754946.4,
    778.1,      778.1,          0.0);
    ( 500791.8, 3754922.7,      778.4,      778.4,        0.0);           ( 500820.4, 3754899.4,
    778.5,      778.5,          0.0);
    ( 500862.5, 3754875.7,      779.0,      779.0,        0.0);           ( 500896.8, 3754859.8,
    779.2,      779.2,          0.0);
    ( 500941.7, 3754840.0,      780.0,      780.0,        0.0);           ( 500975.6, 3754824.1,
    780.8,      780.8,          0.0);
    ( 501025.4, 3754801.5,      781.0,      781.0,        0.0);           ( 501083.8, 3754779.9,
    781.9,      781.9,          0.0);
    ( 501118.8, 3754761.5,      782.0,      782.0,        0.0);           ( 501141.7, 3754750.6,
    782.3,      782.3,          0.0);
    ( 501165.0, 3754738.9,      782.5,      782.5,        0.0);           ( 501192.3, 3754733.6,
    783.0,      783.0,          0.0);
    ( 501216.3, 3754735.0,      783.2,      783.2,        0.0);           ( 501240.0, 3754734.3,
    783.7,      783.7,          0.0);
    ( 501301.1, 3754707.8,      784.3,      784.3,        0.0);           ( 501331.9, 3754683.1,
    784.7,      784.7,          0.0);
    ( 501347.1, 3754684.1,      785.1,      785.1,        0.0);           ( 501372.2, 3754683.1,
    785.5,      785.5,          0.0);
    ( 501397.6, 3754684.1,      785.9,      785.9,        0.0);           ( 501413.9, 3754682.0,
    786.4,      786.4,          0.0);
    ( 501442.2, 3754678.5,      787.0,      787.0,        0.0);           ( 501339.3, 3754636.0,
    784.9,      784.9,          0.0);
    ( 501371.5, 3754616.3,      785.0,      785.0,        0.0);           ( 501384.2, 3754554.0,
    784.6,      784.6,          0.0);
    ( 501222.0, 3754446.2,      781.0,      781.0,        0.0);           ( 501278.2, 3754384.8,
    781.9,      781.9,          0.0);
    ( 501160.5, 3754265.6,      780.0,      780.0,        0.0);           ( 501101.8, 3754046.9,
    780.0,      780.0,          0.0);
    ( 501100.7, 3753964.9,      780.0,      780.0,        0.0);           ( 500493.9, 3753958.5,
    775.9,      775.9,          0.0);
    ( 500545.1, 3753958.1,      777.9,      777.9,        0.0);           ( 500584.0, 3753956.4,
    778.3,      778.3,          0.0);
    ( 500231.7, 3754177.5,      774.0,      774.0,        0.0);           ( 499973.4, 3754320.0,
    771.6,      771.6,          0.0);
    ( 499959.2, 3754153.3,      758.1,      776.0,        0.0);           ( 499606.4, 3754166.9,
    757.3,      772.0,          0.0);
```



```
                                               *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                  (1=YES; 0=NO)

          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1
```

```
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

              NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
              INCLUDED IN THE DATA FILE.


                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                                    ***
                                                                  (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                            Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                   Upper air station no.:     3190
                  Name: UNKNOWN                                     Name:
                  UNKNOWN
                  Year:   2011                                      Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
 60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
```

```
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        10:04:31

                     PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR
                               SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     VOL1        , AREA1       ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF PM_10    IN
                                         MICROGRAMS/M**3                           **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34        4.52254  (14121224)               500556.63
       3754410.67        8.67507  (15112624)
       500557.31   3754522.38       10.27142c (11121524)               500557.99
       3754617.83       10.63044c (11121524)
       500444.25   3754297.61        4.89327  (14121224)               500388.06
       3754298.29        4.49182  (14121224)
```

```
      500452.38   3754021.40       0.59199  (14121224)                500886.33
      3754374.11        3.03674  (15112624)
      501084.01   3754379.53       2.34687  (15112624)                501013.61
      3754294.91        1.62859  (15112624)
      500006.24   3754662.51       8.99104m (13123124)                500000.14
      3754482.43        8.30242  (13112224)
      499973.28   3754829.30       3.17030  (15123024)                500446.44
      3754903.20        1.87413c (12022024)
      500504.10   3755148.67       0.63770  (13040824)                500530.97
      3755126.64        0.75644  (13040824)
      500575.15   3755089.88       0.92696  (13040824)                500603.07
      3755064.08        1.00478  (13040824)
      500640.19   3755030.85       1.03221  (13040824)                500664.93
      3755005.76        1.28670  (12122724)
      500711.23   3754973.95       1.63753  (12122724)                500749.75
      3754946.38        1.89345  (13020824)
      500791.82   3754922.70       1.91960  (13020824)                500820.44
      3754899.37        2.28060  (12121724)
      500862.50   3754875.69       2.67571  (12121724)                500896.79
      3754859.79        2.82117  (12121724)
      500941.68   3754839.99       2.85119  (12121724)                500975.61
      3754824.09        2.80308  (12121724)
      501025.44   3754801.47       2.62012  (12121724)                501083.76
      3754779.91        2.58403c (11121524)
      501118.75   3754761.53       2.62538c (11121524)                501141.73
      3754750.57        2.62049c (11121524)
      501165.05   3754738.91       2.59861c (11121524)                501192.27
      3754733.61        2.53557c (11121524)
      501216.30   3754735.02       2.46415c (11121524)                501239.99
      3754734.31        2.40253c (11121524)
      501301.13   3754707.80       2.26101c (11121524)                501331.88
      3754683.06        2.14324c (11121524)
      501347.08   3754684.12       2.10547c (11121524)                501372.17
      3754683.06        2.03758c (11121524)
      501397.62   3754684.12       1.97687c (11121524)                501413.88
      3754682.00        1.93213c (11121524)
      501442.16   3754678.47       1.85477c (11121524)                501339.30
      3754636.05        1.95164c (11121524)
      501371.47   3754616.26       1.74975c (11121524)                501384.19
      3754554.05        1.42927  (15112624)
      501221.96   3754446.25       2.14398  (15112624)                501278.16
      3754384.75        1.89219  (15112624)
      501160.46   3754265.64       1.24489  (15112624)                501101.79
      3754046.86        0.55153  (14111224)
      501100.73   3753964.86       0.42408  (14111224)                500493.86
      3753958.50        0.46768  (14121224)
      500545.11   3753958.14       0.52071  (14121224)                500583.99
      3753956.38        0.54039  (14121224)
      500231.73   3754177.54       0.59041  (11090524)                499973.43
      3754319.99        4.49426  (13112224)
      499959.24   3754153.30       0.93530  (11090524)                499606.37
      3754166.90        1.69972  (13112224)
```


*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3   **

```
                                                        DATE
                                                                                    NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)           RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      10.63044c ON 11121524: AT (  500557.99,  3754617.83,
781.97,   781.97,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       10:04:31

                      PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of         1311 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           64 Calm Hours Identified

 A Total of         1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     100       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187     100       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ***********************************
    *** AERMOD Finishes Successfully ***
    ***********************************
```

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops CO\14410 Ops
CO.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 2189641
   POLLUTID CO
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops CO.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.4107530906     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops CO.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
```

```
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 OPS CO.AD\01H1GALL.PLT" 31
   PLOTFILE 8 ALL 1ST "14410 OPS CO.AD\08H1GALL.PLT" 32
   SUMMFILE "14410 Ops CO.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops CO\14410 Ops
CO.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 2189641
   POLLUTID CO
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops CO.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.4107530906     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops CO.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
```

```
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 OPS CO.AD\01H1GALL.PLT" 31
   PLOTFILE 8 ALL 1ST "14410 OPS CO.AD\08H1GALL.PLT" 32
   SUMMFILE "14410 Ops CO.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           2 Warning Message(s)
 A Total of           0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:42:37

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
```

```
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  CO

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing
                                                                 Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Ops
 CO.err
 **File for Summary of Results:   14410 Ops
 CO.sum
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:42:37

                        PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*
```

```
                                                   *** VOLUME SOURCE DATA ***

                NUMBER EMISSION RATE                       BASE    RELEASE    INIT.    INIT.
                URBAN  EMISSION RATE
   SOURCE        PART.  (GRAMS/SEC)      X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID          CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - -

 VOL1             0   0.41075E+00  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***        09:42:37

                     PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                            *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                 SOURCE IDs
 -----------                                                 ----------



  ALL        VOL1        ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***        09:42:37

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                           *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                       SOURCE IDs
  --------   ---------                                       ----------



            2189641.   VOL1        ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***        09:42:37

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
     780.4,     780.4,       0.0);
     ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
     782.0,     782.0,       0.0);
     ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
     776.2,     776.2,       0.0);
     ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
     774.5,     782.0,       0.0);
```

```
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
    778.0,     778.0,       0.0);
    ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);         ( 500000.1, 3754482.4,
    774.2,     774.2,       0.0);
    ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);         ( 500446.4, 3754903.2,
    771.1,     776.0,       0.0);
    ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);         ( 500531.0, 3755126.6,
    774.3,     774.3,       0.0);
    ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);         ( 500603.1, 3755064.1,
    775.4,     775.4,       0.0);
    ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);         ( 500664.9, 3755005.8,
    776.8,     776.8,       0.0);
    ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);         ( 500749.8, 3754946.4,
    778.1,     778.1,       0.0);
    ( 500791.8, 3754922.7,     778.4,     778.4,       0.0);         ( 500820.4, 3754899.4,
    778.5,     778.5,       0.0);
    ( 500862.5, 3754875.7,     779.0,     779.0,       0.0);         ( 500896.8, 3754859.8,
    779.2,     779.2,       0.0);
    ( 500941.7, 3754840.0,     780.0,     780.0,       0.0);         ( 500975.6, 3754824.1,
    780.8,     780.8,       0.0);
    ( 501025.4, 3754801.5,     781.0,     781.0,       0.0);         ( 501083.8, 3754779.9,
    781.9,     781.9,       0.0);
    ( 501118.8, 3754761.5,     782.0,     782.0,       0.0);         ( 501141.7, 3754750.6,
    782.3,     782.3,       0.0);
    ( 501165.0, 3754738.9,     782.5,     782.5,       0.0);         ( 501192.3, 3754733.6,
    783.0,     783.0,       0.0);
    ( 501216.3, 3754735.0,     783.2,     783.2,       0.0);         ( 501240.0, 3754734.3,
    783.7,     783.7,       0.0);
    ( 501301.1, 3754707.8,     784.3,     784.3,       0.0);         ( 501331.9, 3754683.1,
    784.7,     784.7,       0.0);
    ( 501347.1, 3754684.1,     785.1,     785.1,       0.0);         ( 501372.2, 3754683.1,
    785.5,     785.5,       0.0);
    ( 501397.6, 3754684.1,     785.9,     785.9,       0.0);         ( 501413.9, 3754682.0,
    786.4,     786.4,       0.0);
    ( 501442.2, 3754678.5,     787.0,     787.0,       0.0);         ( 501339.3, 3754636.0,
    784.9,     784.9,       0.0);
    ( 501371.5, 3754616.3,     785.0,     785.0,       0.0);         ( 501384.2, 3754554.0,
    784.6,     784.6,       0.0);
    ( 501222.0, 3754446.2,     781.0,     781.0,       0.0);         ( 501278.2, 3754384.8,
    781.9,     781.9,       0.0);
    ( 501160.5, 3754265.6,     780.0,     780.0,       0.0);         ( 501101.8, 3754046.9,
    780.0,     780.0,       0.0);
    ( 501100.7, 3753964.9,     780.0,     780.0,       0.0);         ( 500493.9, 3753958.5,
    775.9,     775.9,       0.0);
    ( 500545.1, 3753958.1,     777.9,     777.9,       0.0);         ( 500584.0, 3753956.4,
    778.3,     778.3,       0.0);
    ( 500231.7, 3754177.5,     774.0,     774.0,       0.0);         ( 499973.4, 3754320.0,
    771.6,     771.6,       0.0);
    ( 499959.2, 3754153.3,     758.1,     776.0,       0.0);         ( 499606.4, 3754166.9,
    757.3,     772.0,       0.0);
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:42:37

                      PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
```

```
          1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

              NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
              INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                                    ***
                                                                  (METERS/SEC)

                                                   1.54,   3.09,   5.14,   8.23,  10.80,
```


```
                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                             Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                  Upper air station no.:     3190
                  Name: UNKNOWN                                    Name:
                  UNKNOWN
                  Year:   2011                                     Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
```

```
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
 60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                    ***        09:42:37

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR
                               SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     VOL1        ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF CO       IN
                                         MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34       18.60841  (11092320)              500556.63
       3754410.67       22.11526  (14091522)
       500557.31   3754522.38       25.50558  (11080406)              500557.99
```

```
      3754617.83       25.25536  (15062906)
      500444.25   3754297.61      21.60404  (15102905)                500388.06
      3754298.29       22.98493  (14121205)
      500452.38   3754021.40      10.12648  (11020703)                500886.33
      3754374.11        9.15721  (14040618)
      501084.01   3754379.53       6.83158  (14062006)                501013.61
      3754294.91        7.34566  (14040618)
      500006.24   3754662.51      21.18866  (11101219)                500000.14
      3754482.43       21.28973  (13081806)
      499973.28   3754829.30      14.24092  (12040719)                500446.44
      3754903.20       15.60878  (14103017)
      500504.10   3755148.67       9.31481  (14103017)                500530.97
      3755126.64        9.40254  (14103017)
      500575.15   3755089.88       9.11283  (14103017)                500603.07
      3755064.08        9.66780  (14071401)
      500640.19   3755030.85       9.83027  (14071401)                500664.93
      3755005.76        9.85097  (11021918)
      500711.23   3754973.95       9.91047  (12081119)                500749.75
      3754946.38        9.95292  (11041618)
      500791.82   3754922.70       9.80516  (11041618)                500820.44
      3754899.37        9.42080  (11041618)
      500862.50   3754875.69       9.09546  (15062819)                500896.79
      3754859.79        8.66629  (15062819)
      500941.68   3754839.99       8.19426  (15101717)                500975.61
      3754824.09        7.80468  (13071106)
      501025.44   3754801.47       7.34026  (14070606)                501083.76
      3754779.91        6.74504  (14062906)
      501118.75   3754761.53       6.37661  (14062906)                501141.73
      3754750.57        6.21506  (15062906)
      501165.05   3754738.91       6.08354  (15062906)                501192.27
      3754733.61        5.87740  (15062906)
      501216.30   3754735.02       5.68441  (15062906)                501239.99
      3754734.31        5.50531  (15062906)
      501301.13   3754707.80       7.59771  (15092318)                501331.88
      3754683.06        7.45562  (15092318)
      501347.08   3754684.12       7.43433  (15092318)                501372.17
      3754683.06        7.32185  (14091601)
      501397.62   3754684.12       7.24596  (14091601)                501413.88
      3754682.00        7.25502  (13091422)
      501442.16   3754678.47       7.19343  (11090623)                501339.30
      3754636.05        7.45728  (15092422)
      501371.47   3754616.26       7.23405  (14090520)                501384.19
      3754554.05        7.03945  (14100507)
      501221.96   3754446.25       5.56025  (14080406)                501278.16
      3754384.75        5.10655  (11080406)
      501160.46   3754265.64       5.79320  (14040618)                501101.79
      3754046.86        5.33849  (13091421)
      501100.73   3753964.86       5.01649  (11082723)                500493.86
      3753958.50        8.72526  (14121205)
      500545.11   3753958.14       8.64458  (15111622)                500583.99
      3753956.38        8.39611  (14043024)
      500231.73   3754177.54      15.78091  (14101321)                499973.43
      3754319.99       15.00403  (12081702)
      499959.24   3754153.30       9.37910  (14120708)                499606.37
      3754166.90        5.80659  (15120208)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14414 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                         ***        09:42:37

                        PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
500554.60	3754323.34	13.41491	(13012908)	500556.63	3754410.67	19.17694	(14122008)
500557.31	3754522.38	22.56965	(15020108)	500557.99	3754617.83	23.42794	(14112908)
500444.25	3754297.61	11.53516	(13012908)	500388.06	3754298.29	12.07386	(11020708)
500452.38	3754021.40	3.91688	(11020708)	500886.33	3754374.11	7.58875	(15121308)
501084.01	3754379.53	5.36151	(15020108)	501013.61	3754294.91	5.83750	(14122008)
500006.24	3754662.51	17.02083	(15012708)	500000.14	3754482.43	18.18509	(11010208)
499973.28	3754829.30	6.51186	(15030608)	500446.44	3754903.20	6.90632	(13120524)
500504.10	3755148.67	2.90232	(11030508)	500530.97	3755126.64	3.14432	(13120524)
500575.15	3755089.88	3.72329	(13120524)	500603.07	3755064.08	4.09508	(13120524)
500640.19	3755030.85	4.46949	(13120524)	500664.93	3755005.76	4.62836	(13120524)
500711.23	3754973.95	4.94423	(13021708)	500749.75	3754946.38	5.90993	(13021708)
500791.82	3754922.70	6.59137	(13021708)	500820.44	3754899.37	7.06870	(13021708)
500862.50	3754875.69	7.26456	(13021708)	500896.79	3754859.79	7.17225	(13021708)
500941.68	3754839.99	6.85848	(13021708)	500975.61	3754824.09	6.78121	(14112908)
501025.44	3754801.47	6.55348	(14112908)	501083.76	3754779.91	6.08408	(14112908)
501118.75	3754761.53	5.75959	(14112908)	501141.73	3754750.57	5.52406	(14112908)
501165.05	3754738.91	5.27425	(14112908)	501192.27	3754733.61	5.08752	(15112408)
501216.30	3754735.02	4.92345	(15112408)	501239.99	3754734.31	4.77887	(15112408)
501301.13	3754707.80	6.51094	(15112408)	501331.88	3754683.06	6.42216	(15112408)
501347.08	3754684.12	6.38530	(11012208)	501372.17	3754683.06	6.32339	(11012208)
501397.62	3754684.12	6.28302	(11012208)	501413.88	3754682.00	6.31617	(11012208)
501442.16	3754678.47	6.27130	(11012208)	501339.30	3754636.05	6.39420	(11012208)
501371.47	3754616.26	6.06586	(11012208)	501384.19	3754554.05	6.06061	(14010924)
501221.96	3754446.25	4.42063	(15020108)	501278.16	3754384.75	4.07553	(15102008)
501160.46	3754265.64	4.61753	(15121308)	501101.79	3754046.86	3.66940	(14122008)
501100.73	3753964.86	3.15119	(13012908)	500493.86	3753958.50	3.26231	(11020708)
500545.11	3753958.14	3.19998	(11020708)	500583.99	3753956.38	3.09659	(11020708)
500231.73	3754177.54	10.69250	(13010508)	499973.43	3754319.99	13.77994	(15120208)

