

Crestview Apartments

Draft Environmental Impact Report (DEIR)

Appendix B – Air Quality Impact Analysis & Freeway Health Risk Assessment



Crestview Apartments

AIR QUALITY IMPACT ANALYSIS

CITY OF RIVERSIDE

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com

Alyssa Tamase
atamase@urbanxroads.com

SEPTEMBER 18, 2020

TABLE OF CONTENTS

TABLE OF CONTENTS	I
APPENDICES	II
LIST OF EXHIBITS	II
LIST OF TABLES	II
LIST OF ABBREVIATED TERMS.....	III
EXECUTIVE SUMMARY	1
ES.1 Summary of Findings.....	1
ES.2 Standard Regulatory Requirements/Best Available Control Measures.....	1
ES.3 Construction-Source and Operational-Source Mitigation Measures	2
1 INTRODUCTION.....	4
1.1 Site Location.....	4
1.2 Project Description.....	4
2 AIR QUALITY SETTING.....	8
2.1 South Coast Air Basin	8
2.2 Regional Climate	8
2.3 Wind Patterns and Project Location	9
2.4 Criteria Pollutants	10
2.5 Existing Air Quality	17
2.6 Regional Air Quality	20
2.7 Local Air Quality	20
2.8 Regulatory Background.....	21
3 PROJECT AIR QUALITY IMPACT	27
3.1 Introduction	27
3.2 Standards of Significance	27
3.3 California Emissions Estimator Model™ Employed To Analyze Air Quality	28
3.4 Construction Emissions.....	29
3.5 Operational Emissions	32
3.6 Localized Significance - Construction Activity.....	35
3.7 Localized Significance – Long-Term Operational Activity	41
3.8 CO “Hot Spot” Analysis	41
3.9 Air Quality Management Planning.....	44
3.10 Potential Impacts to Sensitive Receptors	46
3.11 Odors.....	46
3.12 Cumulative Impacts	47
4 REFERENCES.....	50
5 CERTIFICATIONS	54

APPENDICES

APPENDIX 2.1: STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS	
APPENDIX 3.1: CALEEMOD EMISSIONS MODEL OUTPUTS	
APPENDIX 3.2: BLASTING CALCULATIONS	
APPENDIX 3.3: EMFAC2017 OUTPUTS	

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP	5
EXHIBIT 1-B: SITE PLAN	6
EXHIBIT 3-A: SENSITIVE RECEPTOR LOCATIONS	39

LIST OF TABLES

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS	1
TABLE 2-1: CRITERIA POLLUTANTS	10
TABLE 2-2: AMBIENT AIR QUALITY STANDARDS (1 OF 2).....	18
TABLE 2-2: AMBIENT AIR QUALITY STANDARDS (2 OF 2).....	19
TABLE 2-3: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SCAB	20
TABLE 2-4: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2017-2019.....	21
TABLE 3-1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS	27
TABLE 3-2: CONSTRUCTION TRIP ASSUMPTIONS	30
TABLE 3-3: CONSTRUCTION DURATION.....	30
TABLE 3-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS	31
TABLE 3-5: OVERALL CONSTRUCTION EMISSIONS SUMMARY (WITHOUT MITIGATION).....	32
TABLE 3-6: SUMMARY OF PEAK OPERATIONAL EMISSIONS	35
TABLE 3-7: MAXIMUM DAILY DISTURBED-ACREAGE.....	37
TABLE 3-8: MAXIMUM DAILY LOCALIZED EMISSIONS THRESHOLDS	40
TABLE 3-9: LOCALIZED SIGNIFICANCE SUMMARY OF CONSTRUCTION (WITHOUT MITIGATION).....	41
TABLE 3-10: CO MODEL RESULTS	42
TABLE 3-11: TRAFFIC VOLUMES	43
TABLE 3-12: PROJECT PEAK HOUR TRAFFIC VOLUMES	43

LIST OF ABBREVIATED TERMS

(1)	Reference
$\mu\text{g}/\text{m}^3$	Microgram per Cubic Meter
AQIA	Air Quality Impact Analysis
AQMP	Air Quality Management Plan
BACM	Best Available Control Measures
BBAQMD	Bay Area Air Quality Management District
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
CITY	City of Riverside
CO	Carbon Monoxide
DU	Dwelling Units
EB	Eastbound
EIR	Environmental Impact Reports
EMFAC	Emission Factor Model
EPA	Environmental Protection Agency
GHG	Greenhouse Gas
HI	Hazard Index
I-215	Interstate 215
ITE	Institute of Transportation Engineers
LBS/DAY	Pounds Per Day
LST	Localized Significance Threshold
LST METHODOLOGY	Final Localized Significance Threshold Methodology
MARB	March Air Reserve Base
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
O_3	Ozone
OPR	Office of Planning and Research

Pb	Lead
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
PPM	Parts Per Million
Project	Crestview Apartments
RECLAIM	Regional Clean Air Incentives Market
RIVTAM	Riverside County Traffic Analysis Model
ROG	Reactive Organic Gases
RTP/SCS	Regional Transportation Plan/ Sustainable Communities Strategy
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SR-60	State Route 60
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TA	Traffic Analysis
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
VPH	Vehicles Per Hour
WB	Westbound

This page intentionally left blank

EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this *Crestview Apartments Air Quality Impact Analysis* are summarized below based on the significance criteria in Section 3 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines (1). Table ES-1 shows the findings of significance for each potential air quality impact under CEQA before and after any required mitigation measures described below.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Regional Construction Emissions	3.4	<i>Less Than Significant</i>	<i>n/a</i>
Localized Construction Emissions	3.6	<i>Less Than Significant</i>	<i>n/a</i>
Regional Operational Emissions	3.5	<i>Less Than Significant</i>	<i>n/a</i>
Localized Operational Emissions	3.7	<i>Less Than Significant</i>	<i>n/a</i>
CO “Hot Spot” Analysis	3.8	<i>Less Than Significant</i>	<i>n/a</i>
Air Quality Management Plan	3.9	<i>Less Than Significant</i>	<i>n/a</i>
Sensitive Receptors	3.10	<i>Less Than Significant</i>	<i>n/a</i>
Odors	3.11	<i>Less Than Significant</i>	<i>n/a</i>
Cumulative Impacts	3.12	<i>Less Than Significant</i>	<i>n/a</i>

ES.2 STANDARD REGULATORY REQUIREMENTS/BEST AVAILABLE CONTROL MEASURES

Measures listed below (or equivalent language) shall appear on all Project grading plans, construction specifications and bid documents, and the City shall ensure such language is incorporated prior to issuance of any development permits. South Coast Air Quality Management District (SCAQMD) Rules that are currently applicable during construction activity for this Project include but are not limited to Rule 403 (Fugitive Dust) (2) and Rule 1113 (Architectural Coatings) (3). It should be noted that these Best Available Control Measures (BACMs) are not mitigation as

they are standard regulatory requirements. Because they are required by law, credit for Rule 403 and Rule 1113 have been taken in the analysis.

BACM AQ-1

The contractor shall adhere to applicable measures contained in Table 1 of Rule 403 including, but not limited to (2):

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.
- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three (3) times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are limited to 15 miles per hour or less.

BACM AQ-2

The following measures shall be incorporated into Project plans and specifications as implementation of SCAQMD Rule 1113 (4):

- Only “Low-Volatile Organic Compounds (VOC)” paints (no more than 50 gram/liter of VOC) consistent with SCAQMD Rule 1113 shall be used.

BACM AQ-3

The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development (3).

ES.3 CONSTRUCTION-SOURCE AND OPERATIONAL-SOURCE MITIGATION MEASURES

The Project would not exceed any thresholds of significance for construction or operational-source emissions. As such, a less than significant impact would occur for Project-related construction and operational-source emissions and no mitigation would be required.

This page intentionally left blank

1 INTRODUCTION

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

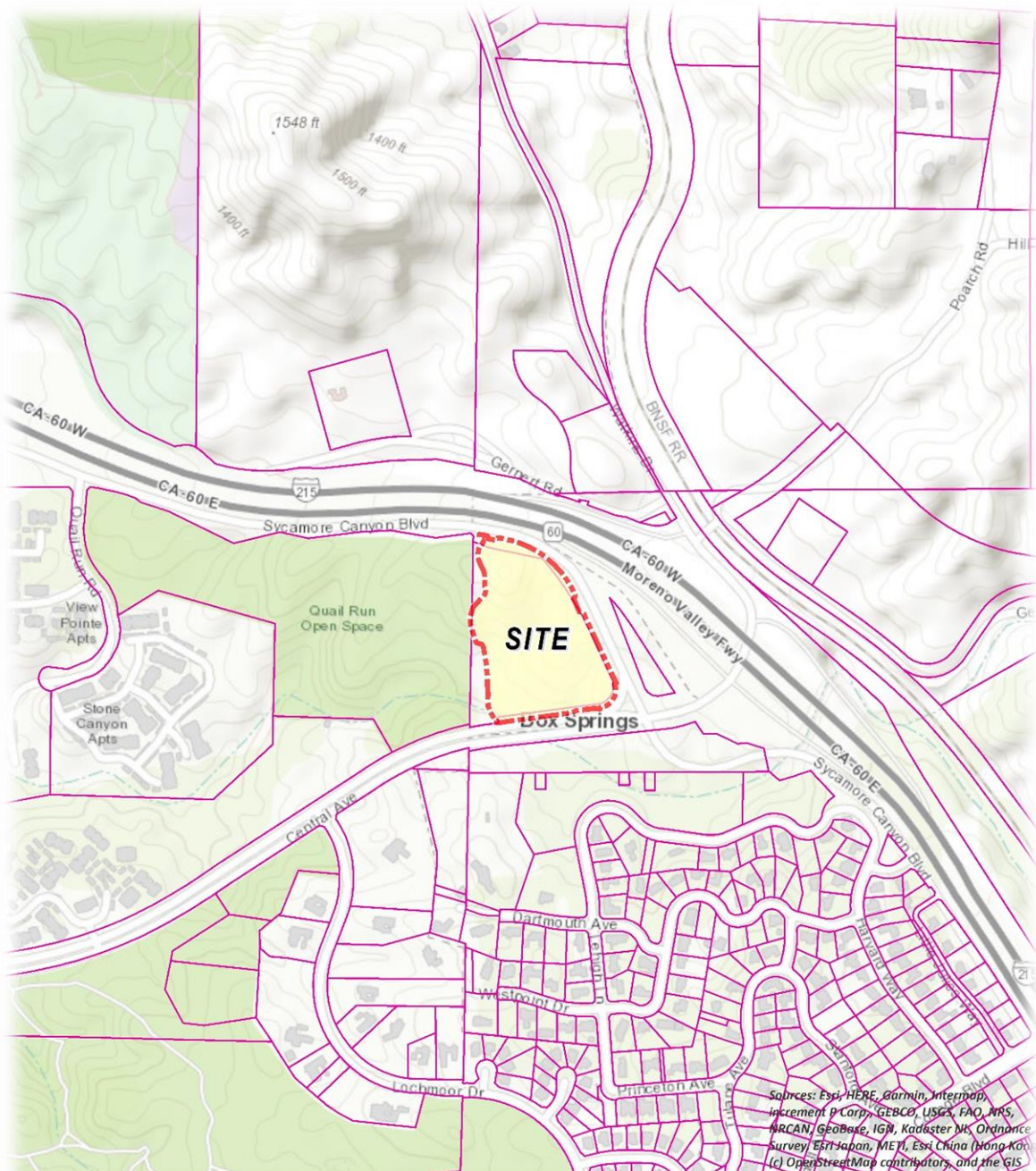
1.1 SITE LOCATION

The proposed Crestview Apartments Project is located at the northwest corner of Sycamore Canyon Boulevard and Central Avenue in the City of Riverside, as shown on Exhibit 1-A.

The proposed Project is located approximately 237 feet southwest of Interstate 215 (I-215) / State Route 60 (SR-60). The closest airport to the Project site is March Air Reserve Base (MARB) which is located approximately 4.7 miles southeast of the Project site. The Project site is currently vacant. The closest existing residential uses include single-family residential homes to the south and multi-family uses to the west of the Project site.

1.2 PROJECT DESCRIPTION

The total development is proposed to consist of 237 multifamily residential dwelling units (DU), as shown on Exhibit 1-B.

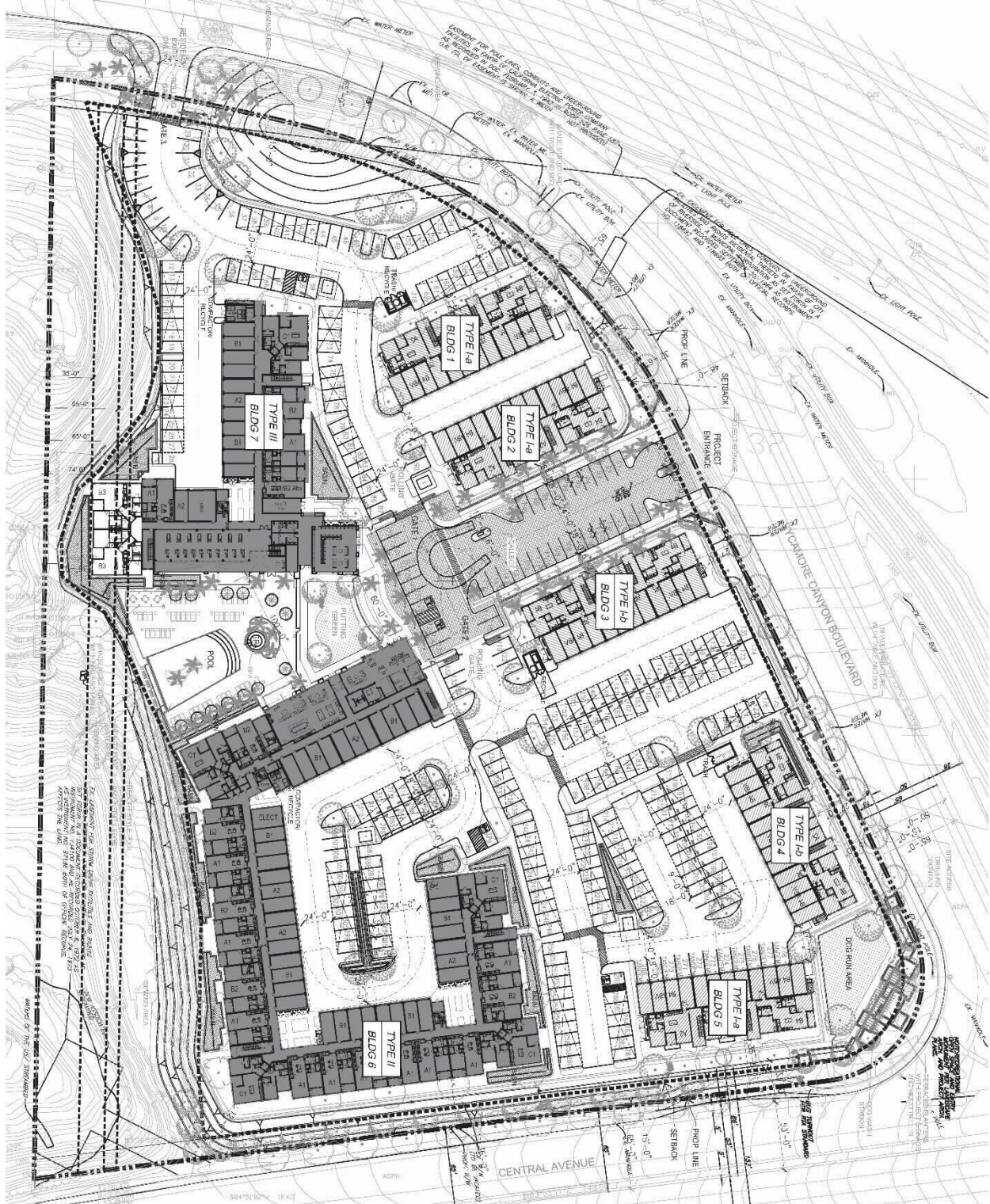
EXHIBIT 1-A: LOCATION MAP**LEGEND:**

Limits of Construction



Parcel Boundaries

EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

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

The Project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD (5). 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). 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 (SO₂) to sulfates 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 percent along the coast and 59 percent 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 percent 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 high levels of primary pollutants along the coastline.

2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the Project area and the SCAB 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.

2.4 CRITERIA POLLUTANTS

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and health effects are identified below (6):

TABLE 2-1: CRITERIA POLLUTANTS

Criteria Pollutant	Description	Sources	Health Effects
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 engines, unlike ozone, 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.	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 supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen 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 (oxygen deficiency) as seen at high altitudes.

Criteria Pollutant	Description	Sources	Health Effects
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 sulfates (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 SO₂ 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 SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂. Animal studies suggest that despite SO₂ being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ 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.

Criteria Pollutant	Description	Sources	Health Effects
NO _x	NO _x consist of nitric oxide (NO), nitrogen dioxide (NO ₂) and nitrous oxide (N ₂ O) and are formed when nitrogen (N ₂) combines with oxygen (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 are typically created during combustion processes and are major contributors 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 NO₂ 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 NO₂ 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 NO₂ considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO₂.
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. Ozone concentrations are generally	Formed when reactive organic gases (ROG) and NO _x react in the presence of sunlight. ROG sources	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 ozone effects.