```
        499959.24   3754153.30        8.61438  (15113008)               499606.37
        3754166.90        4.80495  (11010208)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:42:37

                      PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                  *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                      ** CONC OF CO       IN
                                      MICROGRAMS/M**3                          **


                                                        DATE
                                                                                  NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      25.50558  ON 11080406: AT (  500557.31,  3754522.38,
780.21,   780.21,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:42:37

                      PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                  *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***


                                      ** CONC OF CO       IN
                                      MICROGRAMS/M**3                          **


                                                        DATE
                                                                                  NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      23.42794  ON 14112908: AT (  500557.99,  3754617.83,
781.97,   781.97,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:42:37
```

```
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            2 Warning Message(s)
A Total of         1311 Informational Message(s)

A Total of        43824 Hours Were Processed

A Total of           64 Calm Hours Identified

A Total of         1247 Missing Hours Identified (  2.85 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops NO2\14410 
Ops NO2.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1
   URBANOPT 2189641
   POLLUTID NOX
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops NO2.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0660228894     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops NO2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
```

```
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH
   RECTABLE 1 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 OPS NO2.AD\01H1GALL.PLT" 31
   PLOTFILE 1 ALL 8TH "14410 OPS NO2.AD\01H8GALL.PLT" 32
   SUMMFILE "14410 Ops NO2.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops NO2\14410
Ops NO2.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 1
   URBANOPT 2189641
   POLLUTID NOX
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops NO2.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0660228894     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops NO2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
```

```
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST 8TH
   RECTABLE 1 1ST 8TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "14410 OPS NO2.AD\01H1GALL.PLT" 31
   PLOTFILE 1 ALL 8TH "14410 OPS NO2.AD\01H8GALL.PLT" 32
   SUMMFILE "14410 Ops NO2.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:45:06

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
```

```
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  NOX

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing
                                                                 Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Ops
 NO2.err
 **File for Summary of Results:   14410 Ops
 NO2.sum
```

```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*
```

```
                                          *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                       BASE    RELEASE    INIT.    INIT.
              URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID         CATS.               (METERS)  (METERS)  (METERS)  (METERS)  (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - -

 VOL1            0   0.66023E-01  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***       09:45:06

                     PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                      *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------


  ALL        VOL1        ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***       09:45:06

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                      *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                      SOURCE IDs
  --------   ---------                                      ----------


             2189641.   VOL1        ,
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                  ***       09:45:06

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                         *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                      (METERS)

    ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
    780.4,     780.4,       0.0);
    ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
    782.0,     782.0,       0.0);
    ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
    776.2,     776.2,       0.0);
    ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
    774.5,     782.0,       0.0);
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
```

```
    778.0,     778.0,       0.0);
    ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);        ( 500000.1, 3754482.4,
    774.2,     774.2,       0.0);
    ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);        ( 500446.4, 3754903.2,
    771.1,     776.0,       0.0);
    ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);        ( 500531.0, 3755126.6,
    774.3,     774.3,       0.0);
    ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);        ( 500603.1, 3755064.1,
    775.4,     775.4,       0.0);
    ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);        ( 500664.9, 3755005.8,
    776.8,     776.8,       0.0);
    ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);        ( 500749.8, 3754946.4,
    778.1,     778.1,       0.0);
    ( 500791.8, 3754922.7,     778.4,     778.4,       0.0);        ( 500820.4, 3754899.4,
    778.5,     778.5,       0.0);
    ( 500862.5, 3754875.7,     779.0,     779.0,       0.0);        ( 500896.8, 3754859.8,
    779.2,     779.2,       0.0);
    ( 500941.7, 3754840.0,     780.0,     780.0,       0.0);        ( 500975.6, 3754824.1,
    780.8,     780.8,       0.0);
    ( 501025.4, 3754801.5,     781.0,     781.0,       0.0);        ( 501083.8, 3754779.9,
    781.9,     781.9,       0.0);
    ( 501118.8, 3754761.5,     782.0,     782.0,       0.0);        ( 501141.7, 3754750.6,
    782.3,     782.3,       0.0);
    ( 501165.0, 3754738.9,     782.5,     782.5,       0.0);        ( 501192.3, 3754733.6,
    783.0,     783.0,       0.0);
    ( 501216.3, 3754735.0,     783.2,     783.2,       0.0);        ( 501240.0, 3754734.3,
    783.7,     783.7,       0.0);
    ( 501301.1, 3754707.8,     784.3,     784.3,       0.0);        ( 501331.9, 3754683.1,
    784.7,     784.7,       0.0);
    ( 501347.1, 3754684.1,     785.1,     785.1,       0.0);        ( 501372.2, 3754683.1,
    785.5,     785.5,       0.0);
    ( 501397.6, 3754684.1,     785.9,     785.9,       0.0);        ( 501413.9, 3754682.0,
    786.4,     786.4,       0.0);
    ( 501442.2, 3754678.5,     787.0,     787.0,       0.0);        ( 501339.3, 3754636.0,
    784.9,     784.9,       0.0);
    ( 501371.5, 3754616.3,     785.0,     785.0,       0.0);        ( 501384.2, 3754554.0,
    784.6,     784.6,       0.0);
    ( 501222.0, 3754446.2,     781.0,     781.0,       0.0);        ( 501278.2, 3754384.8,
    781.9,     781.9,       0.0);
    ( 501160.5, 3754265.6,     780.0,     780.0,       0.0);        ( 501101.8, 3754046.9,
    780.0,     780.0,       0.0);
    ( 501100.7, 3753964.9,     780.0,     780.0,       0.0);        ( 500493.9, 3753958.5,
    775.9,     775.9,       0.0);
    ( 500545.1, 3753958.1,     777.9,     777.9,       0.0);        ( 500584.0, 3753956.4,
    778.3,     778.3,       0.0);
    ( 500231.7, 3754177.5,     774.0,     774.0,       0.0);        ( 499973.4, 3754320.0,
    771.6,     771.6,       0.0);
    ( 499959.2, 3754153.3,     758.1,     776.0,       0.0);        ( 499606.4, 3754166.9,
    757.3,     772.0,       0.0);
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:45:06

                        PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
              1   1 1 1 1 1 1 1 1 1 1
```

```
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

            NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
            INCLUDED IN THE DATA FILE.