Criteria Pollutant	Description	Sources	Health Effects
	highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.	include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Short-term exposure (lasting for a few hours) to ozone 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 ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone 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 live in communities with high ozone levels. Ozone 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 ozone may be more toxic than exposure to ozone 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 (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust,	Sources of PM ₁₀ include road dust, windblown dust and construction. Also	A consistent correlation between elevated ambient fine particulate matter (PM ₁₀ and PM _{2.5}) levels and an

Criteria Pollutant	Description	Sources	Health Effects
	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. Additionally, it should be noted that PM₁₀ is considered a criteria air pollutant. PM_{2.5} (Particulate Matter less than 2.5 microns): A similar air pollutant to PM₁₀ consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO₂ release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM_{2.5} is a criteria air pollutant.	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).	increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different 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 cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM₁₀ and PM_{2.5}.
Volatile Organic Compounds (VOC)	VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) 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	Organic chemicals are widely used as ingredients in household products. Paints, varnishes and wax all contain organic solvents, as do many cleaning, disinfecting,	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

Criteria Pollutant	Description	Sources	Health Effects
	compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone 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. Exceptions to the VOC designation include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O ₃ , which is a criteria pollutant. The terms VOC and ROG (see below) interchangeably.	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.	effects, though many have several.
ROG	Similar to VOC, ROG's are also precursors in forming ozone 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. ROG's are a criteria pollutant since they are a precursor to O ₃ , which is a criteria pollutant. The terms ROG and VOC (see previous) are used interchangeably.	Sources similar to VOCs.	Health effects similar to VOCs.
Lead (Pb)	Lead is a heavy metal that is highly persistent in the environment and is considered a criteria pollutant. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. The major sources of lead emissions are ore and metals processing, particularly lead smelters, and piston-engine aircraft operating on leaded aviation gasoline. Other stationary sources include	Metal smelters, resource recovery, leaded gasoline, deterioration of lead 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

Criteria Pollutant	Description	Sources	Health Effects
	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 lead acid battery manufacturing. As such, the Project is not anticipated to generate a quantifiable amount of lead emissions.		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.
Odor	Odor means the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves.	Odors can come from many sources including animals, human activities, industry, natures, and vehicles.	Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, studies have shown that the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.5 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 2-2 (7).

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 2-2. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, PM₁₀, and PM_{2.5} are not to be exceeded. 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 Air District 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, a State Implementation Plan (SIP) is drafted. 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 (8).

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

Ambient Air Quality Standards							
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/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry	
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)			
Respirable Particulate Matter (PM10) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m ³		—			
Fine Particulate Matter (PM2.5) ⁹	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³	15 µg/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 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence	
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard		
Sulfur Dioxide (SO ₂) ¹¹	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)	
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)		
	24 Hour	0.04 ppm (105 µg/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 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption	
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹²	Same as Primary Standard		
	Rolling 3-Month Average	—		0.15 µg/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 µg/m ³	Ion Chromatography				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence				
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography				

See footnotes on next page ...

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

TABLE 2-2: 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 $150 \mu\text{g}/\text{m}^3$ 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 $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15 \mu\text{g}/\text{m}^3$. The existing 24-hour PM10 standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ 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 ($1.5 \mu\text{g}/\text{m}^3$ 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.

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

2.6 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, O₃, particulate matter (PM₁₀ and PM_{2.5}), NO₂, and SO₂ 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 (9). On February 21, 2019, CARB posted the 2018 amendments to the state and national area designations. See Table 2-3 for attainment designations for the SCAB (10). Appendix 2.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

TABLE 2-3: 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 O₃ standard was revoked effective June 15, 2005.

2.7 LOCAL AIR QUALITY

The Project site is located within the Source Receptor Area (SRA) 23. Within SRA 23, the SCAQMD Metropolitan Riverside County 1 monitoring station is located 6.45 miles northwest of the Project site and is the nearest long-term air quality monitoring site for O₃, CO, NO₂, PM₁₀, and PM_{2.5}.

The most recent three (3) years of data available is shown on Table 2-4 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 O₃, CO, NO₂, PM₁₀, and PM_{2.5} for 2017 through 2019 was obtained from the SCAQMD Air Quality Data Tables (11). Additionally, data for SO₂ has been omitted as attainment is regularly met in the SCAB and few monitoring stations measure SO₂ concentrations.

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

TABLE 2-4: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2017-2019

Pollutant	Standard	Year		
		2017	2018	2019
O ₃				
Maximum Federal 1-Hour Concentration (ppm)		0.145	0.123	0.123
Maximum Federal 8-Hour Concentration (ppm)		0.118	0.101	0.096
Number of Days Exceeding Federal 1-Hour Standard	>0.124 ppm ¹	2	0	0
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	47	22	24
Number of Days Exceeding Federal/State 8-Hour Standard	> 0.070 ppm	81	53	59
CO				
Maximum Federal 1-Hour Concentration	> 35 ppm	1.9	2.2	1.5
Maximum Federal 8-Hour Concentration	> 20 ppm	1.7	2.0	1.2
NO ₂				
Maximum Federal 1-Hour Concentration	> 0.100 ppm	0.063	0.055	0.056
Annual Federal Standard Design Value		0.015	0.014	0.014
PM ₁₀				
Maximum Federal 24-Hour Concentration (µg/m ³)	> 150 µg/m ³	138	126	99
Annual Federal Arithmetic Mean (µg/m ³)		41.6	44.0	34.4
Number of Days Exceeding Federal 24-Hour Standard	> 150 µg/m ³	0	0	0
Number of Days Exceeding State 24-Hour Standard	> 50 µg/m ³	103	132	21
PM _{2.5}				
Maximum Federal 24-Hour Concentration (µg/m ³)	> 35 µg/m ³	50.30	50.70	46.70
Annual Federal Arithmetic Mean (µg/m ³)	> 12 µg/m ³	12.18	12.41	11.13
Number of Days Exceeding Federal 24-Hour Standard	> 35 µg/m ³	6	2	4

µg/m³ = Microgram per Cubic MeterSource: Data for O₃, CO, NO₂, PM₁₀, and PM_{2.5} was obtained from SCAQMD Air Quality Data Tables.¹ The SCAQMD 2017-2019 Air Quality Data Tables presents the Number of Days Exceeding the Federal 1-Hour Standard based on the Old Federal Standard of >0.124 ppm.

2.8 REGULATORY BACKGROUND

2.8.1 FEDERAL REGULATIONS

The EPA is responsible for setting and enforcing the NAAQS for O₃, CO, NO_x, SO₂, PM₁₀, and Pb (12). 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 the 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 (13). 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) (14) (15). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O₃, NO₂, SO₂, PM₁₀, CO, PM_{2.5}, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O₃ 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.

2.8.2 CALIFORNIA REGULATIONS

California Air Resource Board. The 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. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However, at this time, hydrogen sulfide and vinyl chloride 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 (16) (12).

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 (AQMPs) 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 five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROG_s, NO_x, CO and PM₁₀. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

Title 24 Energy Efficiency Standards and California Green Building Standards. California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, 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. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas (GHG) emissions. The 2019 version of Title 24 was adopted by the California Energy Commission (CEC) and became effective on January 1, 2020. It should be noted that the analysis herein assumes compliance with the 2019 Title 24 Standards.

The CEC indicates that the 2019 Title 24 standards will require solar photovoltaic systems for new homes, establish requirements for newly constructed healthcare facilities, encourage demand responsive technologies for residential buildings, update indoor and outdoor lighting for nonresidential buildings. The CEC anticipates that single-family homes built with the 2019 standards will use approximately 7 percent less energy compared to the residential homes built under the 2016 standards. Additionally, after implementation of solar photovoltaic systems, homes built under the 2019 standards will about 53 percent less energy than homes built under the 2016 standards. Nonresidential buildings will use approximately 30 percent less energy due to lighting upgrades (17).

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 January 1, 2011, 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 2019 California Green Building Code Standards that will be effective January 1, 2020. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction and demolition ordinances and defers to them as the ruling guidance provided, they establish a minimum 65 percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings must meet in order to be certified for occupancy, which is generally enforced by the local building official. 2019 CALGreen standards are applicable to the Project and require (18):

- 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 percent 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 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- Designated parking. 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).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65 percent 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 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phase 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 at 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 portable water use 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 (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 gal/day (5.303.1.1 and 5.303.1.2).

- Outdoor water use 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).

2.8.4 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS 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 (19). 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. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.9.

This page intentionally left blank

3 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. Additionally, the Project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the SCAB is non-attainment under an applicable federal or state ambient air quality standard. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State 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 (1):

- 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 also developed regional significance thresholds for other regulated pollutants, as summarized at Table 3-1 (20). 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.

TABLE 3-1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
Regional 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

Source: Regional Thresholds presented in this table are based on the SCAQMD Air Quality Significance Thresholds, April 2019

3.3 CALIFORNIA EMISSIONS ESTIMATOR MODEL™ EMPLOYED TO ANALYZE AIR QUALITY

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

On October 17, 2017, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod) v2016.3.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (21). 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 Appendix 3.1.

3.3.1 EMISSION FACTORS MODEL

On August 19, 2019, the EPA approved the 2017 version of the Emission Factor model (EMFAC) web database for use in State Implementation Plan and transportation conformity analyses. EMFAC2017 is a mathematical model that was developed to calculate emission rates, fuel consumption, and VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the CARB to project changes in future emissions from on-road mobile sources (22). This AQIA utilizes summer, winter, and annual EMFAC2017 emission factors in order to derive vehicle emissions associated with Project operational activities, which vary by season.

3.3.2 LAND USES MODELED IN CAL EEMOD

The Project is located on 9.77 acres. The total development is proposed to consist of 237 multifamily residential DU.

CalEEMod does not provide an extensive selection of land use subtype categories, land uses that most closely fit the Project will be utilized (23). For purposes of analysis, the following land uses were modeled consistent with the *Crestview Apartments Traffic Analysis* (Urban Crossroads, Inc., 2019) (TA) (24):

- 75 DU Apartments Low Rise²
- 162 DU Apartments Mid Rise³
- 428 Space Parking Lot⁴ on 0.82 acres

² The User's Guide defines Apartments Low Rise as apartment units located in rental buildings that have 1 to 2 levels. As the building or unit area has not been provided, the CalEEMod default lot acreage and floor surface area of 4.69 acres and 75,000 square feet will be used.

³ Apartments Mid Rise are defined in the User's Guide as apartments in rental buildings that have between 3 and 10 levels. As the building or unit area has not been provided, the CalEEMod default lot acreage and floor surface area of 4.26 acres and 162,000 square feet will be used.

⁴ As indicated on the site plan, the total Project will provide 428 parking spaces. For purposes of analysis, the remaining 0.82 acres will be used to analyze the 428 parking spaces.

3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following construction activities:

- Site Preparation (including Blasting)
- Crushing
- Grading
- Building Construction
- Paving
- Architectural Coating

Blasting

The estimated emissions of NO_x, CO, and SO_x from explosives used for blasting were determined using emission factors in Section 13.3 (Explosives Detonation) of AP-42 (EPA 1980), and PM₁₀ and PM_{2.5} emissions were determined using Section 11.9 of AP-42 (25). According to AP-42, “Unburned hydrocarbons also result from explosions, but in most instances, methane is the only species that has been reported” (EPA 1980); methane is not a VOC, and a methane emission factor has not been determined for ammonium nitrate/fuel oil (ANFO). This AQIA conservatively analyzes the 12,000 sf of blasting area per day. Additional details on the emissions calculation associated with Blasting are provided in Appendix 3.2.

Crushing

The Project activities will include on-site crushing of concrete and asphalt pulverizing during demolition activity. The crushing/pulverizing activity will be powered by one (1) Caterpillar Generator Set using an EPA Certified Tier 4 interim Cat C27 heavy duty diesel engine. The crushed/pulverized material will be utilized on-site.

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. Based on information provided by the Project Applicant, the Project is expected to require 20,000 cubic yards (CY) of import from the warehouse construction site located approximately 10 miles from the Project site and 10,000 CY of export which would conservatively be hauled off-site at a distance of 50 miles. For purposes of analysis a weighted trip length of 23 miles has been used.

Construction Vehicle Trips

Construction emissions for construction worker vehicles traveling to and from the Project site, as well as vendor trips (construction materials delivered to the Project site) were estimated based on information from CalEEMod defaults. The number of worker, hauling, and vendor trips are presented below in Table 3-2.

TABLE 3-2: CONSTRUCTION TRIP ASSUMPTIONS

Phase Name	Trips			Trip Length		
	Worker (Trips/Day)	Vendor (Trips/Day)	Hauling (Total)	Worker	Vendor	Hauling
Site Preparation (Including Blasting)	18	0	0	14.7	6.9	20
Crushing	3	0	0	14.7	6.9	20
Grading	15	0	3,750	14.7	6.9	23 ¹
Building Construction	186	31	0	14.7	6.9	20
Paving	15	0	0	14.7	6.9	20
Architectural Coating	37	0	0	14.7	6.9	20

¹ CalEEMod does not distinguish different trip lengths for import and export activities. As such, a weighted trip length is used for hauling trips.

3.4.1 CONSTRUCTION DURATION

Construction is expected to commence in October 2021 and will last through April 2023. The construction schedule utilized in the analysis, shown in Table 3-3, represents a “worst-case” analysis scenario should construction occur any time after the respective dates since emission 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*. The duration of construction activity was based on information provided by the Project applicant. The Project is anticipated to be fully built and occupied in 2023.

TABLE 3-3: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation (Including Blasting)	10/04/2021	10/15/2021	10
Crushing	10/16/2021	11/12/2021	20
Grading	11/13/2021	12/10/2021	20
Building Construction	12/11/2021	02/03/2023	300
Paving	02/04/2023	03/03/2023	20
Architectural Coating	03/04/2023	04/30/2023	40

Source: Construction activity based upon information provided by the Project Applicant.

⁵ As shown in the CalEEMod User’s Guide Version 2016.3.2, 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.

3.4.2 CONSTRUCTION EQUIPMENT

Site specific construction fleet may vary due to specific project needs at the time of construction. The associated construction equipment by phase is detailed in Table 3-4.

TABLE 3-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Activity	Equipment	Amount	Hours Per Day
Site Preparation (including Blasting)	Crawler Tractors	4	8
	Rubber Tired Dozers	3	8
Crushing	Generator Set	1	8
Grading	Crawler Tractors	3	8
	Excavators	1	8
	Graders	1	8
	Rubber Tired Dozers	1	8
Building Construction	Cranes	1	8
	Crawler Tractors	3	8
	Forklifts	3	8
	Generator Sets	1	8
	Welders	1	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

Source: In order to account for fugitive dust emissions associated with Site Preparation and Grading activities, Crawler Tractors were used in lieu of Tractors/Loaders/Backhoes.

3.4.1 CONSTRUCTION EMISSIONS SUMMARY

Impacts without Mitigation

CalEEMod calculates maximum daily emissions for summer and winter periods. The estimated maximum daily construction emissions without mitigation are summarized on Table 3-5. Detailed construction model outputs are presented in Appendix 3.1. Under the assumed scenarios, emissions resulting from the Project construction will not exceed criteria pollutant thresholds established by the SCAQMD for emissions of any criteria pollutant.

TABLE 3-5: OVERALL CONSTRUCTION EMISSIONS SUMMARY (WITHOUT MITIGATION)

Year	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Summer						
2021 ¹	7.21	83.90	25.58	0.20	20.91	8.53
2022	3.69	32.92	24.49	0.07	3.57	1.81
2023	37.73	28.65	23.62	0.07	3.41	1.66
Winter						
2021 ¹	7.21	84.34	24.35	0.20	20.91	8.53
2022	3.68	32.91	23.35	0.07	3.57	1.81
2023	37.73	28.63	22.54	0.07	5.27	1.66
Maximum Daily Emissions	37.73	84.34	25.58	0.20	20.91	7.07
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

¹ 2021 Emissions include emissions from Blasting activities.

Source: CalEEMod construction-source (unmitigated) emissions are presented in Appendix 3.1.

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Operational emissions would be expected from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions

3.5.1 AREA SOURCE EMISSIONS

Architectural Coatings

Over a period of time the building that is part of this Project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of Project maintenance. The emissions associated with architectural coatings were calculated using CalEEMod.

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.

Hearths/Fireplaces

The emissions associated with use of hearths/fireplaces were calculated based on assumptions provided in the CalEEMod model. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development. In order to account for the requirements of this Rule, the unmitigated CalEEMod model estimates were adjusted to remove wood burning stoves and fireplaces. As the project is required to comply with SCAQMD Rule 445, the removal of wood burning stoves and fireplaces is not considered "mitigation" although it must be identified as such in CalEEMod in order to treat the case appropriately.

Landscape Maintenance Equipment

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in CalEEMod.

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 is 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.

3.5.3 MOBILE SOURCE EMISSIONS

The Project related operational air quality emissions derive primarily from vehicle trips generated by the Project. Trip characteristics available from the TA were utilized in this analysis. Per TA, the Project is expected to generate a total of approximately 1,386 trip-ends per day (actual vehicles) (24).

3.5.3.1 Trip Length

Trip lengths for passenger cars were determined based on the regional traffic model. The Riverside County Traffic Analysis Model (RivTAM) was used to estimate trip lengths for the Project's passenger cars.

More specifically, RivTAM was utilized to conduct select zone model runs for the proposed Project. RivTAM was prepared for the Riverside County Transportation Department as a sub-regional model based on Southern California Association of Governments (SCAG) model, which includes the entire SCAG region. Adjustments were made to the socio-economic data within the

RivTAM (2040) traffic analysis zone (TAZ) where the Project is located to reflect the Project land use

The Vehicle Miles Traveled (VMT) from/to the Project TAZ by vehicle type was calculated based on select zone model skims. The average trip length was calculated based on the model VMT and daily traffic flow by vehicle type. Based on the model runs, the average trip length was calculated to be 11.5 miles.

The use of a travel demand model is supported by substantial evidence since the information contained in the model is specific to the region and for the land use type being proposed. Furthermore, the use of travel demand models is also a recommended practice that is being promoted by the Governor's Office of Planning and Research (OPR) in their updated CEQA guidelines with respect to Senate Bill (SB) 743. Specifically, the latest technical advisory documentation published by OPR (December 2018 see Page 30-31) (26) explicitly states that:

"...agencies can use travel demand models or survey data to estimate existing trip lengths and input those into sketch models such as CalEEMod to achieve more accurate results. Whenever possible, agencies should input localized trip lengths into a sketch model to tailor the analysis to the project location."

The procedure described by OPR in their SB 743 technical advisory is precisely the method that has been used to calculate trip lengths and consequently VMT for the Project.

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 estimates for travel on paved roads were calculated using CalEEMod.

3.5.5 OPERATIONAL EMISSIONS SUMMARY

Impacts without Mitigation

As previously stated, CalEEMod utilizes summer and winter EMFAC2017 emission factors in order to derive vehicle emissions associated with Project operational activities, which vary by season. As such, operational activities for summer and winter scenarios are presented in Table 3-6. Detailed construction model outputs are presented in Appendix 3.1. As indicated, Project operation-source emissions would not exceed the SCAQMD regional thresholds of significance for any criteria pollutants. Therefore, a less than significant impact is expected, and no mitigation measures are required.

TABLE 3-6: SUMMARY OF PEAK OPERATIONAL EMISSIONS

Operational Activities – Summer Scenario	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	6.17	4.16	21.27	0.03	0.43	0.43
Energy Source	0.07	0.61	0.26	3.92E-03	0.05	0.05
Mobile Source	3.34	8.51	30.85	0.11	9.64	2.64
Total Maximum Daily Emissions	9.58	13.28	52.38	0.14	10.11	3.12
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Operational Activities – Winter Scenario	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	6.17	4.16	21.27	0.03	0.43	0.43
Energy Source	0.07	0.61	0.26	3.92E-03	0.05	0.05
Mobile Source	3.19	8.94	27.92	0.10	9.64	2.64
Total Maximum Daily Emissions	9.43	13.71	49.45	0.13	10.11	3.12
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Source: CalEEMod operational-source emissions are presented in Appendix 3.1.

3.6 LOCALIZED SIGNIFICANCE - CONSTRUCTION ACTIVITY

BACKGROUND ON LOCALIZED SIGNIFICANCE THRESHOLD (LST) DEVELOPMENT

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (27). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the NAAQS and CAAQS. Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of any given project are above or below State standards. In the case of CO and NO₂, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM₁₀ and PM_{2.5}; both of which are non-attainment pollutants.

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4⁶. LSTs represent the maximum emissions from a project that will not cause

⁶ 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."

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* (28).

APPLICABILITY OF LSTs FOR THE PROJECT

For this Project, the appropriate SRA for the LST analysis is Metropolitan Riverside County 1 (SRA 23). LSTs apply to CO, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size.

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:

- CalEEMod is utilized to determine the maximum daily on-site emissions that will occur during construction activity.
- The SCAQMD's *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* and CalEEMod User's Guide *Appendix A: Calculation Details for CalEEMod* is used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod (29) (30).
- If the total acreage disturbed is less than or equal to five 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 pounds per day that can be compared to CalEEMod outputs.
- If the total acreage disturbed is greater than five acres per day, then LST impacts are appropriately evaluated through dispersion modeling.

EMISSIONS CONSIDERED

SCAQMD's Methodology clearly states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs (27)." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered.

MAXIMUM DAILY DISTURBED-ACREAGE

The "acres disturbed" for analytical purposes are based on specific equipment type for each subcategory of construction activity and the estimated maximum area a given piece of equipment can pass over in an 8-hour workday (as shown on Table 3-7). The equipment-specific disturbance rates were obtained from the CalEEMod user's guide, *Appendix A: Calculation Details for CalEEMod* (October 2017). It should be noted that the disturbed area per day is representative of a piece of equipment making multiple passes over the same land area. In other words, one

Rubber Tired Dozer can make multiple passes over the same land area totaling 0.5 acres in a given 8-hour day. Based on Table 3-7, the proposed Project could actively disturb approximately 3.5 acre per day during site preparation activities and 2.5 acres per day for grading activities. Since equipment related to crushing activities do not have specific disturbance rates, for purposes of analysis, it is assumed that the Project could actively disturb approximately 1 acre per day during crushing activities.

TABLE 3-7: MAXIMUM DAILY DISTURBED-ACREAGE

Construction Phase	Equipment Type	Equipment Quantity	Acres graded per 8-hour day	Operating Hours per Day	Acres graded per day
Site Preparation (including Blasting)	Crawler Tractors	4	0.5	8	2.0
	Graders	0	0.5	8	0
	Rubber Tired Dozers	3	0.5	8	1.5
	Scrapers	0	1.0	8	0
Total acres disturbed per day during Site Preparation (Including Blasting)					3.5
Crushing	Crawler Tractors	0	0.5	8	0
	Graders	0	0.5	8	0
	Rubber Tired Dozers	0	0.5	8	0
	Scrapers	0	1.0	8	0
Total acres disturbed per day during Crushing					0
Grading	Crawler Tractors	3	0.5	8	1.0
	Graders	1	0.5	8	0.5
	Rubber Tired Dozers	1	0.5	8	0.5
	Scrapers	0	1.0	8	0
Total acres disturbed per day during Grading					2.5

Sensitive Receptors

As previously stated, LSTs represent the maximum emissions from a project that will 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, individuals with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather to exercise are defined as “sensitive receptors”. These structures typically include residences, hotels, hospitals, etc. as they are also known to be locations 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 (in this case the nearest residential land use) has been used to determine construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5}, since PM₁₀ and PM_{2.5} thresholds are based on a 24 hour averaging time.

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 eight hours or less. The *LST Methodology* explicitly states that “*LSTs based on shorter averaging periods, such as the NO₂ 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 (27).*” Consistent with the *LST Methodology*, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO₂ and CO.

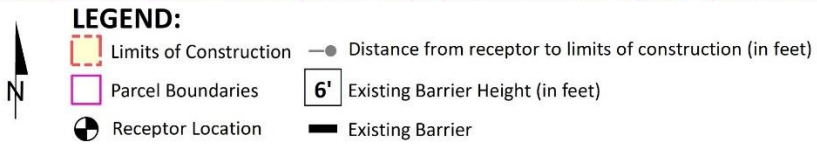
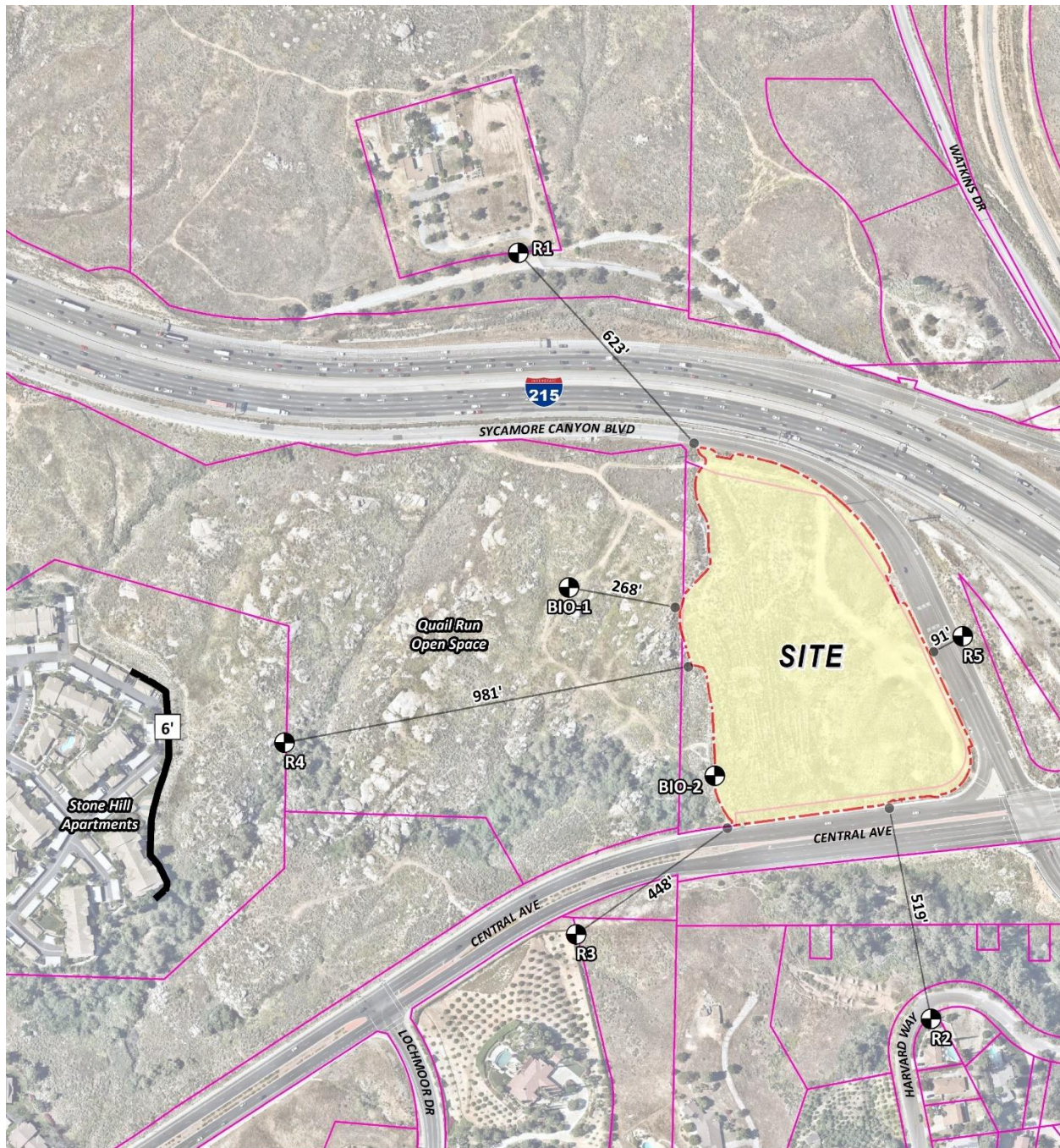
Project-related Sensitive Receptors

Receptors in the Project study area are described below and shown on Exhibit 3-A. Localized air quality impacts were evaluated at receptor land uses nearest the Project site. Consistent with the *Crestview Apartments Noise Impact Analysis*, prepared by Urban Crossroads, Inc., all distances are measured in a straight line from the Project limits of construction to the parcel boundary or property line of the nearest receiver locations (31).

- R1: Location R1 represents the existing residence north of Gernet Road, approximately 623 feet northwest of the Project site.
- R2: Location R2 represents the existing residence at 20098 Harvard Way, approximately 519 feet south of the Project site.
- R3: Location R3 represents the existing residence at 5240 Lochmoor Drive, approximately 448 feet southwest of the Project site.
- R4: Location R4 represents the Stone Hill Apartments at 5100 Quail Run Road, approximately 981 feet west of the Project site.
- R5: Location R5 represents the approved commercial uses at the northeast corner of Central Avenue and Sycamore Canyon Boulevard, 91 feet east from the Project site.
- BIO-1: Location BIO-1 represents the middle of the existing Quail Run Open Space, approximately 268 feet west of the Project site.
- BIO-2: Location BIO-2 represents the boundary of the existing Quail Run Open Space.

This AQIA analyzes localized construction and operational emissions impacts at the nearest sensitive receptors. The nearest receptor where an individual can stay for a 24-hour period is represented by locations R3. Location R3 is roughly 448 feet/ 137 meters southwest of the Project site. The 149-meter distance will be used to evaluate construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5}.

EXHIBIT 3-A: SENSITIVE RECEPTOR LOCATIONS



As previously stated, and consistent with *LST Methodology*, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_x and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assumed that an individual could be present at these sites for periods of one to 8 hours. Thus, the nearest receptor used for evaluation of localized impacts of NO_x and CO is represented by location R5, located 91 feet/28 meters east from the Project site.

LOCALIZED THRESHOLDS FOR CONSTRUCTION ACTIVITY

Since the total acreage disturbed is less than five acres per day for the site preparation phase and the grading phase, the SCAQMD's screening look-up tables are utilized in determining impacts. It should be noted that since the look-up tables identifies thresholds at only 1 acre, 2 acres, and 5 acres, linear regression has been utilized, consistent with SCAQMD guidance, in order to interpolate the threshold values for the other disturbed acreage and distances not identified in the look-up tables.

TABLE 3-8: MAXIMUM DAILY LOCALIZED EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
Localized Thresholds		
NO _x	224 lbs/day (Site Preparation including Blasting)	N/A
	122 lbs/day (Crushing)	
	120 lbs/day (Grading)	
CO	1,289 lbs/day (Site Preparation including Blasting)	N/A
	636 lbs/day (Crushing)	
	1,049 lbs/day (Grading)	
PM ₁₀	62 lbs/day (Site Preparation including Blasting)	N/A
	44 lbs/day (Crushing)	
	55 lbs/day (Grading)	
PM _{2.5}	18 lbs/day (Site Preparation including Blasting)	N/A
	12 lbs/day (Crushing)	
	16 lbs/day (Grading)	

CONSTRUCTION-SOURCE EMISSIONS LST ANALYSIS

Impacts without Mitigation

Table 3-9 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Without mitigation, localized construction emissions would not exceed the applicable SCAQMD LSTs for emissions of any critical pollutant. Outputs from the model runs for unmitigated construction LSTs are provided in Appendix 3.1.

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

On-Site Site Preparation (Including Blasting) Emissions	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Maximum Daily Emissions	60.79	21.85	11.14	6.46
SCAQMD Localized Threshold	224	1,289	62	18
Threshold Exceeded?	NO	NO	NO	NO
On-Site Crushing Emissions	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Maximum Daily Emissions	46.21	14.53	0.96	0.96
SCAQMD Localized Threshold	122	636	44	12
Threshold Exceeded?	NO	NO	NO	NO
On-Site Grading Emissions	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Maximum Daily Emissions	39.95	16.38	5.07	2.90
SCAQMD Localized Threshold	120	1,049	55	16
Threshold Exceeded?	NO	NO	NO	NO

3.7 LOCALIZED SIGNIFICANCE – LONG-TERM OPERATIONAL ACTIVITY

The development of the proposed project is located on 9.77 acres. As previously stated, the total development is proposed to consist of 237 multifamily residential DU. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, no long-term localized significance threshold analysis is needed.

3.8 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. At the time of the 1993 Handbook, the SCAB was designated nonattainment under the CAAQS and NAAQS for CO (32).

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, as previously noted in Table 2-3. Also, CO concentrations in the Project vicinity have steadily declined, as indicated by historical emissions data presented previously at Table 2-4. 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 3-10.

TABLE 3-10: CO MODEL RESULTS

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

Source: 2003 AQMP, Appendix V: Modeling and Attainment Demonstrations

Note: 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, 9.3 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 8.6 ppm were due to the ambient air measurements at the time the 2003 AQMP was prepared (33). In contrast, the ambient 8-hr CO concentration within the Project study area is estimated at 1.4 ppm—1.6 ppm (please refer to previous Table 2-3). 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 (34).

The 2003 AQMP, and as previously shown in Table 3-10, estimated that the highest 1-hour concentration was 4.6 ppm at the Wilshire and Veteran intersection. 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).⁷ As shown in Exhibit 6-2 of the TA, the highest trips on a segment of road for the Project is 23,200 vehicles per day on Sycamore Canyon Boulevard and Central Avenue (24).

Traffic volumes generating the CO concentrations for the “hot spot” analysis is shown on Table 3-10. The busiest intersection evaluated for AM traffic volumes was at Wilshire Blvd. and Veteran Ave., which has an AM traffic volume of approximately 8,062 vehicles per hour. Alternatively, the busiest intersection for PM traffic volumes was at La Cienega Boulevard and Century Boulevard, which has a PM traffic volume of 8,674 vph (35). As shown on Table 3-11, the highest trips on a segment of road for the Project is 3,302 vph on Sycamore Canyon Boulevard and Central Avenue (24). As such, Project-related traffic volumes are less than the traffic volumes identified in the 2003 AQMP. The proposed Project considered herein 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 proposed Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

TABLE 3-11: TRAFFIC VOLUMES

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

Source: 2003 AQMP

TABLE 3-12: PROJECT 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)
Sycamore Canyon Blvd./Central Ave.	1,615/782	257/527	790/1,230	422/763	3,084/3,302
Central Ave./SR-60 EB Ramps	1,731/1,144	518/1,376	190/112	0/0	2,439/2,632
Central Ave./SR-60 WB Ramps	1,568/497	360/1,045	0/0	576/682	2,505/2,224
Watkins Dr./ Central Ave. & SR-60 WB Ramps	1,987/845	450/1,057	0/0	0/0	2,438/1,902

EB = Eastbound

WB = Westbound

Source: Crestview Apartments Traffic Impact Analysis (Urban Crossroads, Inc., 2019).