                      *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                      ***
                                                        (METERS/SEC)

                                           1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                    ***        09:45:06

                     PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                        Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                   Upper air station no.:     3190
                  Name: UNKNOWN                                     Name:
                  UNKNOWN
                  Year:   2011                                      Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
```

```
 60.    9.1  270.9    5.5
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:45:06

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN
                                         MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34        2.99105  (11092320)               500556.63
       3754410.67        3.55472  (14091522)
       500557.31   3754522.38        4.09967  (11080406)               500557.99
       3754617.83        4.05945  (15062906)
```

```
      500444.25   3754297.61        3.47255  (15102905)                 500388.06
      3754298.29        3.69451  (14121205)
      500452.38   3754021.40        1.62769  (11020703)                 500886.33
      3754374.11        1.47190  (14040618)
      501084.01   3754379.53        1.09808  (14062006)                 501013.61
      3754294.91        1.18071  (14040618)
      500006.24   3754662.51        3.40578  (11101219)                 500000.14
      3754482.43        3.42203  (13081806)
      499973.28   3754829.30        2.28903  (12040719)                 500446.44
      3754903.20        2.50890  (14103017)
      500504.10   3755148.67        1.49723  (14103017)                 500530.97
      3755126.64        1.51133  (14103017)
      500575.15   3755089.88        1.46476  (14103017)                 500603.07
      3755064.08        1.55396  (14071401)
      500640.19   3755030.85        1.58008  (14071401)                 500664.93
      3755005.76        1.58341  (11021918)
      500711.23   3754973.95        1.59297  (12081119)                 500749.75
      3754946.38        1.59979  (11041618)
      500791.82   3754922.70        1.57604  (11041618)                 500820.44
      3754899.37        1.51426  (11041618)
      500862.50   3754875.69        1.46197  (15062819)                 500896.79
      3754859.79        1.39299  (15062819)
      500941.68   3754839.99        1.31711  (15101717)                 500975.61
      3754824.09        1.25449  (13071106)
      501025.44   3754801.47        1.17984  (14070606)                 501083.76
      3754779.91        1.08417  (14062906)
      501118.75   3754761.53        1.02495  (14062906)                 501141.73
      3754750.57        0.99899  (15062906)
      501165.05   3754738.91        0.97785  (15062906)                 501192.27
      3754733.61        0.94471  (15062906)
      501216.30   3754735.02        0.91369  (15062906)                 501239.99
      3754734.31        0.88490  (15062906)
      501301.13   3754707.80        1.22123  (15092318)                 501331.88
      3754683.06        1.19839  (15092318)
      501347.08   3754684.12        1.19497  (15092318)                 501372.17
      3754683.06        1.17689  (14091601)
      501397.62   3754684.12        1.16469  (14091601)                 501413.88
      3754682.00        1.16614  (13091422)
      501442.16   3754678.47        1.15625  (11090623)                 501339.30
      3754636.05        1.19865  (15092422)
      501371.47   3754616.26        1.16277  (14090520)                 501384.19
      3754554.05        1.13149  (14100507)
      501221.96   3754446.25        0.89373  (14080406)                 501278.16
      3754384.75        0.82081  (11080406)
      501160.46   3754265.64        0.93118  (14040618)                 501101.79
      3754046.86        0.85809  (13091421)
      501100.73   3753964.86        0.80633  (11082723)                 500493.86
      3753958.50        1.40247  (14121205)
      500545.11   3753958.14        1.38950  (15111622)                 500583.99
      3753956.38        1.34956  (14043024)
      500231.73   3754177.54        2.53656  (14101321)                 499973.43
      3754319.99        2.41169  (12081702)
      499959.24   3754153.30        1.50756  (14120708)                 499606.37
      3754166.90        0.93333  (15120208)
```


*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE 8TH HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): VOL1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
500554.60	3754323.34	2.93652	(11122306)	500556.63	3754410.67	3.52305	(11090405)
500557.31	3754522.38	4.03657	(14051521)	500557.99	3754617.83	3.99720	(13092407)
500444.25	3754297.61	3.38327	(11022821)	500388.06	3754298.29	3.59878	(11103021)
500452.38	3754021.40	1.47139	(13102220)	500886.33	3754374.11	1.45536	(15062904)
501084.01	3754379.53	1.05941	(12100301)	501013.61	3754294.91	1.13855	(13090304)
500006.24	3754662.51	3.35535	(14022118)	500000.14	3754482.43	3.38282	(14110603)
499973.28	3754829.30	2.15458	(14121206)	500446.44	3754903.20	2.17439	(12122418)
500504.10	3755148.67	1.22820	(11040404)	500530.97	3755126.64	1.24563	(11040404)
500575.15	3755089.88	1.31072	(11033119)	500603.07	3755064.08	1.43127	(12021124)
500640.19	3755030.85	1.51857	(11021918)	500664.93	3755005.76	1.52611	(14071401)
500711.23	3754973.95	1.53140	(11090319)	500749.75	3754946.38	1.54716	(13050320)
500791.82	3754922.70	1.49092	(12111819)	500820.44	3754899.37	1.47674	(11070620)
500862.50	3754875.69	1.41140	(12080702)	500896.79	3754859.79	1.35574	(12080702)
500941.68	3754839.99	1.28391	(14062806)	500975.61	3754824.09	1.23175	(14102417)
501025.44	3754801.47	1.14542	(11070619)	501083.76	3754779.91	1.05089	(11102017)
501118.75	3754761.53	1.00593	(13062706)	501141.73	3754750.57	0.98009	(13092407)
501165.05	3754738.91	0.94742	(14012717)	501192.27	3754733.61	0.91827	(14070306)
501216.30	3754735.02	0.88604	(14072406)	501239.99	3754734.31	0.85447	(14072406)
501301.13	3754707.80	1.20311	(15103118)	501331.88	3754683.06	1.18734	(14090724)
501347.08	3754684.12	1.18472	(14090724)	501372.17	3754683.06	1.16842	(14090724)
501397.62	3754684.12	1.15641	(14090724)	501413.88	3754682.00	1.16140	(15073003)
501442.16	3754678.47	1.15201	(14100424)	501339.30	3754636.05	1.19062	(15092602)
501371.47	3754616.26	1.15410	(12082905)	501384.19	3754554.05	1.12003	(14081704)
501221.96	3754446.25	0.87858	(15042921)	501278.16	3754384.75	0.80349	(14070423)
501160.46	3754265.64	0.90808	(15062904)	501101.79	3754046.86	0.84701	(11070623)
501100.73	3753964.86	0.79583	(15041722)	500493.86	3753958.50	1.26923	(13050123)
500545.11	3753958.14	1.25767	(11022821)	500583.99	3753956.38	1.27498	(11022821)
500231.73	3754177.54	2.49765	(13012101)	499973.43	3754319.99	2.38048	(14110423)
499959.24	3754153.30	1.46972	(13082424)	499606.37			

```
      3754166.90        0.90257  (13112205)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                          ***        09:45:06

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                  *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF NOX      IN
                                    MICROGRAMS/M**3                          **


                                                        DATE
                                                                                     NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       4.09967  ON 11080406: AT (  500557.31,  3754522.38,
780.21,   780.21,    0.00)  DC
         HIGH   8TH HIGH VALUE IS       4.03657  ON 14051521: AT (  500557.31,  3754522.38,
         780.21,   780.21,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                          ***        09:45:06

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           2 Warning Message(s)
 A Total of        1311 Informational Message(s)

 A Total of       43824 Hours Were Processed

 A Total of          64 Calm Hours Identified

 A Total of        1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65      MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ***********************************
    *** AERMOD Finishes Successfully ***
```

****

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops PM2\14410
Ops PM2.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_2.5
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops PM2.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0038807347     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops PM2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
```

```
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 OPS PM2.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Ops PM2.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops PM2\14410 Ops PM2.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_2.5
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops PM2.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0038807347     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops PM2.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
```

```
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 OPS PM2.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Ops PM2.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ************************************
 *** SETUP Finishes Successfully ***
 ************************************

 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                            ***        09:48:00

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
```

```
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing
                                                                 Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                               ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Ops
 PM2.err
 **File for Summary of Results:   14410 Ops
 PM2.sum
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***        09:48:00

                        PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***
```

```
              NUMBER EMISSION RATE                     BASE    RELEASE    INIT.    INIT.
              URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
   SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
     (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - -

 VOL1            0   0.38807E-02  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***       09:48:00

                     PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------

  ALL        VOL1       ,
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***       09:48:00

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                             *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                      SOURCE IDs
  --------   ---------                                      ----------

             2189641.   VOL1       ,
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***       09:48:00

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                *** DISCRETE CARTESIAN RECEPTORS ***
                                              (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

     ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
     780.4,     780.4,       0.0);
     ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
     782.0,     782.0,       0.0);
     ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
     776.2,     776.2,       0.0);
     ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
     774.5,     782.0,       0.0);
     ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
     778.0,     778.0,       0.0);
```

```
( 500006.2, 3754662.5,     774.4,     774.4,       0.0);          ( 500000.1, 3754482.4,
774.2,     774.2,       0.0);
( 499973.3, 3754829.3,     772.3,     772.3,       0.0);          ( 500446.4, 3754903.2,
771.1,     776.0,       0.0);
( 500504.1, 3755148.7,     775.9,     775.9,       0.0);          ( 500531.0, 3755126.6,
774.3,     774.3,       0.0);
( 500575.1, 3755089.9,     774.6,     774.6,       0.0);          ( 500603.1, 3755064.1,
775.4,     775.4,       0.0);
( 500640.2, 3755030.8,     776.8,     776.8,       0.0);          ( 500664.9, 3755005.8,
776.8,     776.8,       0.0);
( 500711.2, 3754973.9,     777.7,     777.7,       0.0);          ( 500749.8, 3754946.4,
778.1,     778.1,       0.0);
( 500791.8, 3754922.7,     778.4,     778.4,       0.0);          ( 500820.4, 3754899.4,
778.5,     778.5,       0.0);
( 500862.5, 3754875.7,     779.0,     779.0,       0.0);          ( 500896.8, 3754859.8,
779.2,     779.2,       0.0);
( 500941.7, 3754840.0,     780.0,     780.0,       0.0);          ( 500975.6, 3754824.1,
780.8,     780.8,       0.0);
( 501025.4, 3754801.5,     781.0,     781.0,       0.0);          ( 501083.8, 3754779.9,
781.9,     781.9,       0.0);
( 501118.8, 3754761.5,     782.0,     782.0,       0.0);          ( 501141.7, 3754750.6,
782.3,     782.3,       0.0);
( 501165.0, 3754738.9,     782.5,     782.5,       0.0);          ( 501192.3, 3754733.6,
783.0,     783.0,       0.0);
( 501216.3, 3754735.0,     783.2,     783.2,       0.0);          ( 501240.0, 3754734.3,
783.7,     783.7,       0.0);
( 501301.1, 3754707.8,     784.3,     784.3,       0.0);          ( 501331.9, 3754683.1,
784.7,     784.7,       0.0);
( 501347.1, 3754684.1,     785.1,     785.1,       0.0);          ( 501372.2, 3754683.1,
785.5,     785.5,       0.0);
( 501397.6, 3754684.1,     785.9,     785.9,       0.0);          ( 501413.9, 3754682.0,
786.4,     786.4,       0.0);
( 501442.2, 3754678.5,     787.0,     787.0,       0.0);          ( 501339.3, 3754636.0,
784.9,     784.9,       0.0);
( 501371.5, 3754616.3,     785.0,     785.0,       0.0);          ( 501384.2, 3754554.0,
784.6,     784.6,       0.0);
( 501222.0, 3754446.2,     781.0,     781.0,       0.0);          ( 501278.2, 3754384.8,
781.9,     781.9,       0.0);
( 501160.5, 3754265.6,     780.0,     780.0,       0.0);          ( 501101.8, 3754046.9,
780.0,     780.0,       0.0);
( 501100.7, 3753964.9,     780.0,     780.0,       0.0);          ( 500493.9, 3753958.5,
775.9,     775.9,       0.0);
( 500545.1, 3753958.1,     777.9,     777.9,       0.0);          ( 500584.0, 3753956.4,
778.3,     778.3,       0.0);
( 500231.7, 3754177.5,     774.0,     774.0,       0.0);          ( 499973.4, 3754320.0,
771.6,     771.6,       0.0);
( 499959.2, 3754153.3,     758.1,     776.0,       0.0);          ( 499606.4, 3754166.9,
757.3,     772.0,       0.0);
```


*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
```

1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

FF *** AERMOD - VERSION 21112 *** *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op *** 09/08/22
*** AERMET - VERSION 16216 ***
*** *** 09:48:00

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*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file:
BNAP_V9_ADJU\BNAP_v9.SFC Met
Version: 16216
Profile file:
BNAP_V9_ADJU\BNAP_v9.PFL
Surface format:
FREE

Profile format:
FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name:
UNKNOWN
Year: 2011 Year: 2011

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
11	01	01	1	01	-50.0	0.519	-9.000	-9.000	-999.	897.	296.2	0.15	4.23	1.00	5.40	108.	9.1	274.2	5.5
11	01	01	1	02	-54.0	0.559	-9.000	-9.000	-999.	1002.	343.7	0.15	4.23	1.00	5.80	113.	9.1	273.8	5.5
11	01	01	1	03	-50.2	0.519	-9.000	-9.000	-999.	899.	296.1	0.15	4.23	1.00	5.40	112.	9.1	273.1	5.5
11	01	01	1	04	-45.5	0.469	-9.000	-9.000	-999.	773.	241.8	0.15	4.23	1.00	4.90	111.	9.1	272.5	5.5
11	01	01	1	05	-13.5	0.164	-9.000	-9.000	-999.	293.	29.5	0.15	4.23	1.00	1.80	78.	9.1	270.9	5.5
11	01	01	1	06	-19.9	0.203	-9.000	-9.000	-999.	220.	45.4	0.15	4.23	1.00	2.20	58.	9.1	270.4	5.5
11	01	01	1	07	-19.9	0.203	-9.000	-9.000	-999.	220.	45.4	0.15	4.23	1.00	2.20	54.	9.1	270.4	5.5
11	01	01	1	08	-12.2	0.206	-9.000	-9.000	-999.	224.	60.4	0.15	4.23	0.55	2.20	60.	9.1	270.9	5.5