⁷ Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm).

3.9 AIR QUALITY MANAGEMENT PLANNING

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 four-county Basin and the Los Angeles County and Riverside County portions of what used 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 AQMD 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 (36). Similar to the 2012 AQMP, the 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS), a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (19). The Project's consistency with the AQMP will be determined using the 2016 AQMP as discussed below.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993) (37). These indicators are discussed below:

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

Operational Impacts – Consistency Criterion 1

As evaluated, the Project's regional and localized operational-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 consistent with the first criterion.

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 Riverside General Plan is considered to be consistent with the AQMP.

Construction Impacts – Consistency Criterion 2

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities.

Operational Impacts – Consistency Criterion 2

The City of Riverside General Plan designates the Project site as Commercial. The Commercial designation provides for retail, sales, service and office uses that serve multiple neighborhoods within the City (38). As previously stated, the total development is proposed to consist of 237 multifamily residential DU. The Project's residential land use and development is not consistent with the land use designation stated in the General Plan. As such, the Project would require a General Plan Amendment. However, since the Project construction and operational regional and localized emissions do not exceed the thresholds of significance, the Project would not cause an exceedance of an air quality violation. It should also be noted that the residential use proposed by the Project will generate less traffic and consequently fewer emissions than if the Project site were developed consistent with the commercial land use designation (retail, sales, service and office uses), which would generate more trips and consequently more emissions than the proposed Project.

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. Although the Project would not be consistent with the site land use and zoning designations, construction and operational-

source impacts would not exceed the applicable SCAQMD regional and localized thresholds. As such, the Project is therefore considered to be consistent with the AQMP.

3.10 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long-term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, childcare centers, and athletic facilities can also be considered as sensitive receptors. Project sensitive receptors are described in Section 3.6 of this report and include existing residential uses, approved commercial uses, and the existing Quail Run Open Space. As previously stated, The Quail Run Open Space Part has been included as Project-related sensitive receptors (BIO-1 and BIO-2). These receptors are not considered for purposes of this analysis but is presented for consistency with other technical reports.

Results of the LST analysis indicate that, with application of mitigation, the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial criteria pollutant concentrations during Project construction.

Results of the LST analysis indicate that 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.

3.11 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 City's 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 (39).

3.12 CUMULATIVE IMPACTS

The Project area is designated as a non-attainment area for ozone, PM_{2.5}, and lead.

The AQMD 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* (40). In this report the AQMD clearly states (Page D-3):

...the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or Environmental Impact Report (EIR). The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

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 the Basin 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 Project construction-source air pollutant emissions would not result in exceedances of

regional thresholds. Therefore, 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 Project operational-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

This page intentionally left blank

4 REFERENCES

1. **State of California.** 2019 CEQA California Environmental Quality Act. 2019.
2. **South Coast Air Quality Management District.** Rule 403 - Fugitive Dust. [Online]
<https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4>.
3. —. Rule 445 - Wood Burning Devices. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/support-documents/rule-445/detailed-rule-445-information.pdf>.
4. —. Rule 1113 - Architectural Coating. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf>.
5. —. Southern California Air Basins. [Online]
<https://www.arb.ca.gov/msprog/onroad/porttruck/maps/scabc7map.pdf>.
6. —. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.* 2005.
7. **California Air Resources Board.** Ambient Air Quality Standards (AAQS). [Online] 2016.
<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
8. **United State Environmental Protection Agency.** Frequent Questions about General Conformity . EPA. [Online] <https://www.epa.gov/general-conformity/frequent-questions-about-general-conformity#8>.
9. **South Coast Air Quality Management District.** Annual Air Quality Monitoring Network Plan. [Online] July 2018. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-monitoring-network-plan/annual-air-quality-monitoring-network-plan-v2.pdf?sfvrsn=2>.
10. **Air Resources Board.** State and National Ambient Air Quality Standards. [Online]
https://www.arb.ca.gov/regact/2019/stateareadesignations/appc.pdf?_ga=2.169398369.1537615702.1554741141-1192937971.1505156621.
11. **South Coast Air Quality Management District.** Historical Data By Year. [Online]
<https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year>.
12. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990.
<https://www.epa.gov/environmental-topics/air-topics>.
13. —. Air Pollution and the Clean Air Act. [Online] <http://www.epa.gov/air/caa/>.
14. **United States Environmental Protection Agency.** 1990 Clean Air Act Amendment Summary: Title I. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-i>.
15. —. 1990 Clean Air Act Amendment Summary: Title II. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-ii>.
16. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: April 16, 2018.] <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.
17. **California Energy Commission .** 2019 Building Energy Efficiency Standards. [Online]
https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf.
18. **California Building Standards Commission.** 2019 California Green Building Standards Code. [Online]
<https://codes.iccsafe.org/content/CAGBSC2019/cover>.
19. **Southern California Association of Governments.** 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. [Online] April 2016.
<http://scagrtpscsc.net/Documents/2016/final/f2016RTPSCS.pdf>.

20. **South Coast Air Quality Management District (SCAQMD).** SCAQMD Air Quality Significance Thresholds. [Online] <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.
21. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] September 2016. www.caleemod.com.
22. **California Department of Transportation.** EMFAC Software. [Online] <http://www.dot.ca.gov/hq/env/air/pages/emfac.htm>.
23. **California Air Pollution Control Officers Association.** California Emissions Estimator Model User's Guide. [Online] November 2017. <http://www.caleemod.com/>.
24. **Urban Crossroads, Inc.** *Crestview Apartments Traffic Analysis*. 2020.
25. **U.S. Environmental Protection Agency.** *Compilation of Air Pollutant Emission Factors*. 1995. AP-42.
26. **Governor's Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA*. 2018.
27. **South Coast Air Quality Management District.** *Localized Significance Thresholds Methodology*. s.l. : South Coast Air Quality Management District, 2003.
28. **Lake Environmental.** US EPA Models. *Lake Environmental*. [Online] http://www.weblakes.com/download/us_epa.html.
29. **South Coast Air Quality Management District.** Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. [Online] <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf>.
30. **California Air Pollution Control Officers Association (CAPCOA).** Appendix A: Calculation Details for CalEEMod. *CalEEMod*. [Online] October 2017. http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.
31. **Urban Crossroads, Inc.** *Crestview Apartments Noise Impact Analysis*. 2020.
32. **South Coast Air Quality Management District.** 2003 Air Quality Management Plan. [Online] 2003. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2003-air-quality-management-plan/2003-aqmp-appendix-v.pdf>.
33. —. 2003 Air Quality Management Plan. [Online] 2003. <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2003-aqmp>.
34. **Bay Area Air Quality Management District.** [Online] <http://www.baaqmd.gov/>.
35. **South Coast Air Quality Management District.** 2003 Air Quality Management Plan. [Online] 2003. <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2003-aqmp>.
36. —. Final 2016 Air Quality Management Plan (AQMP). [Online] March 2017. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=11>.
37. **South coast Air Quality Management District.** *CEQA Air Quality Handbook (1993)*. 1993.
38. **City of Riverside.** Riverside General Plan 2025. [Online] 2019. https://riversideca.gov/cedd/sites/riversideca.gov.chedd/files/pdf/planning/general-plan/04_Land_Use_and_Urban_Design_Element_with%20maps%20COMPLETE%20AUGUST%202019.pdf.
39. **South Coast Air Quality Management District.** RULE 402 NUISANCE. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf>.

40. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003.
http://www.aqmd.gov/rules/ciwig/final_white_paper.pdf.

This page intentionally left blank

5 CERTIFICATIONS

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Crestview Apartments. 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 (949) 336-5987.

Haseeb Qureshi
Associate 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 – California Air Resources Board • August 2007
AB2588 Regulatory Standards – Trinity Consultants • November 2006
Air Dispersion Modeling – Lakes Environmental • June 2006

This page intentionally left blank

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

[This page intentionally left blank]

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 Fluorescence; 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, PM_{2.5}, 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 µg/m³ is equal to or less than one. For PM_{2.5}, 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 PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ 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 SO₂ 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 SO₂ 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 µg/m³ 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.

[This page intentionally left blank]

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

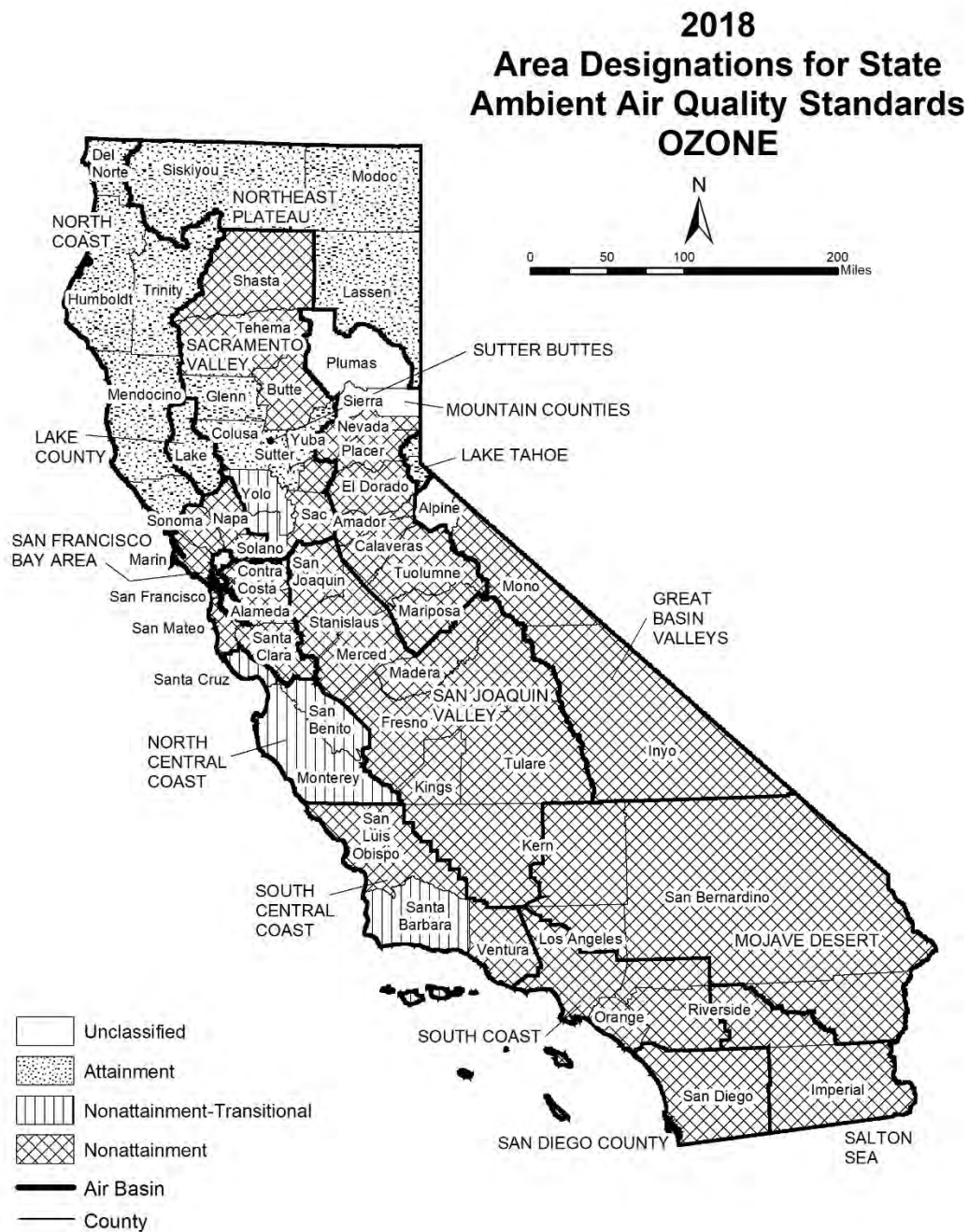


TABLE 1

**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



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



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					

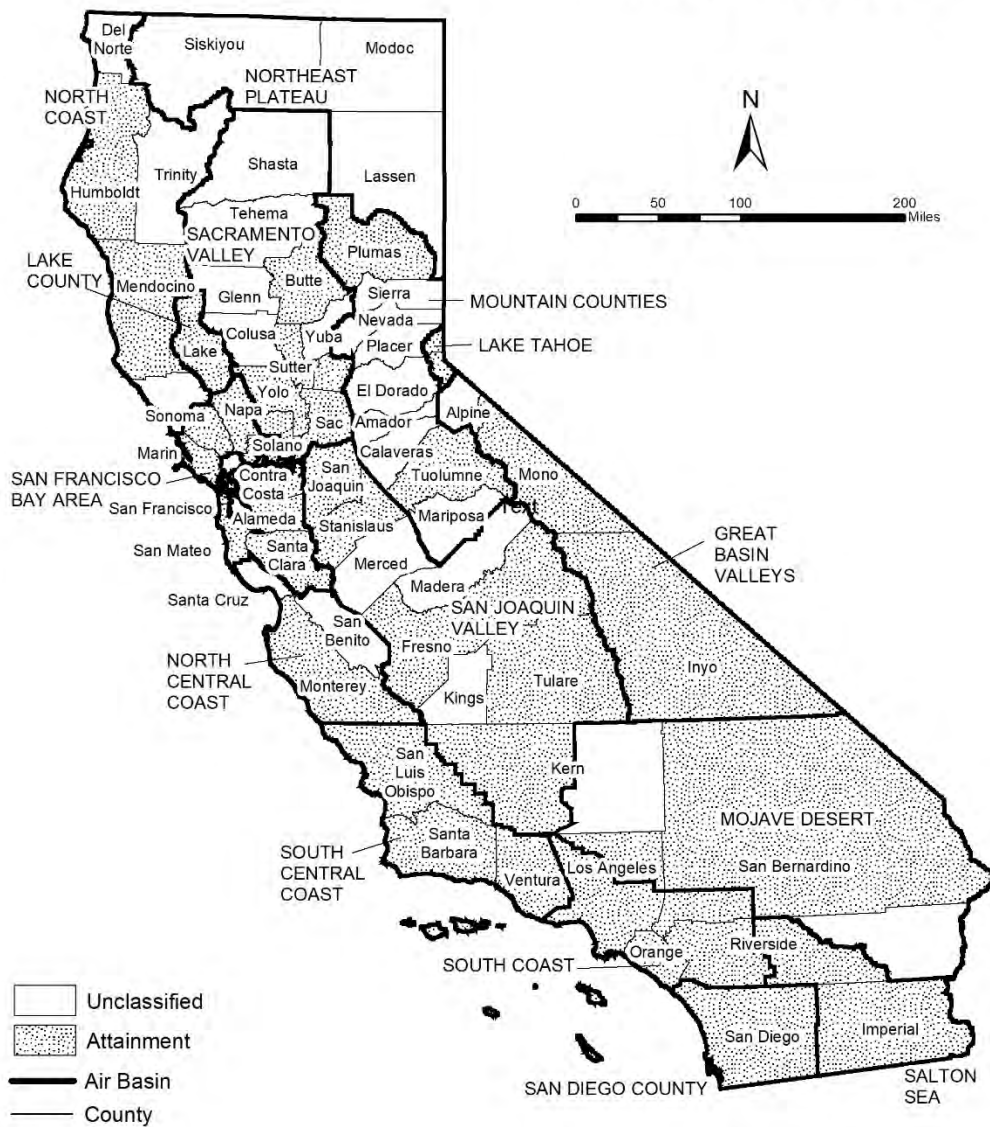
(1) California Code of Regulations, title 17, section 60200(b)

(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

2018
Area Designations for State
Ambient Air Quality Standards
NITROGEN DIOXIDE



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



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



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				

**2018
Area Designations for State
Ambient Air Quality Standards
LEAD**

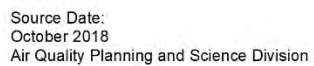


TABLE 8

**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



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						

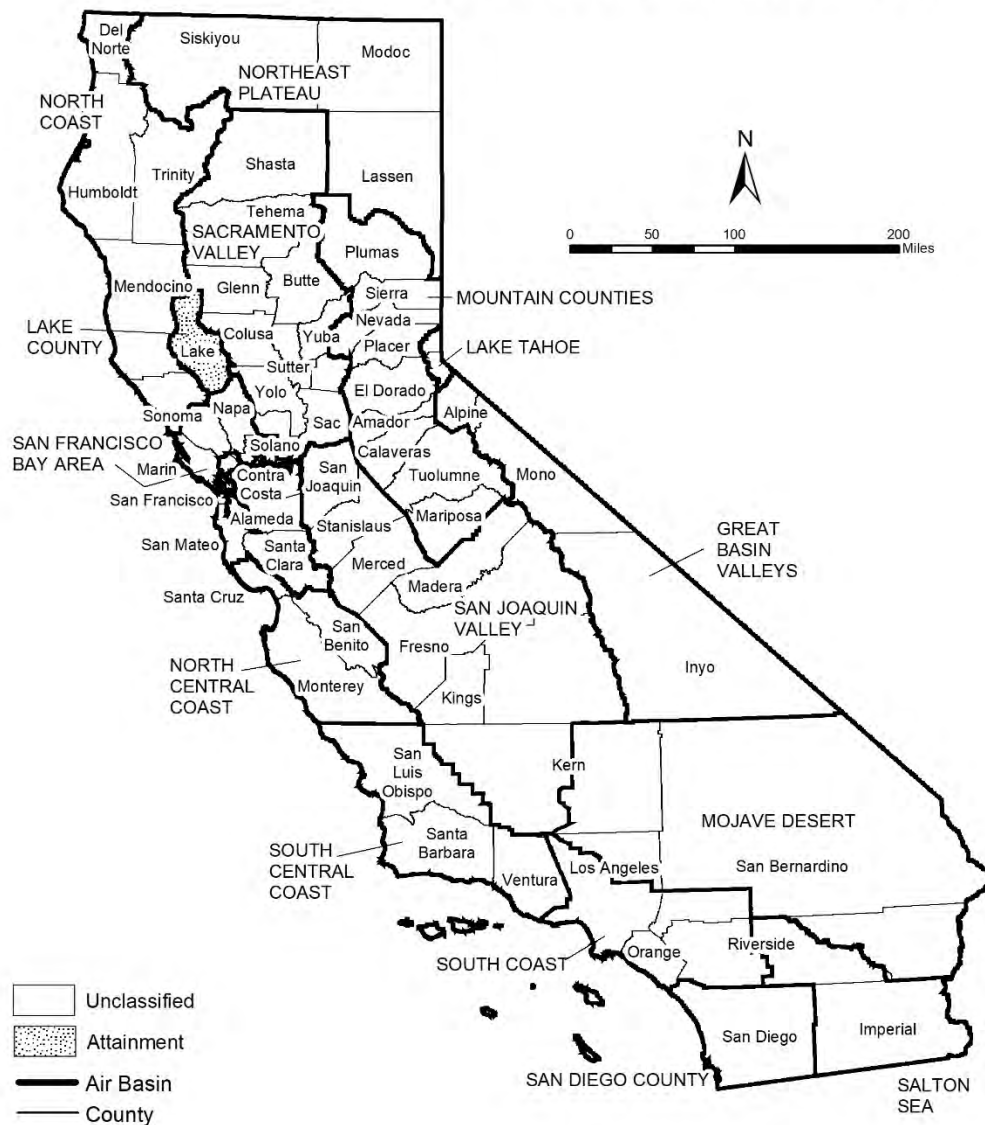
* The area designated for hydrogen sulfide is a county or portion of a county

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

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

FIGURE 10

2018
Area Designations for State
Ambient Air Quality Standards
VISIBILITY REDUCING PARTICLES



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>

Designation Categories

Suspended Particulate Matter (PM₁₀). The U.S. EPA uses three categories to designate areas with respect to PM₁₀:

- Attainment
- Nonattainment
- Unclassifiable

Ozone, Fine Suspended Particulate Matter (PM_{2.5}), Carbon Monoxide (CO), and Nitrogen Dioxide (NO₂). 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 µg/m³. 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 µg/m³ as well as the 24-hour standard of 35 µg/m³, revised in 2006.

On January 22, 2010, the U.S. EPA established a new national 1-hour NO₂ standard of 100 parts per billion (ppb) and retained the annual average standard of 53 ppb. Designations for the primary NO₂ standard became effective on February 29, 2012. All areas of California meet this standard.

Sulfur Dioxide (SO₂). 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 SO₂ 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 SO₂ 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/m³. 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



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.

Area Designations for National Ambient Air Quality Standards PM₁₀

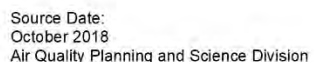


TABLE 12

**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 PM_{2.5}



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



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



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 SO₂ 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



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

This page intentionally left blank

APPENDIX 3.1:

CALEEMOD EMISSIONS MODEL OUTPUTS

12585 Crestview Apartments - Riverside-South Coast County, Summer

12585 Crestview Apartments

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	428.00	Space	0.82	35,719.00	0
Apartments Low Rise	75.00	Dwelling Unit	4.69	75,000.00	239
Apartments Mid Rise	162.00	Dwelling Unit	4.26	162,000.00	515

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

12585 Crestview Apartments - Riverside-South Coast County, Summer

Project Characteristics -

Land Use - Per parcel number and TIA analysis

Construction Phase - Per 18 month site plan provided by Project Applicant

Off-road Equipment - 8 hour workday

Off-road Equipment - Per standard procedure

Off-road Equipment - Per standard procedure

Off-road Equipment -

Off-road Equipment - Per standard procedure

Trips and VMT - Weighted Trip Length of 23 miles

Grading - Per equipment grading capabilities

Architectural Coating - Rule 1103

Vehicle Trips - 10th Generation ITE

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors - EMFAC2017

Woodstoves - Rule 445

Energy Use - Title 24 2019

Construction Off-road Equipment Mitigation - Rule 403

Off-road Equipment - Based on information provided by the Project Applicant, there will be 1 crushers on-site

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	LightingElect	810.36	380.87
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	T24E	877.14	412.26
tblEnergyUse	T24E	772.17	362.92

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblEnergyUse	T24NG	9,544.50	4,485.92
tblEnergyUse	T24NG	8,764.08	4,119.12
tblFireplaces	NumberGas	63.75	75.00
tblFireplaces	NumberGas	137.70	162.00
tblFireplaces	NumberNoFireplace	7.50	0.00
tblFireplaces	NumberNoFireplace	16.20	0.00
tblFireplaces	NumberWood	3.75	0.00
tblFireplaces	NumberWood	8.10	0.00
tblGrading	AcresOfGrading	40.00	50.00
tblGrading	AcresOfGrading	20.00	35.00
tblGrading	MaterialExported	0.00	10,000.00
tblGrading	MaterialImported	0.00	20,000.00
tblLandUse	LandUseSquareFeet	171,200.00	35,719.00
tblLandUse	LotAcreage	3.85	0.82
tblLandUse	Population	215.00	239.00
tblLandUse	Population	463.00	515.00
tblOffRoadEquipment	HorsePower	84.00	1,050.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblTripsAndVMT	HaulingTripLength	20.00	23.00
tblVehicleEF	HHD	0.96	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	2.07	6.43
tblVehicleEF	HHD	0.41	0.24
tblVehicleEF	HHD	1.44	4.3850e-003
tblVehicleEF	HHD	6,147.84	1,065.92
tblVehicleEF	HHD	1,399.88	1,272.83
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	17.43	5.31
tblVehicleEF	HHD	0.97	1.96
tblVehicleEF	HHD	20.29	2.50
tblVehicleEF	HHD	5.1890e-003	2.3650e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	4.9650e-003	2.2630e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.8060e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	7.3000e-005	3.0000e-006
tblVehicleEF	HHD	2.3430e-003	9.7000e-005
tblVehicleEF	HHD	0.55	0.44
tblVehicleEF	HHD	4.3000e-005	2.0000e-006

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.5400e-004	4.4400e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.06	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.1000e-005	0.00
tblVehicleEF	HHD	7.3000e-005	3.0000e-006
tblVehicleEF	HHD	2.3430e-003	9.7000e-005
tblVehicleEF	HHD	0.63	0.50
tblVehicleEF	HHD	4.3000e-005	2.0000e-006
tblVehicleEF	HHD	0.08	0.05
tblVehicleEF	HHD	1.5400e-004	4.4400e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.91	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	1.50	6.35
tblVehicleEF	HHD	0.41	0.24
tblVehicleEF	HHD	1.38	4.1390e-003
tblVehicleEF	HHD	6,513.09	1,052.83
tblVehicleEF	HHD	1,399.88	1,272.83
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	17.99	5.06
tblVehicleEF	HHD	0.91	1.85
tblVehicleEF	HHD	20.28	2.50
tblVehicleEF	HHD	4.3760e-003	2.0780e-003
tblVehicleEF	HHD	0.06	0.06

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	4.1860e-003	1.9880e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.8060e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	1.4000e-004	5.0000e-006
tblVehicleEF	HHD	2.6540e-003	1.0600e-004
tblVehicleEF	HHD	0.51	0.46
tblVehicleEF	HHD	8.2000e-005	3.0000e-006
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.5700e-004	4.4900e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.06	9.8850e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.0000e-005	0.00
tblVehicleEF	HHD	1.4000e-004	5.0000e-006
tblVehicleEF	HHD	2.6540e-003	1.0600e-004
tblVehicleEF	HHD	0.59	0.53
tblVehicleEF	HHD	8.2000e-005	3.0000e-006
tblVehicleEF	HHD	0.08	0.05
tblVehicleEF	HHD	1.5700e-004	4.4900e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	1.04	0.02
tblVehicleEF	HHD	0.03	8.2000e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	2.85	6.51
tblVehicleEF	HHD	0.41	0.15
tblVehicleEF	HHD	1.46	4.3390e-003
tblVehicleEF	HHD	5,643.45	1,077.40
tblVehicleEF	HHD	1,399.88	1,253.68
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	16.66	5.62
tblVehicleEF	HHD	0.96	1.92
tblVehicleEF	HHD	20.29	2.50
tblVehicleEF	HHD	6.3140e-003	2.7000e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	6.0400e-003	2.5830e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.7520e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	5.5000e-005	3.0000e-006
tblVehicleEF	HHD	2.4340e-003	1.0800e-004
tblVehicleEF	HHD	0.59	0.40
tblVehicleEF	HHD	3.6000e-005	2.0000e-006
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.6500e-004	4.7200e-004
tblVehicleEF	HHD	0.04	1.0000e-006

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.1000e-005	0.00
tblVehicleEF	HHD	5.5000e-005	3.0000e-006
tblVehicleEF	HHD	2.4340e-003	1.0800e-004
tblVehicleEF	HHD	0.68	0.46
tblVehicleEF	HHD	3.6000e-005	2.0000e-006
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	HHD	1.6500e-004	4.7200e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	LDA	3.3240e-003	1.8870e-003
tblVehicleEF	LDA	4.1920e-003	0.04
tblVehicleEF	LDA	0.51	0.56
tblVehicleEF	LDA	0.96	2.04
tblVehicleEF	LDA	235.32	258.31
tblVehicleEF	LDA	54.50	53.65
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.17
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	8.3520e-003	6.9510e-003
tblVehicleEF	LDA	0.03	0.19

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.3560e-003	2.4590e-003
tblVehicleEF	LDA	5.6100e-004	5.1100e-004
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDA	3.7650e-003	2.1290e-003
tblVehicleEF	LDA	3.6350e-003	0.04
tblVehicleEF	LDA	0.62	0.68
tblVehicleEF	LDA	0.85	1.71
tblVehicleEF	LDA	256.22	279.26
tblVehicleEF	LDA	54.50	53.02
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.15
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.06	0.07
tblVehicleEF	LDA	9.4470e-003	7.7540e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.05	0.16

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDA	2.5670e-003	2.6590e-003
tblVehicleEF	LDA	5.5900e-004	5.0500e-004
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.06	0.07
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.05	0.18
tblVehicleEF	LDA	3.2080e-003	1.8550e-003
tblVehicleEF	LDA	4.3060e-003	0.04
tblVehicleEF	LDA	0.48	0.54
tblVehicleEF	LDA	0.98	2.02
tblVehicleEF	LDA	229.53	254.78
tblVehicleEF	LDA	54.50	53.62
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.16
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.10	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	8.0650e-003	6.8280e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.2980e-003	2.4260e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDA	5.6100e-004	5.1000e-004
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.10	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	9.9440e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDT1	9.2940e-003	5.7490e-003
tblVehicleEF	LDT1	0.01	0.07
tblVehicleEF	LDT1	1.18	1.23
tblVehicleEF	LDT1	2.73	2.29
tblVehicleEF	LDT1	295.40	306.77
tblVehicleEF	LDT1	68.37	65.39
tblVehicleEF	LDT1	0.11	0.10
tblVehicleEF	LDT1	0.17	0.26
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.18	0.16
tblVehicleEF	LDT1	0.30	0.22
tblVehicleEF	LDT1	0.12	0.11
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.18	0.73
tblVehicleEF	LDT1	0.19	0.37
tblVehicleEF	LDT1	2.9680e-003	2.9210e-003
tblVehicleEF	LDT1	7.3100e-004	6.2300e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT1	0.18	0.16
tblVehicleEF	LDT1	0.30	0.23
tblVehicleEF	LDT1	0.12	0.11
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.18	0.74
tblVehicleEF	LDT1	0.21	0.40
tblVehicleEF	LDT1	0.01	6.4140e-003
tblVehicleEF	LDT1	0.01	0.06
tblVehicleEF	LDT1	1.43	1.45
tblVehicleEF	LDT1	2.40	1.92
tblVehicleEF	LDT1	320.93	328.53
tblVehicleEF	LDT1	68.37	64.60
tblVehicleEF	LDT1	0.11	0.09
tblVehicleEF	LDT1	0.16	0.24
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.36	0.30
tblVehicleEF	LDT1	0.37	0.26
tblVehicleEF	LDT1	0.24	0.22
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.18	0.72
tblVehicleEF	LDT1	0.16	0.31
tblVehicleEF	LDT1	3.2270e-003	3.1280e-003
tblVehicleEF	LDT1	7.2500e-004	6.1500e-004
tblVehicleEF	LDT1	0.36	0.30

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT1	0.37	0.26
tblVehicleEF	LDT1	0.24	0.22
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.18	0.72
tblVehicleEF	LDT1	0.18	0.34
tblVehicleEF	LDT1	8.9360e-003	5.6560e-003
tblVehicleEF	LDT1	0.01	0.07
tblVehicleEF	LDT1	1.11	1.19
tblVehicleEF	LDT1	2.78	2.28
tblVehicleEF	LDT1	287.77	303.10
tblVehicleEF	LDT1	68.37	65.36
tblVehicleEF	LDT1	0.11	0.10
tblVehicleEF	LDT1	0.17	0.26
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.33	0.26
tblVehicleEF	LDT1	0.10	0.11
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.21	0.86
tblVehicleEF	LDT1	0.19	0.36
tblVehicleEF	LDT1	2.8910e-003	2.8860e-003
tblVehicleEF	LDT1	7.3200e-004	6.2200e-004
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.33	0.26

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT1	0.10	0.11
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.21	0.86
tblVehicleEF	LDT1	0.21	0.40
tblVehicleEF	LDT2	4.7540e-003	3.1840e-003
tblVehicleEF	LDT2	5.7630e-003	0.06
tblVehicleEF	LDT2	0.68	0.79
tblVehicleEF	LDT2	1.27	2.60
tblVehicleEF	LDT2	330.23	322.49
tblVehicleEF	LDT2	76.02	69.04
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.26
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.08	0.28
tblVehicleEF	LDT2	3.3070e-003	3.0700e-003
tblVehicleEF	LDT2	7.8100e-004	6.5700e-004
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.05	0.07

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.09	0.31
tblVehicleEF	LDT2	5.3890e-003	3.5750e-003
tblVehicleEF	LDT2	5.0030e-003	0.05
tblVehicleEF	LDT2	0.83	0.95
tblVehicleEF	LDT2	1.13	2.17
tblVehicleEF	LDT2	359.32	343.18
tblVehicleEF	LDT2	76.02	68.20
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.24
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.12	0.15
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.10	0.13
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.07	0.24
tblVehicleEF	LDT2	3.6000e-003	3.2670e-003
tblVehicleEF	LDT2	7.7900e-004	6.4900e-004
tblVehicleEF	LDT2	0.12	0.15
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.10	0.13
tblVehicleEF	LDT2	0.02	0.02

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.07	0.27
tblVehicleEF	LDT2	4.5710e-003	3.1320e-003
tblVehicleEF	LDT2	5.9350e-003	0.06
tblVehicleEF	LDT2	0.63	0.77
tblVehicleEF	LDT2	1.30	2.58
tblVehicleEF	LDT2	321.50	318.99
tblVehicleEF	LDT2	76.02	69.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.25
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.05	0.08
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.46
tblVehicleEF	LDT2	0.08	0.28
tblVehicleEF	LDT2	3.2190e-003	3.0370e-003
tblVehicleEF	LDT2	7.8200e-004	6.5700e-004
tblVehicleEF	LDT2	0.05	0.08
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.46

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LDT2	0.09	0.31
tblVehicleEF	LHD1	4.9950e-003	4.5410e-003
tblVehicleEF	LHD1	8.5970e-003	4.4200e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.81	0.60
tblVehicleEF	LHD1	2.14	0.89
tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.96
tblVehicleEF	LHD1	29.33	9.99
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.91	1.39
tblVehicleEF	LHD1	0.93	0.28
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004
tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	3.6750e-003	2.3920e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.8430e-003	1.2620e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.31	0.44

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3400e-004	9.9000e-005
tblVehicleEF	LHD1	3.6750e-003	2.3920e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.8430e-003	1.2620e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.31	0.44
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD1	4.9950e-003	4.5540e-003
tblVehicleEF	LHD1	8.7610e-003	4.4900e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.82	0.61
tblVehicleEF	LHD1	2.04	0.84
tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.98
tblVehicleEF	LHD1	29.33	9.91
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.80	1.31
tblVehicleEF	LHD1	0.90	0.27
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	6.8550e-003	4.2440e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	3.4810e-003	2.4050e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.32	0.44
tblVehicleEF	LHD1	0.22	0.06
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3200e-004	9.8000e-005
tblVehicleEF	LHD1	6.8550e-003	4.2440e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	3.4810e-003	2.4050e-003
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.32	0.44
tblVehicleEF	LHD1	0.24	0.07
tblVehicleEF	LHD1	4.9950e-003	4.5430e-003
tblVehicleEF	LHD1	8.5850e-003	4.4280e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.81	0.60
tblVehicleEF	LHD1	2.14	0.88