```
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***        09:48:00

                     PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR
                                SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     VOL1        ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_2.5   IN
                                          MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
     (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - -
       500554.60   3754323.34        0.06791  (13012924)                500556.63
       3754410.67        0.10775  (13122024)
       500557.31   3754522.38        0.15630  (14010924)                500557.99
       3754617.83        0.15135m (15020724)
       500444.25   3754297.61        0.06176  (15102924)                500388.06
```

```
3754298.29        0.06891c (12122924)
500452.38   3754021.40        0.02122c (12122924)                        500886.33
3754374.11        0.04321  (13122024)
501084.01   3754379.53        0.03149  (14010924)                        501013.61
3754294.91        0.03163  (13122024)
500006.24   3754662.51        0.11009  (14120324)                        500000.14
3754482.43        0.12410  (11010224)
499973.28   3754829.30        0.04040  (15123024)                        500446.44
3754903.20        0.03970  (13120524)
500504.10   3755148.67        0.01576  (13011224)                        500530.97
3755126.64        0.01701  (13120524)
500575.15   3755089.88        0.01998  (13120524)                        500603.07
3755064.08        0.02201  (13120524)
500640.19   3755030.85        0.02424  (13120524)                        500664.93
3755005.76        0.02539  (13120524)
500711.23   3754973.95        0.02727  (13011124)                        500749.75
3754946.38        0.02976  (12121524)
500791.82   3754922.70        0.03283  (12121524)                        500820.44
3754899.37        0.03496  (13102924)
500862.50   3754875.69        0.03714  (13102924)                        500896.79
3754859.79        0.03750  (13102924)
500941.68   3754839.99        0.03685  (13102924)                        500975.61
3754824.09        0.03637  (13111924)
501025.44   3754801.47        0.03499  (13111924)                        501083.76
3754779.91        0.03273m (15020724)
501118.75   3754761.53        0.03197m (15020724)                        501141.73
3754750.57        0.03128m (15020724)
501165.05   3754738.91        0.03053m (15020724)                        501192.27
3754733.61        0.02940m (15020724)
501216.30   3754735.02        0.02832m (15020724)                        501239.99
3754734.31        0.02735m (15020724)
501301.13   3754707.80        0.03660  (15010924)                        501331.88
3754683.06        0.03630  (15010924)
501347.08   3754684.12        0.03595  (15010924)                        501372.17
3754683.06        0.03518  (15010924)
501397.62   3754684.12        0.03447  (15010924)                        501413.88
3754682.00        0.03421  (15010924)
501442.16   3754678.47        0.03348  (15010924)                        501339.30
3754636.05        0.03656  (15010924)
501371.47   3754616.26        0.03483  (15010924)                        501384.19
3754554.05        0.03651  (14010924)
501221.96   3754446.25        0.02861  (14010924)                        501278.16
3754384.75        0.02452  (14010924)
501160.46   3754265.64        0.02468  (13122024)                        501101.79
3754046.86        0.01646  (13122024)
501100.73   3753964.86        0.01477  (13012924)                        500493.86
3753958.50        0.01723c (11122924)
500545.11   3753958.14        0.01672c (11122924)                        500583.99
3753956.38        0.01609c (11122924)
500231.73   3754177.54        0.04800  (13020224)                        499973.43
3754319.99        0.07618  (15010424)
499959.24   3754153.30        0.04143m (12122124)                        499606.37
3754166.90        0.02828  (15010424)
```



```
                                                    *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                       ** CONC OF PM_2.5   IN
                                       MICROGRAMS/M**3                               **
```

```
                                                        DATE
                                                                                   NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)           RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.15630  ON 14010924: AT (  500557.31,  3754522.38,
780.21,   780.21,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                      ***       09:48:00

                      PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of         1311 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           64 Calm Hours Identified

 A Total of         1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
**
***************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops PM10\14410
Ops PM10.ADI
**
***************************************
**
**
***************************************
** AERMOD Control Pathway
***************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_10
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops PM10.err"
CO FINISHED
**
***************************************
** AERMOD Source Pathway
***************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0063250936     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
***************************************
** AERMOD Receptor Pathway
***************************************
**
**
RE STARTING
   INCLUDED "14410 Ops PM10.rou"
RE FINISHED
**
***************************************
** AERMOD Meteorology Pathway
***************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
ME FINISHED
```

```
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 OPS PM10.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Ops PM10.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     11
** ZONEINX  0
**
```

```
** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.2.1
** Lakes Environmental Software Inc.
** Date: 9/8/2022
** File: C:\Users\Michael Tirohn\Desktop\HRAs\14410 Orchard Logistics\LST\14410 Ops PM10\14410
Ops PM10.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont Dowling\14410 Op
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 2189641
   POLLUTID PM_10
   FLAGPOLE 0.00
   RUNORNOT RUN
   ERRORFIL "14410 Ops PM10.err"
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL1         VOLUME     500285.963  3754559.075      779.070
** Source Parameters **
   SRCPARAM VOL1         0.0063250936     5.000    82.279     1.400
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED "14410 Ops PM10.rou"
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE BNAP_V9_ADJU\BNAP_v9.SFC
   PROFFILE BNAP_V9_ADJU\BNAP_v9.PFL
   SURFDATA 3171 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 660.0 METERS
```

```
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST "14410 OPS PM10.AD\24H1GALL.PLT" 31
   SUMMFILE "14410 Ops PM10.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           2 Warning Message(s)
 A Total of           0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ************************************
 *** SETUP Finishes Successfully ***
 ************************************

 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:47:05

                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
```

```
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      58 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      1 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing
                                                                Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   660.00 ;  Decay Coef. =
 0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                               ;  Emission Rate
                  Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:
 aermod.inp
 **Output Print File:
 aermod.out

 **Detailed Error/Message File:   14410 Ops
 PM10.err
 **File for Summary of Results:   14410 Ops
 PM10.sum
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                        ***       09:47:05

                        PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***
```

```
             NUMBER EMISSION RATE                        BASE    RELEASE    INIT.    INIT.
             URBAN  EMISSION RATE
  SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ
  SOURCE  SCALAR VARY
    ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
    (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - -

 VOL1             0   0.63251E-02  500286.0 3754559.1   779.1     5.00    82.28     1.40
 YES
```

```
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                     ***       09:47:05

                     PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------

  ALL        VOL1       ,
```

```
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                     ***       09:47:05

                     PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                      SOURCE IDs
  --------   ---------                                      ----------

             2189641.   VOL1       ,
```

```
 *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                     ***       09:47:05

                     PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                               *** DISCRETE CARTESIAN RECEPTORS ***
                                             (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

    ( 500554.6, 3754323.3,     780.0,     780.0,       0.0);         ( 500556.6, 3754410.7,
    780.4,     780.4,       0.0);
    ( 500557.3, 3754522.4,     780.2,     780.2,       0.0);         ( 500558.0, 3754617.8,
    782.0,     782.0,       0.0);
    ( 500444.2, 3754297.6,     778.0,     778.0,       0.0);         ( 500388.1, 3754298.3,
    776.2,     776.2,       0.0);
    ( 500452.4, 3754021.4,     775.9,     775.9,       0.0);         ( 500886.3, 3754374.1,
    774.5,     782.0,       0.0);
    ( 501084.0, 3754379.5,     778.2,     778.2,       0.0);         ( 501013.6, 3754294.9,
    778.0,     778.0,       0.0);
```

```
     ( 500006.2, 3754662.5,     774.4,     774.4,       0.0);         ( 500000.1, 3754482.4,
     774.2,     774.2,       0.0);
     ( 499973.3, 3754829.3,     772.3,     772.3,       0.0);         ( 500446.4, 3754903.2,
     771.1,     776.0,       0.0);
     ( 500504.1, 3755148.7,     775.9,     775.9,       0.0);         ( 500531.0, 3755126.6,
     774.3,     774.3,       0.0);
     ( 500575.1, 3755089.9,     774.6,     774.6,       0.0);         ( 500603.1, 3755064.1,
     775.4,     775.4,       0.0);
     ( 500640.2, 3755030.8,     776.8,     776.8,       0.0);         ( 500664.9, 3755005.8,
     776.8,     776.8,       0.0);
     ( 500711.2, 3754973.9,     777.7,     777.7,       0.0);         ( 500749.8, 3754946.4,
     778.1,     778.1,       0.0);
     ( 500791.8, 3754922.7,     778.4,     778.4,       0.0);         ( 500820.4, 3754899.4,
     778.5,     778.5,       0.0);
     ( 500862.5, 3754875.7,     779.0,     779.0,       0.0);         ( 500896.8, 3754859.8,
     779.2,     779.2,       0.0);
     ( 500941.7, 3754840.0,     780.0,     780.0,       0.0);         ( 500975.6, 3754824.1,
     780.8,     780.8,       0.0);
     ( 501025.4, 3754801.5,     781.0,     781.0,       0.0);         ( 501083.8, 3754779.9,
     781.9,     781.9,       0.0);
     ( 501118.8, 3754761.5,     782.0,     782.0,       0.0);         ( 501141.7, 3754750.6,
     782.3,     782.3,       0.0);
     ( 501165.0, 3754738.9,     782.5,     782.5,       0.0);         ( 501192.3, 3754733.6,
     783.0,     783.0,       0.0);
     ( 501216.3, 3754735.0,     783.2,     783.2,       0.0);         ( 501240.0, 3754734.3,
     783.7,     783.7,       0.0);
     ( 501301.1, 3754707.8,     784.3,     784.3,       0.0);         ( 501331.9, 3754683.1,
     784.7,     784.7,       0.0);
     ( 501347.1, 3754684.1,     785.1,     785.1,       0.0);         ( 501372.2, 3754683.1,
     785.5,     785.5,       0.0);
     ( 501397.6, 3754684.1,     785.9,     785.9,       0.0);         ( 501413.9, 3754682.0,
     786.4,     786.4,       0.0);
     ( 501442.2, 3754678.5,     787.0,     787.0,       0.0);         ( 501339.3, 3754636.0,
     784.9,     784.9,       0.0);
     ( 501371.5, 3754616.3,     785.0,     785.0,       0.0);         ( 501384.2, 3754554.0,
     784.6,     784.6,       0.0);
     ( 501222.0, 3754446.2,     781.0,     781.0,       0.0);         ( 501278.2, 3754384.8,
     781.9,     781.9,       0.0);
     ( 501160.5, 3754265.6,     780.0,     780.0,       0.0);         ( 501101.8, 3754046.9,
     780.0,     780.0,       0.0);
     ( 501100.7, 3753964.9,     780.0,     780.0,       0.0);         ( 500493.9, 3753958.5,
     775.9,     775.9,       0.0);
     ( 500545.1, 3753958.1,     777.9,     777.9,       0.0);         ( 500584.0, 3753956.4,
     778.3,     778.3,       0.0);
     ( 500231.7, 3754177.5,     774.0,     774.0,       0.0);         ( 499973.4, 3754320.0,
     771.6,     771.6,       0.0);
     ( 499959.2, 3754153.3,     758.1,     776.0,       0.0);         ( 499606.4, 3754166.9,
     757.3,     772.0,       0.0);
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                       ***        09:47:05

                      PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
              1  1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
              1  1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
              1  1 1 1 1 1 1 1 1 1 1
              1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
```

```
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

    NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS
    INCLUDED IN THE DATA FILE.