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.96
tblVehicleEF	LHD1	29.33	9.98
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.89	1.37
tblVehicleEF	LHD1	0.92	0.28
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004
tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	3.2380e-003	2.4970e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.6810e-003	1.3210e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.33	0.47
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3400e-004	9.9000e-005
tblVehicleEF	LHD1	3.2380e-003	2.4970e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.03

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD1	1.6810e-003	1.3210e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.33	0.47
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD2	3.3070e-003	2.7700e-003
tblVehicleEF	LHD2	3.5370e-003	3.2640e-003
tblVehicleEF	LHD2	6.6670e-003	7.1780e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.44
tblVehicleEF	LHD2	1.03	0.48
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.92
tblVehicleEF	LHD2	22.93	6.42
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.29	1.52
tblVehicleEF	LHD2	0.46	0.16
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	1.3090e-003	1.1190e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.01	0.01

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD2	7.0300e-004	6.1300e-004
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.07	0.19
tblVehicleEF	LHD2	0.09	0.04
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4800e-004	6.4000e-005
tblVehicleEF	LHD2	1.3090e-003	1.1190e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	7.0300e-004	6.1300e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.07	0.19
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	LHD2	3.3070e-003	2.7770e-003
tblVehicleEF	LHD2	3.5730e-003	3.2860e-003
tblVehicleEF	LHD2	6.4430e-003	6.9030e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.45
tblVehicleEF	LHD2	0.98	0.45
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.93
tblVehicleEF	LHD2	22.93	6.38
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.22	1.43
tblVehicleEF	LHD2	0.45	0.15
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	2.4680e-003	1.9920e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.3130e-003	1.1680e-003
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.07	0.20
tblVehicleEF	LHD2	0.09	0.03
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4700e-004	6.3000e-005
tblVehicleEF	LHD2	2.4680e-003	1.9920e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.3130e-003	1.1680e-003
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.07	0.20
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	LHD2	3.3070e-003	2.7710e-003
tblVehicleEF	LHD2	3.5300e-003	3.2670e-003
tblVehicleEF	LHD2	6.7050e-003	7.1290e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.44
tblVehicleEF	LHD2	1.03	0.47
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.92
tblVehicleEF	LHD2	22.93	6.42
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.28	1.49
tblVehicleEF	LHD2	0.46	0.16
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	1.0230e-003	1.1350e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	5.9800e-004	6.3500e-004
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.08	0.21
tblVehicleEF	LHD2	0.09	0.03
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4800e-004	6.3000e-005

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	LHD2	1.0230e-003	1.1350e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.9800e-004	6.3500e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.08	0.21
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	MCY	0.43	0.31
tblVehicleEF	MCY	0.15	0.24
tblVehicleEF	MCY	18.81	18.85
tblVehicleEF	MCY	9.70	8.64
tblVehicleEF	MCY	166.71	207.60
tblVehicleEF	MCY	45.36	60.36
tblVehicleEF	MCY	1.12	1.13
tblVehicleEF	MCY	0.31	0.26
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	1.69	1.43
tblVehicleEF	MCY	0.83	0.79
tblVehicleEF	MCY	0.92	0.76
tblVehicleEF	MCY	2.11	2.11
tblVehicleEF	MCY	0.55	1.77
tblVehicleEF	MCY	2.05	1.83
tblVehicleEF	MCY	2.0360e-003	2.0540e-003
tblVehicleEF	MCY	6.7200e-004	5.9700e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MCY	1.69	1.43
tblVehicleEF	MCY	0.83	0.79
tblVehicleEF	MCY	0.92	0.76
tblVehicleEF	MCY	2.61	2.61
tblVehicleEF	MCY	0.55	1.77
tblVehicleEF	MCY	2.23	2.00
tblVehicleEF	MCY	0.42	0.31
tblVehicleEF	MCY	0.13	0.21
tblVehicleEF	MCY	19.51	18.83
tblVehicleEF	MCY	9.10	7.90
tblVehicleEF	MCY	166.71	207.41
tblVehicleEF	MCY	45.36	58.44
tblVehicleEF	MCY	0.97	0.97
tblVehicleEF	MCY	0.29	0.25
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	3.35	2.75
tblVehicleEF	MCY	1.23	1.09
tblVehicleEF	MCY	2.09	1.72
tblVehicleEF	MCY	2.09	2.07
tblVehicleEF	MCY	0.55	1.74
tblVehicleEF	MCY	1.84	1.61
tblVehicleEF	MCY	2.0460e-003	2.0530e-003
tblVehicleEF	MCY	6.5600e-004	5.7800e-004
tblVehicleEF	MCY	3.35	2.75

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MCY	1.23	1.09
tblVehicleEF	MCY	2.09	1.72
tblVehicleEF	MCY	2.59	2.56
tblVehicleEF	MCY	0.55	1.74
tblVehicleEF	MCY	2.00	1.75
tblVehicleEF	MCY	0.42	0.31
tblVehicleEF	MCY	0.15	0.24
tblVehicleEF	MCY	18.37	18.30
tblVehicleEF	MCY	9.67	8.43
tblVehicleEF	MCY	166.71	206.64
tblVehicleEF	MCY	45.36	59.88
tblVehicleEF	MCY	1.12	1.09
tblVehicleEF	MCY	0.31	0.26
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	1.59	1.64
tblVehicleEF	MCY	1.02	1.05
tblVehicleEF	MCY	0.73	0.76
tblVehicleEF	MCY	2.11	2.09
tblVehicleEF	MCY	0.63	2.02
tblVehicleEF	MCY	2.06	1.79
tblVehicleEF	MCY	2.0290e-003	2.0450e-003
tblVehicleEF	MCY	6.7200e-004	5.9300e-004
tblVehicleEF	MCY	1.59	1.64
tblVehicleEF	MCY	1.02	1.05

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MCY	0.73	0.76
tblVehicleEF	MCY	2.61	2.59
tblVehicleEF	MCY	0.63	2.02
tblVehicleEF	MCY	2.24	1.95
tblVehicleEF	MDV	9.8990e-003	4.1640e-003
tblVehicleEF	MDV	0.01	0.08
tblVehicleEF	MDV	1.15	0.92
tblVehicleEF	MDV	2.62	3.01
tblVehicleEF	MDV	458.82	406.42
tblVehicleEF	MDV	104.21	86.29
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.25	0.33
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.11	0.10
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.11	0.46
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MDV	4.5960e-003	3.8690e-003
tblVehicleEF	MDV	1.0880e-003	8.2200e-004
tblVehicleEF	MDV	0.11	0.10
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.09	0.09

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MDV	0.04	0.02
tblVehicleEF	MDV	0.11	0.46
tblVehicleEF	MDV	0.22	0.41
tblVehicleEF	MDV	0.01	4.6800e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	1.41	1.10
tblVehicleEF	MDV	2.31	2.51
tblVehicleEF	MDV	498.05	428.48
tblVehicleEF	MDV	104.21	85.29
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.24	0.31
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.21	0.19
tblVehicleEF	MDV	0.22	0.17
tblVehicleEF	MDV	0.16	0.17
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.11	0.45
tblVehicleEF	MDV	0.17	0.32
tblVehicleEF	MDV	4.9910e-003	4.0790e-003
tblVehicleEF	MDV	1.0820e-003	8.1200e-004
tblVehicleEF	MDV	0.21	0.19
tblVehicleEF	MDV	0.22	0.17
tblVehicleEF	MDV	0.16	0.17
tblVehicleEF	MDV	0.04	0.03

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MDV	0.11	0.45
tblVehicleEF	MDV	0.19	0.35
tblVehicleEF	MDV	9.5100e-003	4.0920e-003
tblVehicleEF	MDV	0.02	0.08
tblVehicleEF	MDV	1.08	0.89
tblVehicleEF	MDV	2.68	2.99
tblVehicleEF	MDV	447.05	402.69
tblVehicleEF	MDV	104.21	86.25
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.25	0.33
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.20	0.16
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.13	0.52
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MDV	4.4770e-003	3.8330e-003
tblVehicleEF	MDV	1.0890e-003	8.2100e-004
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.20	0.16
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.13	0.53

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MDV	0.22	0.41
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	2.00	0.33
tblVehicleEF	MH	5.24	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.48	4.27
tblVehicleEF	MH	0.79	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.49	0.00
tblVehicleEF	MH	0.07	0.07
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.31	0.00
tblVehicleEF	MH	9.8680e-003	8.7850e-003
tblVehicleEF	MH	6.6300e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.49	0.00
tblVehicleEF	MH	0.10	0.08

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.34	0.00
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	2.05	0.33
tblVehicleEF	MH	4.88	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.37	4.03
tblVehicleEF	MH	0.76	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	2.52	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.94	0.00
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.30	0.00
tblVehicleEF	MH	9.8690e-003	8.7850e-003
tblVehicleEF	MH	6.5700e-004	0.00
tblVehicleEF	MH	2.52	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.94	0.00

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.32	0.00
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	1.99	0.33
tblVehicleEF	MH	5.28	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.46	4.20
tblVehicleEF	MH	0.79	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.47	0.00
tblVehicleEF	MH	0.07	0.07
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	0.31	0.00
tblVehicleEF	MH	9.8680e-003	8.7850e-003
tblVehicleEF	MH	6.6300e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.09	0.00

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MH	0.47	0.00
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	0.34	0.00
tblVehicleEF	MHD	0.02	2.7550e-003
tblVehicleEF	MHD	2.5650e-003	8.7300e-004
tblVehicleEF	MHD	0.05	7.0300e-003
tblVehicleEF	MHD	0.32	0.33
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	5.07	0.81
tblVehicleEF	MHD	148.43	67.29
tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.21
tblVehicleEF	MHD	0.41	0.40
tblVehicleEF	MHD	0.47	0.91
tblVehicleEF	MHD	11.43	1.80
tblVehicleEF	MHD	1.3500e-004	4.3400e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005
tblVehicleEF	MHD	1.2900e-004	4.1500e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	1.5020e-003	4.1800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	7.6500e-004	2.2800e-004
tblVehicleEF	MHD	0.02	9.5450e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.31	0.04
tblVehicleEF	MHD	1.4270e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3400e-004	7.1000e-005
tblVehicleEF	MHD	1.5020e-003	4.1800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	7.6500e-004	2.2800e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.34	0.04
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	2.5980e-003	8.8800e-004
tblVehicleEF	MHD	0.05	6.7570e-003
tblVehicleEF	MHD	0.23	0.29
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	4.84	0.76
tblVehicleEF	MHD	157.22	67.24
tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.14
tblVehicleEF	MHD	0.42	0.39
tblVehicleEF	MHD	0.44	0.86
tblVehicleEF	MHD	11.41	1.80
tblVehicleEF	MHD	1.1400e-004	3.6900e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MHD	1.0900e-004	3.5300e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	2.8970e-003	7.5100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	1.4710e-003	4.4600e-004
tblVehicleEF	MHD	0.02	9.6090e-003
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.30	0.04
tblVehicleEF	MHD	1.5100e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3000e-004	7.1000e-005
tblVehicleEF	MHD	2.8970e-003	7.5100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	1.4710e-003	4.4600e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.33	0.04
tblVehicleEF	MHD	0.02	2.9460e-003
tblVehicleEF	MHD	2.5410e-003	8.7400e-004
tblVehicleEF	MHD	0.05	6.9640e-003
tblVehicleEF	MHD	0.44	0.39
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	5.15	0.80
tblVehicleEF	MHD	136.28	67.35

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.20
tblVehicleEF	MHD	0.39	0.41
tblVehicleEF	MHD	0.46	0.89
tblVehicleEF	MHD	11.44	1.80
tblVehicleEF	MHD	1.6400e-004	5.2400e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005
tblVehicleEF	MHD	1.5700e-004	5.0100e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	1.0970e-003	4.3600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	5.9600e-004	2.3900e-004
tblVehicleEF	MHD	0.02	9.5510e-003
tblVehicleEF	MHD	0.02	0.08
tblVehicleEF	MHD	0.31	0.04
tblVehicleEF	MHD	1.3130e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3600e-004	7.1000e-005
tblVehicleEF	MHD	1.0970e-003	4.3600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	5.9600e-004	2.3900e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.08

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	MHD	0.34	0.04
tblVehicleEF	OBUS	0.01	8.5220e-003
tblVehicleEF	OBUS	5.6790e-003	5.4050e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.49
tblVehicleEF	OBUS	0.39	0.70
tblVehicleEF	OBUS	5.52	2.68
tblVehicleEF	OBUS	68.59	64.37
tblVehicleEF	OBUS	1,085.33	1,335.49
tblVehicleEF	OBUS	69.49	21.28
tblVehicleEF	OBUS	0.13	0.23
tblVehicleEF	OBUS	0.35	0.91
tblVehicleEF	OBUS	2.07	0.69
tblVehicleEF	OBUS	1.2000e-005	7.5000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.1000e-005	7.2000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004
tblVehicleEF	OBUS	2.0910e-003	2.6670e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	9.0600e-004	1.1770e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.34	0.13
tblVehicleEF	OBUS	6.6700e-004	6.1500e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.9200e-004	2.1100e-004
tblVehicleEF	OBUS	2.0910e-003	2.6670e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	9.0600e-004	1.1770e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.38	0.14
tblVehicleEF	OBUS	0.01	8.5920e-003
tblVehicleEF	OBUS	5.7930e-003	5.5390e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.48
tblVehicleEF	OBUS	0.40	0.72
tblVehicleEF	OBUS	5.16	2.49
tblVehicleEF	OBUS	71.65	63.70
tblVehicleEF	OBUS	1,085.33	1,335.52
tblVehicleEF	OBUS	69.49	20.96
tblVehicleEF	OBUS	0.14	0.21
tblVehicleEF	OBUS	0.33	0.84
tblVehicleEF	OBUS	2.03	0.67
tblVehicleEF	OBUS	1.0000e-005	6.7000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.0000e-005	6.4000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	OBUS	3.8840e-003	4.6970e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	1.7290e-003	2.2650e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.33	0.12
tblVehicleEF	OBUS	6.9600e-004	6.0900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.8600e-004	2.0700e-004
tblVehicleEF	OBUS	3.8840e-003	4.6970e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	1.7290e-003	2.2650e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.36	0.13
tblVehicleEF	OBUS	0.01	8.4630e-003
tblVehicleEF	OBUS	5.6610e-003	5.4160e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.49
tblVehicleEF	OBUS	0.39	0.70
tblVehicleEF	OBUS	5.57	2.67
tblVehicleEF	OBUS	64.36	65.29
tblVehicleEF	OBUS	1,085.33	1,335.50
tblVehicleEF	OBUS	69.49	21.26
tblVehicleEF	OBUS	0.13	0.24

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	OBUS	0.35	0.89
tblVehicleEF	OBUS	2.06	0.68
tblVehicleEF	OBUS	1.5000e-005	8.7000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.4000e-005	8.3000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004
tblVehicleEF	OBUS	1.7990e-003	2.7830e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	8.3400e-004	1.2510e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.31
tblVehicleEF	OBUS	0.35	0.13
tblVehicleEF	OBUS	6.2600e-004	6.2400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.9300e-004	2.1000e-004
tblVehicleEF	OBUS	1.7990e-003	2.7830e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	8.3400e-004	1.2510e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.31
tblVehicleEF	OBUS	0.38	0.14
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.5650e-003	6.6030e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	SBUS	0.06	8.0990e-003
tblVehicleEF	SBUS	7.84	3.43
tblVehicleEF	SBUS	0.57	0.55
tblVehicleEF	SBUS	6.44	1.08
tblVehicleEF	SBUS	1,128.57	369.74
tblVehicleEF	SBUS	1,093.03	1,096.55
tblVehicleEF	SBUS	55.12	6.92
tblVehicleEF	SBUS	8.81	3.32
tblVehicleEF	SBUS	3.97	4.42
tblVehicleEF	SBUS	12.20	0.78
tblVehicleEF	SBUS	8.4250e-003	3.3040e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	8.0610e-003	3.1610e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	5.0680e-003	1.5760e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.93	0.41
tblVehicleEF	SBUS	2.4310e-003	7.9200e-004
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.07
tblVehicleEF	SBUS	0.36	0.05
tblVehicleEF	SBUS	0.01	3.5360e-003
tblVehicleEF	SBUS	0.01	0.01

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	SBUS	6.6300e-004	6.9000e-005
tblVehicleEF	SBUS	5.0680e-003	1.5760e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	2.4310e-003	7.9200e-004
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.07
tblVehicleEF	SBUS	0.39	0.05
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.7050e-003	6.6870e-003
tblVehicleEF	SBUS	0.05	6.7520e-003
tblVehicleEF	SBUS	7.74	3.39
tblVehicleEF	SBUS	0.58	0.56
tblVehicleEF	SBUS	4.67	0.77
tblVehicleEF	SBUS	1,179.47	378.98
tblVehicleEF	SBUS	1,093.03	1,096.56
tblVehicleEF	SBUS	55.12	6.42
tblVehicleEF	SBUS	9.10	3.40
tblVehicleEF	SBUS	3.73	4.16
tblVehicleEF	SBUS	12.17	0.77
tblVehicleEF	SBUS	7.1020e-003	2.7930e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	6.7950e-003	2.6720e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	9.1290e-003	2.7600e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	0.92	0.41
tblVehicleEF	SBUS	4.4980e-003	1.4670e-003
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.06
tblVehicleEF	SBUS	0.30	0.04
tblVehicleEF	SBUS	0.01	3.6240e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.3300e-004	6.3000e-005
tblVehicleEF	SBUS	9.1290e-003	2.7600e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	4.4980e-003	1.4670e-003
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.06
tblVehicleEF	SBUS	0.33	0.04
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.5210e-003	6.6020e-003
tblVehicleEF	SBUS	0.06	8.2440e-003
tblVehicleEF	SBUS	8.00	3.48
tblVehicleEF	SBUS	0.57	0.55
tblVehicleEF	SBUS	6.79	1.10
tblVehicleEF	SBUS	1,058.28	356.98
tblVehicleEF	SBUS	1,093.03	1,096.55
tblVehicleEF	SBUS	55.12	6.96

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	SBUS	8.43	3.21
tblVehicleEF	SBUS	3.93	4.35
tblVehicleEF	SBUS	12.21	0.78
tblVehicleEF	SBUS	0.01	4.0110e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	9.8080e-003	3.8370e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	4.3640e-003	1.4840e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.93	0.41
tblVehicleEF	SBUS	2.3310e-003	8.1800e-004
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.08
tblVehicleEF	SBUS	0.37	0.05
tblVehicleEF	SBUS	0.01	3.4160e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.6900e-004	6.9000e-005
tblVehicleEF	SBUS	4.3640e-003	1.4840e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	2.3310e-003	8.1800e-004
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.08

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	SBUS	0.40	0.05
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	7.52	23.60
tblVehicleEF	UBUS	13.83	1.86
tblVehicleEF	UBUS	1,788.21	1,635.62
tblVehicleEF	UBUS	153.17	22.96
tblVehicleEF	UBUS	3.79	0.30
tblVehicleEF	UBUS	12.24	0.22
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	9.0420e-003	2.8050e-003
tblVehicleEF	UBUS	0.10	0.02
tblVehicleEF	UBUS	4.5390e-003	1.1470e-003
tblVehicleEF	UBUS	0.42	0.05
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.09	0.10
tblVehicleEF	UBUS	9.5090e-003	6.3200e-003
tblVehicleEF	UBUS	1.7820e-003	2.2700e-004
tblVehicleEF	UBUS	9.0420e-003	2.8050e-003
tblVehicleEF	UBUS	0.10	0.02

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	UBUS	4.5390e-003	1.1470e-003
tblVehicleEF	UBUS	1.82	3.11
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.19	0.10
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.07	0.02
tblVehicleEF	UBUS	7.58	23.60
tblVehicleEF	UBUS	11.85	1.58
tblVehicleEF	UBUS	1,788.21	1,635.63
tblVehicleEF	UBUS	153.17	22.49
tblVehicleEF	UBUS	3.53	0.30
tblVehicleEF	UBUS	12.16	0.21
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	0.02	4.9810e-003
tblVehicleEF	UBUS	0.13	0.02
tblVehicleEF	UBUS	9.0520e-003	2.2660e-003
tblVehicleEF	UBUS	0.43	0.05
tblVehicleEF	UBUS	0.02	0.07
tblVehicleEF	UBUS	0.99	0.09
tblVehicleEF	UBUS	9.5110e-003	6.3200e-003

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	UBUS	1.7480e-003	2.2300e-004
tblVehicleEF	UBUS	0.02	4.9810e-003
tblVehicleEF	UBUS	0.13	0.02
tblVehicleEF	UBUS	9.0520e-003	2.2660e-003
tblVehicleEF	UBUS	1.83	3.11
tblVehicleEF	UBUS	0.02	0.07
tblVehicleEF	UBUS	1.09	0.09
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	7.51	23.60
tblVehicleEF	UBUS	14.02	1.85
tblVehicleEF	UBUS	1,788.21	1,635.62
tblVehicleEF	UBUS	153.17	22.93
tblVehicleEF	UBUS	3.75	0.30
tblVehicleEF	UBUS	12.25	0.22
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	8.1990e-003	2.8430e-003
tblVehicleEF	UBUS	0.12	0.02
tblVehicleEF	UBUS	4.1400e-003	1.2010e-003
tblVehicleEF	UBUS	0.42	0.05

12585 Crestview Apartments - Riverside-South Coast County, Summer

tblVehicleEF	UBUS	0.03	0.09
tblVehicleEF	UBUS	1.10	0.09
tblVehicleEF	UBUS	9.5090e-003	6.3200e-003
tblVehicleEF	UBUS	1.7850e-003	2.2700e-004
tblVehicleEF	UBUS	8.1990e-003	2.8430e-003
tblVehicleEF	UBUS	0.12	0.02
tblVehicleEF	UBUS	4.1400e-003	1.2010e-003
tblVehicleEF	UBUS	1.82	3.11
tblVehicleEF	UBUS	0.03	0.09
tblVehicleEF	UBUS	1.20	0.10
tblVehicleTrips	HW_TL	14.70	11.50
tblVehicleTrips	HW_TL	14.70	11.50
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	ST_TR	6.39	4.91
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	SU_TR	5.86	4.09
tblVehicleTrips	WD_TR	6.59	7.33
tblVehicleTrips	WD_TR	6.65	5.44
tblWoodstoves	NumberCatalytic	3.75	0.00
tblWoodstoves	NumberCatalytic	8.10	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00
tblWoodstoves	NumberNoncatalytic	8.10	0.00

2.0 Emissions Summary

12585 Crestview Apartments - Riverside-South Coast County, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.4281	83.8963	25.5837	0.2037	21.9792	2.6472	24.6264	10.3848	2.4354	12.8202	0.0000	21,210.48 84	21,210.48 84	2.2895	0.0000	21,267.72 67
2022	3.6886	32.9223	24.4886	0.0701	2.2775	1.2908	3.5684	0.6085	1.2046	1.8131	0.0000	6,858.473 9	6,858.473 9	1.2151	0.0000	6,888.850 4
2023	37.7319	28.6473	23.6203	0.0691	2.2775	1.1305	3.4081	0.6085	1.0549	1.6634	0.0000	6,761.331 7	6,761.331 7	1.1922	0.0000	6,791.137 7
Maximum	37.7319	83.8963	25.5837	0.2037	21.9792	2.6472	24.6264	10.3848	2.4354	12.8202	0.0000	21,210.48 84	21,210.48 84	2.2895	0.0000	21,267.72 67

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.4281	83.8963	25.5837	0.2037	8.6946	2.6472	11.3418	4.0826	2.4354	6.5180	0.0000	21,210.48 84	21,210.48 84	2.2895	0.0000	21,267.72 67
2022	3.6886	32.9223	24.4886	0.0701	2.2775	1.2908	3.5684	0.6085	1.2046	1.8131	0.0000	6,858.473 9	6,858.473 9	1.2151	0.0000	6,888.850 4
2023	37.7319	28.6473	23.6203	0.0691	2.2775	1.1305	3.4081	0.6085	1.0549	1.6634	0.0000	6,761.331 7	6,761.331 7	1.1922	0.0000	6,791.137 6
Maximum	37.7319	83.8963	25.5837	0.2037	8.6946	2.6472	11.3418	4.0826	2.4354	6.5180	0.0000	21,210.48 84	21,210.48 84	2.2895	0.0000	21,267.72 67

12585 Crestview Apartments - Riverside-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	50.07	0.00	42.04	54.32	0.00	38.67	0.00	0.00	0.00	0.00	0.00	0.00

12585 Crestview Apartments - Riverside-South Coast County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010
Energy	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
Mobile	3.3401	8.5105	30.8450	0.1069	9.5389	0.0994	9.6383	2.5497	0.0937	2.6435		11,311.1430	11,311.1430	0.4060		11,321.2929
Total	9.5796	13.2820	52.3802	0.1370	9.5389	0.5753	10.1142	2.5497	0.5697	3.1194	0.0000	17,149.4255	17,149.4255	0.5513	0.1064	17,194.9122

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010
Energy	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
Mobile	3.3401	8.5105	30.8450	0.1069	9.5389	0.0994	9.6383	2.5497	0.0937	2.6435		11,311.1430	11,311.1430	0.4060		11,321.2929
Total	9.5796	13.2820	52.3802	0.1370	9.5389	0.5753	10.1142	2.5497	0.5697	3.1194	0.0000	17,149.4255	17,149.4255	0.5513	0.1064	17,194.9122

12585 Crestview Apartments - Riverside-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Crushing	Demolition	10/16/2021	11/12/2021	5	20	
2	Site Preparation	Site Preparation	10/4/2021	10/15/2021	5	10	
3	Grading	Grading	11/13/2021	12/10/2021	5	20	
4	Building Construction	Building Construction	12/11/2021	2/3/2023	5	300	
5	Paving	Paving	2/4/2023	3/3/2023	5	20	
6	Architectural Coating	Architectural Coating	3/4/2023	4/28/2023	5	40	

Acres of Grading (Site Preparation Phase): 35**Acres of Grading (Grading Phase): 50****Acres of Paving: 0.82****Residential Indoor: 479,925; Residential Outdoor: 159,975; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,143 (Architectural Coating – sqft)****OffRoad Equipment**

12585 Crestview Apartments - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	3	8.00	212	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Crawler Tractors	3	8.00	212	0.43
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48
Crushing	Concrete/Industrial Saws	0	8.00	81	0.73
Crushing	Excavators	0	8.00	158	0.38
Crushing	Rubber Tired Dozers	0	8.00	247	0.40
Crushing	Generator Sets	1	8.00	1050	0.74

Trips and VMT

12585 Crestview Apartments - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	3,750.00	14.70	6.90	23.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	186.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	37.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Crushing	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Crushing - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593		7,787.9458	7,787.9458	0.2604		7,794.4552
Total	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593		7,787.9458	7,787.9458	0.2604		7,794.4552

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.2 Crushing - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0142	8.1000e-003	0.1109	3.2000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		31.9425	31.9425	7.6000e-004		31.9616
Total	0.0142	8.1000e-003	0.1109	3.2000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		31.9425	31.9425	7.6000e-004		31.9616

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593	0.0000	7,787.9458	7,787.9458	0.2604		7,794.4552
Total	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593	0.0000	7,787.9458	7,787.9458	0.2604		7,794.4552

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.2 Crushing - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0142	8.1000e-003	0.1109	3.2000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		31.9425	31.9425	7.6000e-004		31.9616
Total	0.0142	8.1000e-003	0.1109	3.2000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		31.9425	31.9425	7.6000e-004		31.9616

3.3 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					21.7780	0.0000	21.7780	10.3315	0.0000	10.3315			0.0000			0.0000
Off-Road	5.3428	60.7861	21.8537	0.0570		2.6460	2.6460		2.4343	2.4343		5,523.5047	5,523.5047	1.7864		5,568.1651
Total	5.3428	60.7861	21.8537	0.0570	21.7780	2.6460	24.4240	10.3315	2.4343	12.7658		5,523.5047	5,523.5047	1.7864		5,568.1651

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.3 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694
Total	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4934	0.0000	8.4934	4.0293	0.0000	4.0293			0.0000			0.0000
Off-Road	5.3428	60.7861	21.8537	0.0570		2.6460	2.6460		2.4343	2.4343	0.0000	5,523.5047	5,523.5047	1.7864		5,568.1651
Total	5.3428	60.7861	21.8537	0.0570	8.4934	2.6460	11.1394	4.0293	2.4343	6.4636	0.0000	5,523.5047	5,523.5047	1.7864		5,568.1651

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.3 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694
Total	0.0853	0.0486	0.6655	1.9200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		191.6552	191.6552	4.5700e-003		191.7694

3.4 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8633	0.0000	8.8633	3.6253	0.0000	3.6253			0.0000			0.0000
Off-Road	3.3813	39.9534	16.3820	0.0439		1.6111	1.6111		1.4822	1.4822		4,250.314 4	4,250.314 4	1.3746		4,284.680 3
Total	3.3813	39.9534	16.3820	0.0439	8.8633	1.6111	10.4744	3.6253	1.4822	5.1074		4,250.314 4	4,250.314 4	1.3746		4,284.680 3

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.4 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9967	43.9024	5.9258	0.1583	3.7712	0.1418	3.9130	1.0337	0.1357	1.1694		16,800.46 14	16,800.46 14	0.9111		16,823.23 85
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	1.0678	43.9429	6.4804	0.1599	3.9388	0.1428	4.0817	1.0782	0.1366	1.2148		16,960.17 40	16,960.17 40	0.9149		16,983.04 64

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4567	0.0000	3.4567	1.4139	0.0000	1.4139			0.0000			0.0000
Off-Road	3.3813	39.9534	16.3820	0.0439		1.6111	1.6111		1.4822	1.4822	0.0000	4,250.314 4	4,250.314 4	1.3746		4,284.680 3
Total	3.3813	39.9534	16.3820	0.0439	3.4567	1.6111	5.0677	1.4139	1.4822	2.8960	0.0000	4,250.314 4	4,250.314 4	1.3746		4,284.680 3

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9967	43.9024	5.9258	0.1583	3.7712	0.1418	3.9130	1.0337	0.1357	1.1694		16,800.46 14	16,800.46 14	0.9111		16,823.23 85
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	1.0678	43.9429	6.4804	0.1599	3.9388	0.1428	4.0817	1.0782	0.1366	1.2148		16,960.17 40	16,960.17 40	0.9149		16,983.04 64

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775		4,114.4297	4,114.4297	1.1209		4,142.452 0
Total	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775		4,114.429 7	4,114.429 7	1.1209		4,142.452 0

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0724	2.8687	0.5118	8.0300e-003	0.1985	5.4600e-003	0.2040	0.0572	5.2200e-003	0.0624		847.0782	847.0782	0.0606		848.5932
Worker	0.8818	0.5024	6.8766	0.0199	2.0790	0.0123	2.0913	0.5514	0.0113	0.5627		1,980.4367	1,980.4367	0.0472		1,981.6172
Total	0.9542	3.3711	7.3885	0.0279	2.2775	0.0177	2.2953	0.6085	0.0165	0.6250		2,827.5149	2,827.5149	0.1078		2,830.2104

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775	0.0000	4,114.4297	4,114.4297	1.1209		4,142.4520
Total	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775	0.0000	4,114.4297	4,114.4297	1.1209		4,142.4520

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0724	2.8687	0.5118	8.0300e-003	0.1985	5.4600e-003	0.2040	0.0572	5.2200e-003	0.0624		847.0782	847.0782	0.0606		848.5932
Worker	0.8818	0.5024	6.8766	0.0199	2.0790	0.0123	2.0913	0.5514	0.0113	0.5627		1,980.4367	1,980.4367	0.0472		1,981.6172
Total	0.9542	3.3711	7.3885	0.0279	2.2775	0.0177	2.2953	0.6085	0.0165	0.6250		2,827.5149	2,827.5149	0.1078		2,830.2104

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892		4,110.5322	4,110.5322	1.1153		4,138.4135
Total	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892		4,110.5322	4,110.5322	1.1153		4,138.4135

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0675	2.7066	0.4761	7.9600e-003	0.1985	4.5900e-003	0.2031	0.0572	4.3900e-003	0.0615		839.8681	839.8681	0.0574		841.3029
Worker	0.8248	0.4521	6.3428	0.0192	2.0790	0.0119	2.0910	0.5514	0.0110	0.5624		1,908.0736	1,908.0736	0.0424		1,909.1341
Total	0.8923	3.1586	6.8189	0.0271	2.2775	0.0165	2.2941	0.6085	0.0154	0.6239		2,747.9417	2,747.9417	0.0998		2,750.4369

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892	0.0000	4,110.5322	4,110.5322	1.1153		4,138.4135
Total	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892	0.0000	4,110.5322	4,110.5322	1.1153		4,138.4135

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0675	2.7066	0.4761	7.9600e-003	0.1985	4.5900e-003	0.2031	0.0572	4.3900e-003	0.0615		839.8681	839.8681	0.0574		841.3029
Worker	0.8248	0.4521	6.3428	0.0192	2.0790	0.0119	2.0910	0.5514	0.0110	0.5624		1,908.0736	1,908.0736	0.0424		1,909.1341
Total	0.8923	3.1586	6.8189	0.0271	2.2775	0.0165	2.2941	0.6085	0.0154	0.6239		2,747.9417	2,747.9417	0.0998		2,750.4369

3.5 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422		4,108.2392	4,108.2392	1.1101		4,135.9924
Total	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422		4,108.2392	4,108.2392	1.1101		4,135.9924

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0518	2.0352	0.4196	7.7500e-003	0.1985	2.0500e-003	0.2005	0.0572	1.9600e-003	0.0591		817.5306	817.5306	0.0440		818.6316
Worker	0.7734	0.4077	5.8536	0.0184	2.0790	0.0117	2.0907	0.5514	0.0107	0.5621		1,835.5619	1,835.5619	0.0381		1,836.5137
Total	0.8251	2.4429	6.2732	0.0262	2.2775	0.0137	2.2912	0.6085	0.0127	0.6212		2,653.0924	2,653.0924	0.0821		2,655.1453