                         *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES
                         ***
                                                   (METERS/SEC)

                                       1.54,   3.09,   5.14,   8.23,  10.80,
```



```
                                  *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:
   BNAP_V9_ADJU\BNAP_v9.SFC                                                        Met
   Version:  16216
   Profile file:
   BNAP_V9_ADJU\BNAP_v9.PFL
   Surface format:
   FREE

   Profile format:
   FREE

   Surface station no.:     3171                  Upper air station no.:     3190
                  Name: UNKNOWN                                  Name:
                  UNKNOWN
                  Year:   2011                                   Year:   2011

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - -
 11 01 01   1 01  -50.0  0.519 -9.000 -9.000 -999.  897.    296.2  0.15   4.23   1.00    5.40
 108.    9.1  274.2    5.5
 11 01 01   1 02  -54.0  0.559 -9.000 -9.000 -999. 1002.    343.7  0.15   4.23   1.00    5.80
 113.    9.1  273.8    5.5
 11 01 01   1 03  -50.2  0.519 -9.000 -9.000 -999.  899.    296.1  0.15   4.23   1.00    5.40
 112.    9.1  273.1    5.5
 11 01 01   1 04  -45.5  0.469 -9.000 -9.000 -999.  773.    241.8  0.15   4.23   1.00    4.90
 111.    9.1  272.5    5.5
 11 01 01   1 05  -13.5  0.164 -9.000 -9.000 -999.  293.     29.5  0.15   4.23   1.00    1.80
 78.    9.1  270.9    5.5
 11 01 01   1 06  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 58.    9.1  270.4    5.5
 11 01 01   1 07  -19.9  0.203 -9.000 -9.000 -999.  220.     45.4  0.15   4.23   1.00    2.20
 54.    9.1  270.4    5.5
 11 01 01   1 08  -12.2  0.206 -9.000 -9.000 -999.  224.     60.4  0.15   4.23   0.55    2.20
 60.    9.1  270.9    5.5
```

```
 11 01 01   1 09   45.6  0.455  0.587  0.005  150.  738.   -174.7  0.15   4.23   0.34    4.50
 96.    9.1  273.8    5.5
 11 01 01   1 10  126.7  0.592  0.981  0.005  252. 1092.   -138.5  0.15   4.23   0.27    5.80
 102.    9.1  274.9    5.5
 11 01 01   1 11  195.5  0.684  1.823  0.009 1048. 1355.   -138.3  0.15   4.23   0.25    6.70
 100.    9.1  275.9    5.5
 11 01 01   1 12  229.2  0.688  2.066  0.009 1302. 1370.   -120.1  0.15   4.23   0.24    6.70
 96.    9.1  276.4    5.5
 11 01 01   1 13  190.6  0.647  1.999  0.009 1417. 1254.   -120.0  0.15   4.23   0.24    6.30
 95.    9.1  277.0    5.5
 11 01 01   1 14  115.4  0.590  1.708  0.009 1459. 1094.   -150.2  0.15   4.23   0.26    5.80
 98.    9.1  277.0    5.5
 11 01 01   1 15  101.2  0.588  1.649  0.009 1496. 1081.   -169.0  0.15   4.23   0.29    5.80
 99.    9.1  276.4    5.5
 11 01 01   1 16   27.7  0.534  1.074  0.009 1507.  940.   -462.4  0.15   4.23   0.38    5.40
 103.    9.1  276.4    5.5
 11 01 01   1 17  -42.8  0.469 -9.000 -9.000 -999.  777.    242.4  0.15   4.23   0.67    4.90
 106.    9.1  275.9    5.5
 11 01 01   1 18  -32.7  0.340 -9.000 -9.000 -999.  489.    127.2  0.15   4.23   1.00    3.60
 100.    9.1  274.9    5.5
 11 01 01   1 19  -24.4  0.252 -9.000 -9.000 -999.  308.     69.8  0.15   4.23   1.00    2.70
 70.    9.1  273.1    5.5
 11 01 01   1 20  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 85.    9.1  273.1    5.5
 11 01 01   1 21  -28.2  0.291 -9.000 -9.000 -999.  377.     93.1  0.15   4.23   1.00    3.10
 82.    9.1  273.1    5.5
 11 01 01   1 22  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 64.    9.1  272.5    5.5
 11 01 01   1 23  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 61.    9.1  272.5    5.5
 11 01 01   1 24  -24.5  0.252 -9.000 -9.000 -999.  304.     69.8  0.15   4.23   1.00    2.70
 76.    9.1  272.5    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   274.3   99.0  -99.00  -99.00
 11 01 01 01    9.1 1  108.    5.40  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***        09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                         ***        09:47:05

                      PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                 *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR
                                 SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     VOL1        ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_10    IN
                                          MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD
      (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - - - - - - - - - - - - - -
        500554.60   3754323.34        0.11068  (13012924)                500556.63
        3754410.67        0.17562  (13122024)
        500557.31   3754522.38        0.25475  (14010924)                500557.99
        3754617.83        0.24667m (15020724)
        500444.25   3754297.61        0.10065  (15102924)                500388.06
```

3754298.29 0.11232c (12122924)
500452.38 3754021.40 0.03458c (12122924) 500886.33
3754374.11 0.07043 (13122024)
501084.01 3754379.53 0.05133 (14010924) 501013.61
3754294.91 0.05156 (13122024)
500006.24 3754662.51 0.17944 (14120324) 500000.14
3754482.43 0.20227 (11010224)
499973.28 3754829.30 0.06585 (15123024) 500446.44
3754903.20 0.06471 (13120524)
500504.10 3755148.67 0.02568 (13011224) 500530.97
3755126.64 0.02772 (13120524)
500575.15 3755089.88 0.03256 (13120524) 500603.07
3755064.08 0.03587 (13120524)
500640.19 3755030.85 0.03950 (13120524) 500664.93
3755005.76 0.04138 (13120524)
500711.23 3754973.95 0.04445 (13011124) 500749.75
3754946.38 0.04851 (12121524)
500791.82 3754922.70 0.05351 (12121524) 500820.44
3754899.37 0.05698 (13102924)
500862.50 3754875.69 0.06053 (13102924) 500896.79
3754859.79 0.06112 (13102924)
500941.68 3754839.99 0.06006 (13102924) 500975.61
3754824.09 0.05928 (13111924)
501025.44 3754801.47 0.05703 (13111924) 501083.76
3754779.91 0.05335m (15020724)
501118.75 3754761.53 0.05211m (15020724) 501141.73
3754750.57 0.05099m (15020724)
501165.05 3754738.91 0.04976m (15020724) 501192.27
3754733.61 0.04791m (15020724)
501216.30 3754735.02 0.04616m (15020724) 501239.99
3754734.31 0.04457m (15020724)
501301.13 3754707.80 0.05965 (15010924) 501331.88
3754683.06 0.05917 (15010924)
501347.08 3754684.12 0.05859 (15010924) 501372.17
3754683.06 0.05734 (15010924)
501397.62 3754684.12 0.05617 (15010924) 501413.88
3754682.00 0.05576 (15010924)
501442.16 3754678.47 0.05457 (15010924) 501339.30
3754636.05 0.05958 (15010924)
501371.47 3754616.26 0.05677 (15010924) 501384.19
3754554.05 0.05950 (14010924)
501221.96 3754446.25 0.04663 (14010924) 501278.16
3754384.75 0.03997 (14010924)
501160.46 3754265.64 0.04022 (13122024) 501101.79
3754046.86 0.02682 (13122024)
501100.73 3753964.86 0.02407 (13012924) 500493.86
3753958.50 0.02808c (11122924)
500545.11 3753958.14 0.02725c (11122924) 500583.99
3753956.38 0.02623c (11122924)
500231.73 3754177.54 0.07823 (13020224) 499973.43
3754319.99 0.12417 (15010424)
499959.24 3754153.30 0.06752m (12122124) 499606.37
3754166.90 0.04610 (15010424)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

```
                                                        DATE
                                                                                    NETWORK
GROUP ID                                  AVERAGE CONC     (YYMMDDHH)          RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.25475  ON 14010924: AT (  500557.31,  3754522.38,
780.21,   780.21,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION 21112  ***   *** C:\Users\Michael Tirohn\Desktop\HRAs\14410 Beaumont
Dowling\14410 Op ***       09/08/22
 *** AERMET - VERSION  16216 ***
 ***                                                                         ***       09:47:05

                      PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of         1311 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of           64 Calm Hours Identified

 A Total of         1247 Missing Hours Identified (  2.85 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      65       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      65       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
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APPENDIX 3.5:

SCAQMD AMICUS BRIEF

S219783

IN THE SUPREME COURT OF C ALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,

Plaintiffs and Appellants,

v.

COUNTY OF FRESNO,

Defendant and Respondent,

and,

FRIANT RANCH, L.P.,

Real Party in Interest and Respondent.

SUPREME COURT
FILED

APR 13 2015

Frank A. McGuire Clerk

Deputy

After a Published Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726
Honorable Rosendo A. Pena, Jr.

APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*

Kurt R. Wiese, General Counsel (SBN 127251)
*Barbara Baird, Chief Deputy Counsel (SBN 81507)
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765
Telephone: 909-396-2302; Facsimile: 909-396-2961
Email: bbaird@aqmd.gov
Counsel for [Proposed] Amicus Curiae,
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

RECEIVED

APR - 6 2015

CLERK SUPREME COURT

TABLE OF CONTENTS

TABLE OF AUTHORITIES

State Cases

California Statutes (cont'd)

California Regulations

Federal Statutes

Rules

Other

TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) respectfully requests leave to file the attached *amicus curiae* brief. Because SCAQMD's position differs from that of either party, we request leave to submit this amicus brief in support of neither party.

HOW THIS BRIEF WILL ASSIST THE COURT

SCAQMD's proposed amicus brief takes a position on two of the issues in this case. In both instances, its position differs from that of either party. The issues are:

1) Does the California Environmental Quality Act (CEQA) require an environmental impact report (EIR) to correlate a project's air pollution emissions with specific levels of health impacts?
2) What is the proper standard of review for determining whether an EIR provides sufficient information on the health impacts caused by a project's emission of air pollutants?

This brief will assist the Court by discussing the practical realities of correlating identified air quality impacts with specific health outcomes. In short, CEQA requires agencies to provide detailed information about a project's air quality impacts that is sufficient for the public and decisionmakers to adequately evaluate the project and meaningfully understand its impacts. However, the level of analysis is governed by a rule of reason; CEQA only requires agencies to conduct analysis if it is reasonably feasible to do so.

With regard to health-related air quality impacts, an analysis that correlates a project's air pollution emissions with specific levels of health impacts will be feasible in some cases but not others. Whether it is feasible depends on a variety of factors, including the nature of the project and the nature of the analysis under consideration. The feasibility of analysis may also change over time as air districts and others develop new tools for measuring projects' air quality related health impacts. Because SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, it is uniquely situated to express an opinion on the extent to which the Court should hold that CEQA requires lead agencies to correlate air quality impacts with specific health outcomes.

SCAQMD can also offer a unique perspective on the question of the appropriate standard of review. SCAQMD submits that the proper standard of review for determining whether an EIR is sufficient as an informational document is more nuanced than argued by either party. In our view, this is a mixed question of fact and law. It includes determining whether additional analysis is feasible, which is primarily a factual question that should be reviewed under the substantial evidence standard. However, it also involves determining whether the omission of a particular analysis renders an EIR insufficient to serve CEQA's purpose as a meaningful, informational document. If a lead agency has not determined that a requested analysis is infeasible, it is the court's role to determine whether the EIR nevertheless meets CEQA's purposes, and courts should not defer to the lead agency's conclusions regarding the legal sufficiency of an EIR's analysis. The ultimate question of whether an EIR's analysis is "sufficient" to serve CEQA's informational purposes is predominately a question of law that courts should review de novo.

This brief will explain the rationale for these arguments and may assist the Court in reaching a conclusion that accords proper respect to a lead agency's factual conclusions while maintaining judicial authority over the ultimate question of what level of analysis CEQA requires.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The SCAQMD is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of the Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410; Cal. Code Regs., tit. 17, § 60104.) The SCAQMD participates in the CEQA process in several ways. Sometimes it acts as a lead agency that prepares CEQA documents for projects. Other times it acts as a responsible agency when it has permit authority over some part of a project that is undergoing CEQA review by a different lead agency. Finally, SCAQMD also acts as a commenting agency for CEQA documents that it receives because it is a public agency with jurisdiction by law over natural resources affected by the project.

In all of these capacities, SCAQMD will be affected by the decision in this case. SCAQMD sometimes submits comments requesting that a lead agency perform an additional type of air quality or health impacts analysis. On the other hand, SCAQMD sometimes determines that a particular type of health impact analysis is not feasible or would not produce reliable and informative results. Thus, SCAQMD will be affected by the Court's resolution of the extent to which CEQA requires EIRs to correlate emissions and health impacts, and its resolution of the proper standard of review.

CERTIFICATION REGARDING AUTHORSHIP AND FUNDING

No party or counsel in the pending case authored the proposed amicus curiae brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person or entity other than the proposed *Amicus Curiae* made any monetary contribution intended to fund the preparation or submission of the brief.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
KURT R. WIESE, GENERAL COUNSEL
BARBARA BAIRD, CHIEF DEPUTY COUNSEL

By: Barbara Baird

Barbara Baird
Attorneys for [proposed] Amicus Curiae
SOUTH COAST AIR QUALITY
MANAGEMENT DISTICT

BRIEF OF AMICUS CURIAE

SUMMARY OF ARGUMENT

The South Coast Air Quality Management District (SCAQMD) submits that this Court should not try to establish a hard-and-fast rule concerning whether lead agencies are required to correlate emissions of air pollutants with specific health consequences in their environmental impact reports (EIR). The level of detail required in EIRs is governed by a few, core CEQA (California Environmental Quality Act) principles. As this Court has stated, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the Univ of Cal.* (1988) 47 Cal.3d 376, 405 ["*Laurel Heights I*"]) Accordingly, "an agency must use its best efforts to find out and disclose all that it reasonably can." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (quoting CEQA Guidelines § 15144)[1].). However, "[a]nalysis of environmental effects need not be exhaustive, but will be judged in light of what is reasonably feasible." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390; CEQA Guidelines §§ 15151, 15204(a).)

With regard to analysis of air quality related health impacts, EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions). In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient. In other cases, due to the magnitude

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[1] The CEQA Guidelines are found at Cal. Code Regs., tit. 14 §§ 15000, *et seq*.

or nature of the pollution emissions, as well as the specificity of the project involved, it may be feasible to quantify health impacts. Or there may be a less exacting, but still meaningful analysis of health impacts that can feasibly be performed. In these instances, agencies should disclose those impacts.

SCAQMD also submits that whether or not an EIR complies with CEQA's informational mandates by providing sufficient, feasible analysis is a mixed question of fact and law. Pertinent here, the question of whether an EIR's discussion of health impacts from air pollution is sufficient to allow the public to understand and consider meaningfully the issues involves two inquiries: (1) Is it feasible to provide the information or analysis that a commenter is requesting or a petitioner is arguing should be required?; and (2) Even if it is feasible, is the agency relying on other policy or legal considerations to justify not preparing the requested analysis? The first question of whether an analysis is feasible is primarily a question of fact that should be judged by the substantial evidence standard. The second inquiry involves evaluating CEQA's information disclosure purposes against the asserted reasons to not perform the requested analysis. For example, an agency might believe that its EIR meets CEQA's informational disclosure standards even without a particular analysis, and therefore choose not to conduct that analysis. SCAQMD submits that this is more of a legal question, which should be reviewed de novo as a question of law.

ARGUMENT

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK.

A. Air Quality Regulatory Background

The South Coast Air Quality Management District (SCAQMD) is one of the local and regional air pollution control districts and air quality management districts in California. The SCAQMD is the regional air pollution agency for the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410, 17 Cal. Code Reg. § 60104.) The SCAQMD also includes the Coachella Valley in Riverside County (Palm Springs area to the Salton Sea). (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "chapter 7" hyperlink; pp 7-1, 7-3 (last visited Apr. 1, 2015).) The SCAQMD's jurisdiction includes over 16 million residents and has the worst or nearly the worst air pollution levels in the country for ozone and fine particulate matter. (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Executive Summary" hyperlink p. ES-1 (last visited Apr. 1, 2015).)

Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. (Health & Saf. Code § 40000.) The California Air Resources Board (CARB), part of the California Environmental Protection Agency, is primarily responsible for controlling pollution from motor vehicles. (*Id.*) The air districts must adopt rules to achieve and maintain the state and federal ambient air quality standards within their jurisdictions. (Health & Saf. Code § 40001.)

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to identify pollutants that are widely distributed and pose a threat to human health, developing a so-called "criteria" document. (42 U.S.C. § 7408; CAA § 108.) These pollutants are frequently called "criteria pollutants." EPA must then establish "national ambient air quality standards" at levels "requisite to protect public health", allowing "an adequate margin of safety." (42 U.S.C. § 7409; CAA § 109.) EPA has set standards for six identified pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM), and lead. (U.S. EPA, National Ambient Air Quality Standards (NAAQS), http://www.epa.gov/air/criteria.html (last updated Oct. 21, 2014).)[2]

Under the Clean Air Act, EPA sets emission standards for motor vehicles and "nonroad engines" (mobile farm and construction equipment, marine vessels, locomotives, aircraft, etc.). (42 U.S.C. §§ 7521, 7547; CAA §§ 202, 213.) California is the only state allowed to establish emission standards for motor vehicles and most nonroad sources; however, it may only do so with EPA's approval. (42 U.S.C. §§ 7543(b), 7543(e); CAA §§ 209(b), 209(c).) Sources such as manufacturing facilities, power plants and refineries that are not mobile are often referred to as "stationary sources." The Clean Air Act charges state and local agencies with the primary responsibility to attain the national ambient air quality standards. (42 U.S.C. § 7401(a)(3); CAA § 101(a)(3).) Each state must adopt and implement a plan including enforceable measures to achieve and maintain the national ambient air quality standards. (42 U.S.C. § 7410; CAA § 110.) The SCAQMD and CARB jointly prepare portion of the plan for the South Coast Air Basin and submit it for approval by EPA. (Health & Saf. Code §§ 40460, et seq.)

The Clean Air Act also requires state and local agencies to adopt a permit program requiring, among other things, that new or modified "major" stationary sources use technology to achieve the "lowest achievable emission rate," and to control minor stationary sources as

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[2] Particulate matter (PM) is further divided into two categories: fine particulate or $PM_{2.5}$ (particles with a diameter of less than or equal to 2.5 microns) and coarse particulate (PM_{10}) (particles with a diameter of 10 microns or less). (U.S. EPA, Particulate Matter (PM), http://www.epa.gov/airquality/particlepollution/ (last visited Apr. 1, 2015).)

needed to help attain the standards. (42 U.S.C. §§ 7502(c)(5), 7503(a)(2), 7410(a)(2)(C); CAA §§ 172(c)(5), 173(a)(2), 110(a)(2)(C).) The air districts implement these permit programs in California. (Health & Saf. Code §§ 42300, et seq.)

The Clean Air Act also sets out a regulatory structure for over 100 so-called "hazardous air pollutants" calling for EPA to establish "maximum achievable control technology" (MACT) for sources of these pollutants. (42 U.S.C. § 7412(d)(2); CAA § 112(d)(2).) California refers to these pollutants as "toxic air contaminants" (TACs) which are subject to two state-required programs. The first program requires "air toxics control measures" for specific categories of sources. (Health & Saf. Code § 39666.) The other program requires larger stationary sources and sources identified by air districts to prepare "health risk assessments" for impacts of toxic air contaminants. (Health & Saf. Code §§ 44320(b), 44322, 44360.) If the health risk exceeds levels identified by the district as "significant," the facility must implement a "risk reduction plan" to bring its risk levels below "significant" levels. Air districts may adopt additional more stringent requirements than those required by state law, including requirements for toxic air contaminants. (Health & Saf. Code § 41508; *Western Oil & Gas Assn. v. Monterey Bay Unified APCD* (1989) 49 Cal.3d 408, 414.) For example, SCAQMD has adopted a rule requiring new or modified sources to keep their risks below specified levels and use best available control technology (BACT) for toxics. (SCAQMD, *Rule 1401-New Source Review of Toxic Air Contaminants*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiv; then follow "Rule 1401" hyperlink (last visited Apr. 1, 2015).)

B. The SCAQMD's Role Under CEQA

The California Environmental Quality Act (CEQA) requires public agencies to perform an environmental review and appropriate analysis for projects that they implement or approve. (Pub. Resources Code § 21080(a).) The agency with primary approval authority for a particular project is generally the "lead agency" that prepares the appropriate CEQA document. (CEQA Guidelines §§ 15050, 15051.) Other agencies having a subsequent approval authority over all or part of a project are called "responsible" agencies that must determine whether the CEQA document is adequate for their use. (CEQA Guidelines §§ 15096(c), 15381.) Lead agencies must also consult with and circulate their environmental impact reports to "trustee agencies" and agencies "with jurisdiction by law" including "authority over resources which may be affected by the project." (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines §§ 15086(a)(3), 15073(c).) The SCAQMD has a role in all these aspects of CEQA.

Fulfilling its responsibilities to implement its air quality plan and adopt rules to attain the national ambient air quality standards, SCAQMD adopts a dozen or more rules each year to require pollution reductions from a wide variety of sources. The SCAQMD staff evaluates each rule for any adverse environmental impact and prepares the appropriate CEQA document. Although most rules reduce air emissions, they may have secondary environmental impacts such as use of water or energy or disposal of waste—e.g., spent catalyst from control equipment.[3]

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[3] The SCAQMD's CEQA program for its rules is a "Certified Regulatory Program" under which it prepares a "functionally equivalent" document in lieu of a negative declaration or EIR. (Pub. Resources Code § 21080.5, CEQA Guidelines § 15251(l).)

The SCAQMD also approves a large number of permits every year to construct new, modified, or replacement facilities that emit regulated air pollutants. The majority of these air pollutant sources have already been included in an earlier CEQA evaluation for a larger project, are currently being evaluated by a local government as lead agency, or qualify for an exemption. However, the SCAQMD sometimes acts as lead agency for major projects where the local government does not have a discretionary approval. In such cases, SCAQMD prepares and certifies a negative declaration or environmental impact report (EIR) as appropriate.[4] SCAQMD evaluates perhaps a dozen such permit projects under CEQA each year. SCAQMD is often also a "responsible agency" for many projects since it must issue a permit for part of the projects (e.g., a boiler used to provide heat in a commercial building). For permit projects evaluated by another lead agency under CEQA, SCAQMD has the right to determine that the CEQA document is inadequate for its purposes as a responsible agency, but it may not do so because its permit program already requires all permitted sources to use the best available air pollution control technology. (SCAQMD, *Rule 1303(a)(1) – Requirements*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiii; then follow "Rule 1303" hyperlink (last visited Apr. 1, 2015).)

Finally, SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality—a natural resource affected by the project. (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines § 15366(a)(3).) The SCAQMD staff provides comments on as many as 25 or 30 such documents each month.

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[4] The SCAQMD's permit projects are not included in its Certified Regulatory Program, and are evaluated under the traditional local government CEQA analysis. (Pub. Resources Code §§ 21150-21154.)

(SCAQMD Governing Board Agenda, Apr. 3, 2015, Agenda Item 16, Attachment A, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-april-3-2015; then follow "16. Lead Agency Projects and Environmental Documents Received by SCAQMD" hyperlink (last visited Apr. 1, 2015).) Of course, SCAQMD focuses its commenting efforts on the more significant projects.

Typically, SCAQMD comments on the adequacy of air quality analysis, appropriateness of assumptions and methodology, and completeness of the recommended air quality mitigation measures. Staff may comment on the need to prepare a health risk assessment detailing the projected cancer and noncancer risks from toxic air contaminants resulting from the project, particularly the impacts of diesel particulate matter, which CARB has identified as a toxic air contaminant based on its carcinogenic effects. (California Air Resources Board, Resolution 98-35, Aug. 27, 1998, http://www.arb.ca.gov/regact/diesltac/diesltac.htm; then follow Resolution 98-35 hyperlink (last visited Apr. 1, 2015).) Because SCAQMD already requires new or modified stationary sources of toxic air contaminants to use the best available control technology for toxics and to keep their risks below specified levels, (SCAQMD Rule 1401, supra, note 15), the greatest opportunity to further mitigate toxic impacts through the CEQA process is by reducing emissions—particularly diesel emissions—from vehicles.

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS.

Numerous cases hold that courts do not review the correctness of an EIR's conclusions but rather its sufficiency as an informative document. (*Laurel Heights 1*, *supra*, 47 Cal.3d at p. 392; *Citizens of Goleta Valley v.*

Bd. of Supervisors (1990) 52 Cal.3d 553, 569; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197.)

As stated by the Court of Appeal in this case, where an EIR has addressed a topic, but the petitioner claims that the information provided about that topic is insufficient, courts must "draw[] a line that divides *sufficient* discussions from those that are *insufficient*." (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) The Court of Appeal readily admitted that "[t]he terms themselves – sufficient and insufficient – provide little, if any, guidance as to where the line should be drawn. They are simply labels applied once the court has completed its analysis." (*Id.*)

The CEQA Guidelines, however, provide guidance regarding what constitutes a sufficient discussion of impacts. Section 15151 states that "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." Case law reflects this: "Analysis of environmental effects need not be exhaustive, but will be judged in light of what was reasonably feasible." (*Association of Irritated Residents v. County of Madera, supra,* 107 Cal.App.4th at p. 1390; see also CEQA Guidelines § 15204(a).)

Applying this test, this Court cannot realistically establish a hard-and-fast rule that an analysis correlating air pollution impacts of a project to quantified resulting health impacts is always required, or indeed that it is never required. Simply put, in some cases such an analysis will be "feasible"; in some cases it will not.

For example, air pollution control districts often require a proposed new source of toxic air contaminants to prepare a "health risk assessment" before issuing a permit to construct. District rules often limit the allowable cancer risk the new source may cause to the "maximally exposed individual" (worker and residence exposures). (*See, e.g.*, SCAQMD Rule 1401(c)(8); 1401(d)(1), *supra* note 15.) In order to perform this analysis, it is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). (SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), pp. 11-16*; (last visited Apr. 1, 2015) http://www.aqmd.gov/home/library/documents-support-material; "Guidelines" hyperlink; AB2588; then follow AB2588 Risk Assessment Guidelines hyperlink.)

Thus, it is feasible to determine the health risk posed by a new gas station locating at an intersection in a mixed use area, where receptor locations are known. On the other hand, it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk—it does not necessarily mean anyone will contract cancer as a result of the project.

In order to find the "cancer burden" or expected additional cases of cancer resulting from the project, it is also necessary to know the numbers and location of individuals living within the "zone of impact" of the project: i.e., those living in areas where the projected cancer risk from the project exceeds one in a million. (SCAQMD, Health Risk Assessment Summary form, http://www.aqmd.gov/home/forms ; filter by "AB2588" category; then "Health Risk Assessment" hyperlink (last visited Apr. 1, 2015).) The affected population is divided into bands of those exposed to at least 1 in a million risk, those exposed to at least 10 in a million risk, etc. up to those exposed at the highest levels. (*Id.*) This data allows agencies to calculate an approximate number of additional cancer cases expected from the project. However, it is not possible to predict which particular individuals will be affected.

For the so-called criteria pollutants[5], such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. (U.S. EPA, Ground Level Ozone, http://www.epa.gov/airquality/ozonepollution/ (last updated Mar. 25, 2015).) It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. (U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2, http://www.epa.gov/ttnamti1/archive/cpreldoc.html (last visited Apr. 1, 2015).) NO_x and VOC are known as "precursors" of ozone.

Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes. (U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, http://www.epa.gov/apti/ozonehealth/population.html#levels (last visited Apr. 1, 2015).) However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP showed that reducing NO_x by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. (South Coast Air Quality Management District, *Final 2012 AQMP (February 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Appendix V: Modeling & Attainment Demonstrations" hyperlink,

[5] See discussion of types of pollutants, supra, Part I.A.

pp. v-4-2, v-7-4, v-7-24.) SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects.

On the other hand, this type of analysis may be feasible for projects on a regional scale with very high emissions of NO_x and VOCs, where impacts are regional. For example, in 2011 the SCAQMD performed a health impact analysis in its CEQA document for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the districts "internal bank" of emission reductions. This CEQA analysis accounted for essentially *all* the increases in emissions due to new or modified sources in the District between 2010 and 2030.[6] The SCAQMD was able to correlate this very large emissions increase (e.g., 6,620 pounds per day NO_x (1,208 tons per year), 89,180 pounds per day VOC (16,275 tons per year)) to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[7] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System* (see hyperlink in fn 6*)* at p. 4.1-35, Table 4.1-29.)

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[6] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, Attachment G, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System, Vol. 1, p.4.0-6,* http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-february-4-2011; the follow "26. Adopt Proposed Rule 1315 – Federal New Source Review Tracking System" (last visited April 1, 2015).)

[7] The SCAQMD was able to establish the location of future NO_x and VOC emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in *Natural Res. Def. Council v SCAQMD*, Los Angeles Superior Court No. BS110792).

However, a project emitting only 10 tons per year of NO_x or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_x with specific health impacts from ozone. This is in part because ozone formation is not linearly related to emissions. Ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology and seasonal impacts, and because ozone is formed some time later and downwind from the actual emission. (EPA Guideline on Ozone Monitoring Site Selection (Aug. 1998) EPA-454/R-98-002, § 5.1.2; https://www.epa.gov/ttnamti1/archive/cpreldoc.html; then search "Guideline on Ozone Monitoring Site Selection" click on pdf) (last viewed Apr. 1, 2015).)

SCAQMD has set its CEQA "significance" threshold for NO_x and VOC at 10 tons per year (expressed as 55 lb/day). (SCAQMD, *Air Quality Analysis Handbook*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook; then follow "SCAQMD Air Quality Significance Thresholds" hyperlink (last visited Apr. 1, 2015).) This is because the federal Clean Air Act defines a "major" stationary source for "extreme" ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year. (42 U.S.C. §§ 7511a(e), 7511a(f); CAA §§ 182(e), 182(f).) Under the Clean Air Act, such sources are subject to enhanced control requirements (42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173), so SCAQMD decided this was an appropriate threshold for making a CEQA "significance" finding and requiring feasible mitigation. Essentially, SCAQMD takes the position that a source that emits 10 tons/year of NO_x or VOC would contribute cumulatively to ozone formation. Therefore, lead agencies that use SCAQMD's thresholds of significance may determine that many projects have "significant" air quality impacts and must apply all feasible mitigation measures, yet will not be able to precisely correlate the project to quantifiable health impacts, unless the emissions are sufficiently high to use a regional modeling program.

In the case of particulate matter ($PM_{2.5}$)[8], another "criteria" pollutant, SCAQMD staff is aware of two possible methods of analysis. SCAQMD used regional modeling to predict expected health impacts from its proposed Rule 1315, as mentioned above. Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5.}$ (California Air Resources Board, *Health Impacts Analysis: PM Premature Death Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort_arch.htm (last reviewed Jan. 19, 2012).) SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day). (Final Environmental Assessment for Rule 1315, *supra*, pp 4.0-12, 4.1-13, 4.1-37 (e.g., 125 premature deaths in the entire SCAQMD in 2030), 4.1-39 (0.05 to 1.77 annual premature deaths from power plants.) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 lbs/day of $PM_{2.5}$, or, or 1029 tons/year. (*Id.* at table 4.1-4, p. 4.1-10.)

However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties. [9] (SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren*

[8] SCAQMD has not attained the latest annual or 24-hour national ambient air quality standards for "$PM_{2.5}$" or particulate matter less than 2.5 microns in diameter.

[9] Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts. (*Id.* at p. 2-24.)

E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011), http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2011; then follow "Final Subsequent Mitigated Negative Declaration for Warren E&P Inc. WTU Central Facility, New Equipment Project" hyperlink, pp. 2-22, 2-23 (last visited Apr. 1, 2015).) Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so. (*Id.* at pp 2-22 to 2-24.) SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information. (*Id.* at pp. 2-23, 2-25.) This CEQA document was not challenged in court.

In the above case, while it may have been technically possible to plug the data into the methodology, the results would not have been reliable or meaningful. SCAQMD believes that an agency should not be required to perform analyses that do not produce reliable or meaningful results. This Court has already held that an agency may decline to use even the "normal" "existing conditions" CEQA baseline where to do so would be misleading or without informational value. (*Neighbors for Smart Rail v. Exposition Metro Line* (2013) 57 Cal.4th 439, 448, 457.) The same should be true for a decision that a particular study or analysis would not provide reliable or meaningful results.[10]

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[10] Whether a particular study would result in "informational value" is a part of deciding whether it is "feasible." CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and

Therefore, it is not possible to set a hard-and-fast rule on whether a correlation of air quality impacts with specific quantifiable health impacts is required in all cases. Instead, the result turns on whether such an analysis is reasonably feasible in the particular case.[11] Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths. (California Air Resources Board, *Health Impacts Analysis: PM Mortality Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm (last reviewed Dec. 29, 2010).) This factor also counsels against setting any hard-and-fast rule in this case.

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW.

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document

A second issue in this case is whether courts should review an EIR's informational sufficiency under the "substantial evidence" test as argued by Friant Ranch or the "independent judgment" test as argued by Sierra Club.

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technological factors." (Pub. Resources Code § 21061.1.) A study cannot be "accomplished in a *successful* manner" if it produces unreliable or misleading results.

[11] In this case, the lead agency did not have an opportunity to determine whether the requested analysis was feasible because the comment was non-specific. Therefore, SCAQMD suggests that this Court, after resolving the legal issues in the case, direct the Court of Appeal to remand the case to the lead agency for a determination of whether the requested analysis is feasible. Because Fresno County, the lead agency, did not seek review in this Court, it seems likely that the County has concluded that at least some level of correlation of air pollution with health impacts is feasible.

As this Court has explained, "a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.) For questions regarding compliance with proper procedure or other legal questions, courts review an agency's action de novo under the "independent judgment" test. (*Id.*) On the other hand, courts review factual disputes only for substantial evidence, thereby "accord[ing] greater deference to the agency's substantive factual conclusions." (*Id.*)

Here, Friant Ranch and Sierra Club agree that the case involves the question of whether an EIR includes sufficient information regarding a project's impacts. However, they disagree on the proper standard of review for answering this question: Sierra Club contends that courts use the independent judgment standard to determine whether an EIR's analysis is sufficient to meet CEQA's informational purposes,[12] while Friant Ranch contends that the substantial evidence standard applies to this question.

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[12] Sierra Club acknowledges that courts use the substantial evidence standard when reviewing predicate factual issues, but argues that courts ultimately decide as a matter of law what CEQA requires. (Answering Brief, pp. 14, 23.)

SCAQMD submits that the issue is more nuanced than either party contends. We submit that, whether a CEQA document includes sufficient analysis to satisfy CEQA's informational mandates is a mixed question of fact and law,[13] containing two levels of inquiry that should be judged by different standards.[14]

The state CEQA Guidelines set forth standards for the adequacy of environmental analysis. Guidelines Section 15151 states:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In this case, the basic question is whether the underlying analysis of air quality impacts made the EIR "sufficient" as an informative document. However, whether the EIR's analysis was sufficient is judged in light of what was reasonably feasible. This represents a mixed question of fact and law that is governed by two different standards of review.

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[13] Friant Ranch actually states that the claim that an EIR lacks sufficient relevant information is, "most properly thought of as raising mixed questions of fact and law." (Opening Brief, p. 27.) However, the remainder of its argument claims that the court should apply the substantial evidence standard of review to all aspects of the issue.

[14] Mixed questions of fact and law issues may implicate predominantly factual subordinate questions that are reviewed under the substantial evidence test even though the ultimate question may be reviewed by the independent judgment test. *Crocker National Bank v. City and County of San Francisco* (1989) 49 Cal.3d 881, 888-889.

SCAQMD submits that an EIR's sufficiency as an informational document is ultimately a legal question that courts should determine using their independent judgment. This Court's language in *Laurel Heights I* supports this position. As this Court explained: "The court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its *sufficiency as an informative document*." (*Laurel Heights I, supra,* 47 Cal.3d at 392-393) (emphasis added.) As described above, the Court in *Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 431, also used its independent judgment to determine what level of analysis CEQA requires for water supply impacts. The Court did not defer to the lead agency's opinion regarding the law's requirements; rather, it determined for itself what level of analysis was necessary to meet "[t]he law's informational demands." (*Id.* at p. 432.) Further, existing case law also holds that where an agency fails to comply with CEQA's information disclosure requirements, the agency has "failed to proceed in the manner required by law." (*Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

However, whether an EIR satisfies CEQA's requirements depends in part on whether it was reasonably feasible for an agency to conduct additional or more thorough analysis. EIRs must contain "a detailed statement" of a project's impacts (Pub. Res. Code § 21061), and an agency must "use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines § 15144.) Nevertheless, "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." (CEQA Guidelines § 15151.)

SCAQMD submits that the question of whether additional analysis or a particular study suggested by a commenter is "feasible" is generally a question of fact. Courts have already held that whether a particular alternative is "feasible" is reviewed by the substantial evidence test.

(*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 598-99; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883.) Thus, if a lead agency determines that a particular study or analysis is infeasible, that decision should generally be judged by the substantial evidence standard. However, SCAQMD urges this Court to hold that lead agencies must explain the basis of any determination that a particular analysis is infeasible in the EIR itself. An EIR must discuss information, including issues related to the feasibility of particular analyses "in sufficient detail to enable meaningful participation and criticism by the public. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'" (*Laurel Heights I*, *supra*, 47 Cal.3d at p. 405 (quoting *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831) (discussing analysis of alternatives).) The evidence on which the determination is based should also be summarized in the EIR itself, with appropriate citations to reference materials if necessary. Otherwise commenting agencies such as SCAQMD would be forced to guess where the lead agency's evidence might be located, thus thwarting effective public participation.

Moreover, if a lead agency determines that a particular study or analysis would not result in reliable or useful information and for that reason is not feasible, that determination should be judged by the substantial evidence test. (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, *supra*, 57 Cal.4th 439, 448, 457:

whether "existing conditions" baseline would be misleading or uninformative judged by substantial evidence standard.[15])

If the lead agency's determination that a particular analysis or study is not feasible is supported by substantial evidence, then the agency has not violated CEQA's information disclosure provisions, since it would be infeasible to provide additional information. This Court's decisions provide precedent for such a result. For example, this Court determined that the issue of whether the EIR should have included a more detailed discussion of future herbicide use was resolved because substantial evidence supported the agency's finding that "the precise parameters of future herbicide use could not be predicted." *Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 955.

Of course, SCAQMD expects that courts will continue to hold lead agencies to their obligations to consult with, and not to ignore or misrepresent, the views of sister agencies having special expertise in the area of air quality. (*Berkeley Keep Jets Over the Bay v. Board of Port Commissioners* (2007) 91 Cal.App.4th 1344, 1364 n.11.) In some cases, information provided by such expert agencies may establish that the purported evidence relied on by the lead agency is not in fact "substantial". (*Id.* at pp. 1369-1371.)

In sum, courts retain ultimate responsibility to determine what CEQA requires. However, the law does not require exhaustive analysis, but only what is reasonably feasible. Agencies deserve deference for their factual determinations regarding what type of analysis is reasonably feasible. On the other hand, if a commenter requests more information, and the lead agency declines to provide it but does *not* determine that the

[15] The substantial evidence standard recognizes that the courts "have neither the resources nor the scientific expertise" to weigh conflicting evidence on technical issues. (*Laurel Heights I, supra,* 47 Cal.3d 376, 393.)

requested study or analysis would be infeasible, misleading or uninformative, the question becomes whether the omission of that analysis renders the EIR inadequate to satisfy CEQA's informational purposes. (*Id.* at pp. 1370-71.) Again, this is predominantly a question of law and should be judged by the de novo or independent judgment standard of review. Of course, this Court has recognized that a "project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study...might be helpful does not make it necessary." (*Laurel Heights I, supra,* 47 Cal.3d 376, 415 – see also CEQA Guidelines § 15204(a) [CEQA "does not require a lead agency to conduct every test. . . recommended or demanded by commenters."].) Courts, then, must adjudicate whether an omission of particular information renders an EIR inadequate to serve CEQA's informational purposes.[16]

[16] We recognize that there is case law stating that the substantial evidence standard applies to "challenges to the scope of an EIR's analysis of a topic" as well as the methodology used and the accuracy of the data relied on in the document "because these types of challenges involve factual questions." (*Bakersfield Citizens for Local Control v. City of Bakersfield, supra,* 124 Cal.App.4th 1184, 1198, and cases relied on therein.) However, we interpret this language to refer to situations where the question of the scope of the analysis really is factual—that is, where it involves whether further analysis is feasible, as discussed above. This interpretation is supported by the fact that the *Bakersfield* court expressly rejected an argument that a claimed "omission of information from the EIR should be treated as inquiries whether there is substantial evidence supporting the decision approving the project. " *Bakersfield, supra,* 124 Cal.App.4th at p. 1208. And the *Bakersfield* court ultimately decided that the lead agency must analyze the connection between the identified air pollution impacts and resulting health impacts, even though the EIR already included some discussion of air-pollution-related respiratory illnesses. *Bakersfield, supra,* 124 Cal.App.4th at p. 1220. Therefore, the court must not have interpreted this question as one of the "scope of the analysis" to be judged by the substantial evidence standard.

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law.

In its brief, Friant Ranch makes a distinction between cases where a required CEQA topic is not discussed at all (to be reviewed by independent judgment as a failure to proceed in the manner required by law) and cases where a topic is discussed, but the commenter claims the information provided is insufficient (to be judged by the substantial evidence test). (Opening Brief, pp. 13-17.) The Court of Appeal recognized these two types of cases, but concluded that both raised questions of law. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) We believe the distinction drawn by Friant Ranch is unduly narrow, and inconsistent with cases which have concluded that CEQA documents are insufficient. In many instances, CEQA's requirements are stated broadly, and the courts must interpret the law to determine what level of analysis satisfies CEQA's mandate for providing meaningful information, even though the EIR discusses the issue to some extent.

For example, the CEQA Guidelines require discussion of the existing environmental baseline. In *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954-955, the lead agency had discussed the environmental baseline by describing historic month-end water levels in the affected lakes. However, the court held that this was not an adequate baseline discussion because it failed to discuss the timing and amounts of past actual water releases, to allow comparison with the proposed project. The court evidently applied the independent judgment test to its decision, even though the agency discussed the issue to some extent.

Likewise, in *Vineyard Area Citizens* (2007) 40 Cal.4th 412, this Court addressed the question of whether an EIR's analysis of water supply impacts complied with CEQA. The parties agreed that the EIR was required to analyze the effects of providing water to the development project, "and that in order to do so the EIR had, in some manner, to identify the planned sources of that water." (*Vineyard Area Citizens, supra,* at p. 428.) However, the parties disagreed as to the level of detail required for this analysis and "what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR . . . ." (*Id.*) In other words, the EIR had analyzed water supply impacts for the project, but the petitioner claimed that the analysis was insufficient.

This Court noted that neither CEQA's statutory language or the CEQA Guidelines specifically addressed the question of how precisely an EIR must discuss water supply impacts. (*Id.*) However, it explained that CEQA "states that '[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.'" (*Id.*, [Guidelines § 15144].) The Court used this general principle, along with prior precedent, to elucidate four "principles for analytical adequacy" that are necessary in order to satisfy "CEQA's informational purposes." (*Vineyard Area Citizens, supra,* at p. 430.) The Court did not defer to the agency's determination that the EIR's analysis of water supply impacts was sufficient. Rather, this Court used its independent judgment to determine for itself the level of analysis required to satisfy CEQA's fundamental purposes. (*Vineyard Area Citizens, supra*, at p. 441: an EIR does not serve its purposes where it neglects to explain likely sources of water and "... leaves long term water supply considerations to later stages of the project.")

Similarly, the CEQA Guidelines require an analysis of noise impacts of the project. (Appendix G, "Environmental Checklist Form."[17]) In *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1123, the court held that the lead agency's noise impact analysis was inadequate even though it had addressed the issue and concluded that the increase would not be noticeable. If the court had been using the substantial evidence standard, it likely would have upheld this discussion.

Therefore, we do not agree that the issue can be resolved on the basis suggested by Friant Ranch, which would apply the substantial evidence standard to *every* challenge to an analysis that addresses a required CEQA topic. This interpretation would subvert the courts' proper role in interpreting CEQA and determining what the law requires.

Nor do we agree that the Court of Appeal in this case violated CEQA's prohibition on courts interpreting its provisions "in a manner which imposes procedural or substantive requirements beyond those explicitly stated in this division or in the state guidelines." (Pub. Resources Code § 21083.1.) CEQA requires an EIR to describe *all* significant impacts of the project on the environment. (Pub. Resources Code § 21100(b)(2); *Vineyard Area Citizens, supra,* at p. 428.) Human beings are part of the environment, so CEQA requires EIRs to discuss a project's significant impacts on human health. However, except in certain particular circumstances,[18] neither the CEQA statute nor Guidelines specify the precise level of analysis that agencies must undertake to satisfy the law's requirements. (see, e.g., CEQA Guidelines § 15126.2(a) [EIRs must describe "health and safety problems caused by {a project's} physical changes"].) Accordingly, courts must interpret CEQA as a whole to

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[17] Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) p.287.

[18] E.g., Pub. Resources Code § 21151.8(C)(3)(B)(iii) (requiring specific type of health risk analysis for siting schools).

determine whether a particular EIR is sufficient as an informational document. A court determining whether an EIR's discussion of human health impacts is legally sufficient does not constitute imposing a new substantive requirement.[19] Under Friant Ranch's theory, the above-referenced cases holding a CEQA analysis inadequate would have violated the law. This is not a reasonable interpretation.

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS

Courts must "scrupulously enforce" CEQA's legislatively mandated requirements. (*Vineyard Area Citizens, supra*, 40 Cal.4th 412, 435.) Case law has firmly established that lead agencies must consult with the relevant air pollution control district before conducting an initial study, and must provide the districts with notice of the intention to adopt a negative declaration (or EIR). (*Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 958.) As *Schenck* held, neither publishing the notice nor providing it to the State Clearinghouse was a sufficient substitute for sending notice directly to the air district. (*Id.*) Rather, courts "must be satisfied that [administrative] agencies have fully complied with the procedural requirements of CEQA, since only in this way can the important public purposes of CEQA be protected from subversion." *Schenck,* 198 Cal.App.4th at p. 959 (citations omitted).[20]

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[19] We submit that Public Resources Code Section 21083.1 was intended to prevent courts from, for example, holding that an agency must analyze economic impacts of a project where there are no resulting environmental impacts (see CEQA Guidelines § 15131) , or imposing new procedural requirements, such as imposing additional public notice requirements not set forth in CEQA or the Guidelines.

[20] Lead agencies must consult air districts, as public agencies with jurisdiction by law over resources affected by the project, *before* releasing an EIR. (Pub. Resources Code §§ 21104(a); 21153.) Moreover, air

Lead agencies should be aware, therefore, that failure to properly seek and consider input from the relevant air district constitutes legal error which may jeopardize their project approvals. For example, the court in *Fall River Wild Trout Foundation v. County of Shasta,* (1999) 70 Cal.App.4th 482, 492 held that the failure to give notice to a trustee agency (Department of Fish and Game) was prejudicial error requiring reversal. The court explained that the lack of notice prevented the Department from providing any response to the CEQA document. (*Id.* at p. 492.) It therefore prevented relevant information from being presented to the lead agency, which was prejudicial error because it precluded informed decision-making. (*Id.*)[21]

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districts should be considered "state agencies" for purposes of the requirement to consult with "trustee agencies" as set forth in Public Resources Code § 20180.3(a). This Court has long ago held that the districts are not mere "local agencies" whose regulations are superseded by those of a state agency regarding matters of statewide concern, but rather have concurrent jurisdiction over such issues. (*Orange County Air Pollution Control District v. Public Util. Com.* (1971) 4 Cal.3d 945, 951, 954.) Since air pollution is a matter of statewide concern, *Id* at 952, air districts should be entitled to trustee agency status in order to ensure that this vital concern is adequately protected during the CEQA process.

[21] In *Schenck,* the court concluded that failure to give notice to the air district was not prejudicial, but this was partly because the trial court had already corrected the error before the case arrived at the Court of Appeal. The trial court issued a writ of mandate requiring the lead agency to give notice to the air district. The air district responded by concurring with the lead agency that air impacts were not significant. (*Schenck,* 198 Cal.App.4th 949, 960.) We disagree with the *Schenck* court that the failure to give notice to the air district would not have been prejudicial (even in the absence of the trial court writ) merely because the lead agency purported to follow the air district's published CEQA guidelines for significance. (*Id.*, 198 Cal.App.4th at p. 960.) In the first place, absent notice to the air district, it is uncertain whether the lead agency properly followed those guidelines. Moreover, it is not realistic to expect that an air district's published guidelines would necessarily fully address all possible air-quality related issues that can arise with a CEQA project, or that those

Similarly, lead agencies must obtain additional information requested by expert agencies, including those with jurisdiction by law, if that information is necessary to determine a project's impacts. (*Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236-37.) Approving a project without obtaining that information constitutes a failure to proceed in the manner prescribed by CEQA. (*Id.* at p. 1236.)

Moreover, a lead agency can save significant time and money by consulting with the air district early in the process. For example, the lead agency can learn what the air district recommends as an appropriate analysis on the facts of its case, including what kinds of health impacts analysis may be available, and what models are appropriate for use. This saves the lead agency from the need to do its analysis all over again and possibly needing to recirculate the document after errors are corrected, if new significant impacts are identified. (CEQA Guidelines § 15088.5(a).) At the same time, the air district's expert input can help the lead agency properly determine whether another commenter's request for additional analysis or studies is reasonable or feasible. Finally, the air district can provide input on what mitigation measures would be feasible and effective.

Therefore, we suggest that this Court provide guidance to lead agencies reminding them of the importance of consulting with the relevant air districts regarding these issues. Otherwise, their feasibility decisions may be vulnerable to air district evidence that establishes that there is no substantial evidence to support the lead agency decision not to provide specific analysis. (*See Berkeley Keep Jets Over the Bay*, *supra*, 91 Cal.App.4th 1344, 1369-1371.)

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guidelines would necessarily be continually modified to reflect new developments. Therefore we believe that, had the trial court not already ordered the lead agency to obtain the air district's views, the failure to give notice would have been prejudicial, as in *Fall River, supra,* 70 Cal.App.4th 482, 492.

CONCLUSION

The SCAQMD respectfully requests this Court *not* to establish a hard-and-fast rule concerning whether CEQA requires a lead agency to correlate identified air quality impacts of a project with resulting health outcomes. Moreover, the question of whether an EIR is "sufficient as an informational document" is a mixed question of fact and law containing two levels of inquiry. Whether a particular proposed analysis is feasible is predominantly a question of fact to be judged by the substantial evidence standard of review. Where the requested analysis is feasible, but the lead agency relies on legal or policy reasons not to provide it, the question of whether the EIR is nevertheless sufficient as an informational document is predominantly a question of law to be judged by the independent judgment standard of review.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
KURT R. WIESE, GENERAL COUNSEL
BARBARA BAIRD, CHIEF DEPUTY COUNSEL

By: Barbara Baird

Barbara Baird
Attorneys for Amicus Curiae
SOUTH COAST AIR QUALITY MANAGEMENT DISTICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 8,476 words, including footnotes, but excluding the Application, Table of Contents, Table of Authorities, Certificate of Service, this Certificate of Word Count, and signature blocks. I have relied on the word count of the Microsoft Word Vista program used to prepare this Certificate.

DATED: April 3, 2015

Respectfully submitted,

Barbara Baird

Barbara Baird

PROOF OF SERVICE

I am employed in the County of Los Angeles, California. I am over the age of 18 years and not a party to the within action. My business address is 21865 Copley Drive, Diamond Bar, California 91765.

On April 3, 2015 I served true copies of the following document(s) described as **APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*** by placing a true copy of the foregoing document(s) in a sealed envelope addressed as set forth on the attached service list as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing following our ordinary business practices. I am readily familiar with this District's practice for collection and processing of correspondence for mailing. Under that practice, the correspondence would be deposited with the United States Postal Service, with postage thereon fully prepaid at Diamond Bar, California, in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 3, 2015 at Diamond Bar, California.

Patricia Anderson

Patricia Anderson

SERVICE LIST

James G. Moose, Tiffany K. Wright, Laura M. Harris REMY MOOSE MANLEY, LLP 555 Capitol Mall, Suite 800 Sacramento, CA 95814	Attorneys for Real Party in Interest and Respondent *Friant Ranch, L.P.*
Bryan N. Wagner WAGNER & WAGNER 7110 N. Fresno St, Suite 340 Fresno, CA 93720	Attorney for Real Party in Interest and Respondent *Friant Ranch, L.P.*
Sara Hedgpeth-Harris LAW OFFICE OF SARA HEDGPETH-HARRIS 5445 E. Lane Avenue Fresno, CA 93727	Attorney for Plaintiffs and Appellants *Sierra Club, et al*
Daniel C. Cederborg Bruce B. Johnson, Jr. Zachary Stephen Redmond OFFICE OF THE FRESNO COUNTY COUNSEL 2220 Tulare Street, Suite 500 Fresno, CA 93721	Attorneys for Respondents *County of Fresno*
Clerk of the Court California Court of Appeal Fifth Appellate District 2424 Ventura Street Fresno, CA 93721 *(via U.S. Mail & Electronic Transmission)*	
Clerk of the Court Superior Court of California County of Fresno 1130 O Street Fresno, CA 93721	

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