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422	0.0000	4,108.2392	4,108.2392	1.1101		4,135.9924
Total	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422	0.0000	4,108.2392	4,108.2392	1.1101		4,135.9924

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.5 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0518	2.0352	0.4196	7.7500e-003	0.1985	2.0500e-003	0.2005	0.0572	1.9600e-003	0.0591		817.5306	817.5306	0.0440		818.6316
Worker	0.7734	0.4077	5.8536	0.0184	2.0790	0.0117	2.0907	0.5514	0.0107	0.5621		1,835.5619	1,835.5619	0.0381		1,836.5137
Total	0.8251	2.4429	6.2732	0.0262	2.2775	0.0137	2.2912	0.6085	0.0127	0.6212		2,653.0924	2,653.0924	0.0821		2,655.1453

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1402	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.6 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0329	0.4721	1.4900e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		148.0292	148.0292	3.0700e-003		148.1059
Total	0.0624	0.0329	0.4721	1.4900e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		148.0292	148.0292	3.0700e-003		148.1059

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1402	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.6 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0329	0.4721	1.4900e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		148.0292	148.0292	3.0700e-003		148.1059
Total	0.0624	0.0329	0.4721	1.4900e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		148.0292	148.0292	3.0700e-003		148.1059

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.3225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
Total	37.5781	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.7 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1538	0.0811	1.1644	3.6600e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		365.1387	365.1387	7.5700e-003		365.3280
Total	0.1538	0.0811	1.1644	3.6600e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		365.1387	365.1387	7.5700e-003		365.3280

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.3225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
Total	37.5781	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253

12585 Crestview Apartments - Riverside-South Coast County, Summer

3.7 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1538	0.0811	1.1644	3.6600e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		365.1387	365.1387	7.5700e-003		365.3280
Total	0.1538	0.0811	1.1644	3.6600e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		365.1387	365.1387	7.5700e-003		365.3280

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

12585 Crestview Apartments - Riverside-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3401	8.5105	30.8450	0.1069	9.5389	0.0994	9.6383	2.5497	0.0937	2.6435		11,311.1430	11,311.1430	0.4060		11,321.2929
Unmitigated	3.3401	8.5105	30.8450	0.1069	9.5389	0.0994	9.6383	2.5497	0.0937	2.6435		11,311.1430	11,311.1430	0.4060		11,321.2929

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	549.98	610.50	471.00	1,642,883	1,642,883
Apartments Mid Rise	881.93	795.42	662.58	2,516,028	2,516,028
Parking Lot	0.00	0.00	0.00		
Total	1,431.90	1,405.92	1,133.58	4,158,910	4,158,910

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	11.50	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	11.50	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

12585 Crestview Apartments - Riverside-South Coast County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Apartments Mid Rise	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Parking Lot	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
NaturalGas Unmitigated	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

12585 Crestview Apartments - Riverside-South Coast County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2160.81	0.0233	0.1991	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.2124	254.2124	4.8700e-003	4.6600e-003	255.7231
Apartments Mid Rise	4504.54	0.0486	0.4151	0.1767	2.6500e-003		0.0336	0.0336		0.0336	0.0336		529.9460	529.9460	0.0102	9.7200e-003	533.0952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2.16081	0.0233	0.1991	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.2124	254.2124	4.8700e-003	4.6600e-003	255.7231
Apartments Mid Rise	4.50454	0.0486	0.4151	0.1767	2.6500e-003		0.0336	0.0336		0.0336	0.0336		529.9460	529.9460	0.0102	9.7200e-003	533.0952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

6.0 Area Detail

12585 Crestview Apartments - Riverside-South Coast County, Summer

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.124 1	5,054.124 1	0.1303	0.0920	5,084.801 0
Unmitigated	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.124 1	5,054.124 1	0.1303	0.0920	5,084.801 0

12585 Crestview Apartments - Riverside-South Coast County, Summer

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.5932	0.2258	19.6009	1.0400e-003		0.1084	0.1084		0.1084	0.1084		35.3006	35.3006	0.0341		36.1531
Total	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010

12585 Crestview Apartments - Riverside-South Coast County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.5932	0.2258	19.6009	1.0400e-003		0.1084	0.1084		0.1084	0.1084		35.3006	35.3006	0.0341		36.1531
Total	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

12585 Crestview Apartments - Riverside-South Coast County, Summer

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

12585 Crestview Apartments - Riverside-South Coast County, Winter

12585 Crestview Apartments

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	428.00	Space	0.82	35,719.00	0
Apartment Low Rise	75.00	Dwelling Unit	4.69	75,000.00	239
Apartment Mid Rise	162.00	Dwelling Unit	4.26	162,000.00	515

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2023
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

12585 Crestview Apartments - Riverside-South Coast County, Winter

Project Characteristics -

Land Use - Per parcel number and TIA analysis

Construction Phase - Per 18 month site plan provided by Project Applicant

Off-road Equipment - 8 hour workday

Off-road Equipment - Per standard procedure

Off-road Equipment - Per standard procedure

Off-road Equipment -

Off-road Equipment - Per standard procedure

Trips and VMT - Weighted Trip Length of 23 miles

Grading - Per equipment grading capabilities

Architectural Coating - Rule 1103

Vehicle Trips - 10th Generation ITE

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors - EMFAC2017

Woodstoves - Rule 445

Energy Use - Title 24 2019

Construction Off-road Equipment Mitigation - Rule 403

Off-road Equipment - Based on information provided by the Project Applicant, there will be 1 crushers on-site

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	LightingElect	810.36	380.87
tblEnergyUse	LightingElect	741.44	348.48
tblEnergyUse	T24E	877.14	412.26
tblEnergyUse	T24E	772.17	362.92

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblEnergyUse	T24NG	9,544.50	4,485.92
tblEnergyUse	T24NG	8,764.08	4,119.12
tblFireplaces	NumberGas	63.75	75.00
tblFireplaces	NumberGas	137.70	162.00
tblFireplaces	NumberNoFireplace	7.50	0.00
tblFireplaces	NumberNoFireplace	16.20	0.00
tblFireplaces	NumberWood	3.75	0.00
tblFireplaces	NumberWood	8.10	0.00
tblGrading	AcresOfGrading	40.00	50.00
tblGrading	AcresOfGrading	20.00	35.00
tblGrading	MaterialExported	0.00	10,000.00
tblGrading	MaterialImported	0.00	20,000.00
tblLandUse	LandUseSquareFeet	171,200.00	35,719.00
tblLandUse	LotAcreage	3.85	0.82
tblLandUse	Population	215.00	239.00
tblLandUse	Population	463.00	515.00
tblOffRoadEquipment	HorsePower	84.00	1,050.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblTripsAndVMT	HaulingTripLength	20.00	23.00
tblVehicleEF	HHD	0.96	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	2.07	6.43
tblVehicleEF	HHD	0.41	0.24
tblVehicleEF	HHD	1.44	4.3850e-003
tblVehicleEF	HHD	6,147.84	1,065.92
tblVehicleEF	HHD	1,399.88	1,272.83
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	17.43	5.31
tblVehicleEF	HHD	0.97	1.96
tblVehicleEF	HHD	20.29	2.50
tblVehicleEF	HHD	5.1890e-003	2.3650e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	4.9650e-003	2.2630e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.8060e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	7.3000e-005	3.0000e-006
tblVehicleEF	HHD	2.3430e-003	9.7000e-005
tblVehicleEF	HHD	0.55	0.44
tblVehicleEF	HHD	4.3000e-005	2.0000e-006

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.5400e-004	4.4400e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.06	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.1000e-005	0.00
tblVehicleEF	HHD	7.3000e-005	3.0000e-006
tblVehicleEF	HHD	2.3430e-003	9.7000e-005
tblVehicleEF	HHD	0.63	0.50
tblVehicleEF	HHD	4.3000e-005	2.0000e-006
tblVehicleEF	HHD	0.08	0.05
tblVehicleEF	HHD	1.5400e-004	4.4400e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.91	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	1.50	6.35
tblVehicleEF	HHD	0.41	0.24
tblVehicleEF	HHD	1.38	4.1390e-003
tblVehicleEF	HHD	6,513.09	1,052.83
tblVehicleEF	HHD	1,399.88	1,272.83
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	17.99	5.06
tblVehicleEF	HHD	0.91	1.85
tblVehicleEF	HHD	20.28	2.50
tblVehicleEF	HHD	4.3760e-003	2.0780e-003
tblVehicleEF	HHD	0.06	0.06

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	4.1860e-003	1.9880e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.8060e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	1.4000e-004	5.0000e-006
tblVehicleEF	HHD	2.6540e-003	1.0600e-004
tblVehicleEF	HHD	0.51	0.46
tblVehicleEF	HHD	8.2000e-005	3.0000e-006
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.5700e-004	4.4900e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.06	9.8850e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.0000e-005	0.00
tblVehicleEF	HHD	1.4000e-004	5.0000e-006
tblVehicleEF	HHD	2.6540e-003	1.0600e-004
tblVehicleEF	HHD	0.59	0.53
tblVehicleEF	HHD	8.2000e-005	3.0000e-006
tblVehicleEF	HHD	0.08	0.05
tblVehicleEF	HHD	1.5700e-004	4.4900e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	1.04	0.02
tblVehicleEF	HHD	0.03	8.2000e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	HHD	0.08	0.00
tblVehicleEF	HHD	2.85	6.51
tblVehicleEF	HHD	0.41	0.15
tblVehicleEF	HHD	1.46	4.3390e-003
tblVehicleEF	HHD	5,643.45	1,077.40
tblVehicleEF	HHD	1,399.88	1,253.68
tblVehicleEF	HHD	4.72	0.04
tblVehicleEF	HHD	16.66	5.62
tblVehicleEF	HHD	0.96	1.92
tblVehicleEF	HHD	20.29	2.50
tblVehicleEF	HHD	6.3140e-003	2.7000e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.1440e-003	0.02
tblVehicleEF	HHD	3.9000e-005	0.00
tblVehicleEF	HHD	6.0400e-003	2.5830e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8620e-003	8.7520e-003
tblVehicleEF	HHD	4.9210e-003	0.02
tblVehicleEF	HHD	3.6000e-005	0.00
tblVehicleEF	HHD	5.5000e-005	3.0000e-006
tblVehicleEF	HHD	2.4340e-003	1.0800e-004
tblVehicleEF	HHD	0.59	0.40
tblVehicleEF	HHD	3.6000e-005	2.0000e-006
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	1.6500e-004	4.7200e-004
tblVehicleEF	HHD	0.04	1.0000e-006

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	HHD	0.05	0.01
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	7.1000e-005	0.00
tblVehicleEF	HHD	5.5000e-005	3.0000e-006
tblVehicleEF	HHD	2.4340e-003	1.0800e-004
tblVehicleEF	HHD	0.68	0.46
tblVehicleEF	HHD	3.6000e-005	2.0000e-006
tblVehicleEF	HHD	0.08	0.02
tblVehicleEF	HHD	1.6500e-004	4.7200e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	LDA	3.3240e-003	1.8870e-003
tblVehicleEF	LDA	4.1920e-003	0.04
tblVehicleEF	LDA	0.51	0.56
tblVehicleEF	LDA	0.96	2.04
tblVehicleEF	LDA	235.32	258.31
tblVehicleEF	LDA	54.50	53.65
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.17
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	8.3520e-003	6.9510e-003
tblVehicleEF	LDA	0.03	0.19

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.3560e-003	2.4590e-003
tblVehicleEF	LDA	5.6100e-004	5.1100e-004
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDA	3.7650e-003	2.1290e-003
tblVehicleEF	LDA	3.6350e-003	0.04
tblVehicleEF	LDA	0.62	0.68
tblVehicleEF	LDA	0.85	1.71
tblVehicleEF	LDA	256.22	279.26
tblVehicleEF	LDA	54.50	53.02
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.15
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.06	0.07
tblVehicleEF	LDA	9.4470e-003	7.7540e-003
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.05	0.16

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDA	2.5670e-003	2.6590e-003
tblVehicleEF	LDA	5.5900e-004	5.0500e-004
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.06	0.07
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.19
tblVehicleEF	LDA	0.05	0.18
tblVehicleEF	LDA	3.2080e-003	1.8550e-003
tblVehicleEF	LDA	4.3060e-003	0.04
tblVehicleEF	LDA	0.48	0.54
tblVehicleEF	LDA	0.98	2.02
tblVehicleEF	LDA	229.53	254.78
tblVehicleEF	LDA	54.50	53.62
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.16
tblVehicleEF	LDA	1.5540e-003	1.3120e-003
tblVehicleEF	LDA	2.2370e-003	1.7690e-003
tblVehicleEF	LDA	1.4310e-003	1.2090e-003
tblVehicleEF	LDA	2.0570e-003	1.6270e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.10	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	8.0650e-003	6.8280e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.2980e-003	2.4260e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDA	5.6100e-004	5.1000e-004
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.10	0.09
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	9.9440e-003
tblVehicleEF	LDA	0.04	0.22
tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDT1	9.2940e-003	5.7490e-003
tblVehicleEF	LDT1	0.01	0.07
tblVehicleEF	LDT1	1.18	1.23
tblVehicleEF	LDT1	2.73	2.29
tblVehicleEF	LDT1	295.40	306.77
tblVehicleEF	LDT1	68.37	65.39
tblVehicleEF	LDT1	0.11	0.10
tblVehicleEF	LDT1	0.17	0.26
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.18	0.16
tblVehicleEF	LDT1	0.30	0.22
tblVehicleEF	LDT1	0.12	0.11
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.18	0.73
tblVehicleEF	LDT1	0.19	0.37
tblVehicleEF	LDT1	2.9680e-003	2.9210e-003
tblVehicleEF	LDT1	7.3100e-004	6.2300e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT1	0.18	0.16
tblVehicleEF	LDT1	0.30	0.23
tblVehicleEF	LDT1	0.12	0.11
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.18	0.74
tblVehicleEF	LDT1	0.21	0.40
tblVehicleEF	LDT1	0.01	6.4140e-003
tblVehicleEF	LDT1	0.01	0.06
tblVehicleEF	LDT1	1.43	1.45
tblVehicleEF	LDT1	2.40	1.92
tblVehicleEF	LDT1	320.93	328.53
tblVehicleEF	LDT1	68.37	64.60
tblVehicleEF	LDT1	0.11	0.09
tblVehicleEF	LDT1	0.16	0.24
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.36	0.30
tblVehicleEF	LDT1	0.37	0.26
tblVehicleEF	LDT1	0.24	0.22
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.18	0.72
tblVehicleEF	LDT1	0.16	0.31
tblVehicleEF	LDT1	3.2270e-003	3.1280e-003
tblVehicleEF	LDT1	7.2500e-004	6.1500e-004
tblVehicleEF	LDT1	0.36	0.30

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT1	0.37	0.26
tblVehicleEF	LDT1	0.24	0.22
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.18	0.72
tblVehicleEF	LDT1	0.18	0.34
tblVehicleEF	LDT1	8.9360e-003	5.6560e-003
tblVehicleEF	LDT1	0.01	0.07
tblVehicleEF	LDT1	1.11	1.19
tblVehicleEF	LDT1	2.78	2.28
tblVehicleEF	LDT1	287.77	303.10
tblVehicleEF	LDT1	68.37	65.36
tblVehicleEF	LDT1	0.11	0.10
tblVehicleEF	LDT1	0.17	0.26
tblVehicleEF	LDT1	2.2770e-003	1.9040e-003
tblVehicleEF	LDT1	3.3510e-003	2.5710e-003
tblVehicleEF	LDT1	2.0960e-003	1.7520e-003
tblVehicleEF	LDT1	3.0820e-003	2.3640e-003
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.33	0.26
tblVehicleEF	LDT1	0.10	0.11
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.21	0.86
tblVehicleEF	LDT1	0.19	0.36
tblVehicleEF	LDT1	2.8910e-003	2.8860e-003
tblVehicleEF	LDT1	7.3200e-004	6.2200e-004
tblVehicleEF	LDT1	0.16	0.16
tblVehicleEF	LDT1	0.33	0.26

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT1	0.10	0.11
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.21	0.86
tblVehicleEF	LDT1	0.21	0.40
tblVehicleEF	LDT2	4.7540e-003	3.1840e-003
tblVehicleEF	LDT2	5.7630e-003	0.06
tblVehicleEF	LDT2	0.68	0.79
tblVehicleEF	LDT2	1.27	2.60
tblVehicleEF	LDT2	330.23	322.49
tblVehicleEF	LDT2	76.02	69.04
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.26
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.08	0.28
tblVehicleEF	LDT2	3.3070e-003	3.0700e-003
tblVehicleEF	LDT2	7.8100e-004	6.5700e-004
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.05	0.07

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.09	0.31
tblVehicleEF	LDT2	5.3890e-003	3.5750e-003
tblVehicleEF	LDT2	5.0030e-003	0.05
tblVehicleEF	LDT2	0.83	0.95
tblVehicleEF	LDT2	1.13	2.17
tblVehicleEF	LDT2	359.32	343.18
tblVehicleEF	LDT2	76.02	68.20
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.24
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.12	0.15
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.10	0.13
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.07	0.24
tblVehicleEF	LDT2	3.6000e-003	3.2670e-003
tblVehicleEF	LDT2	7.7900e-004	6.4900e-004
tblVehicleEF	LDT2	0.12	0.15
tblVehicleEF	LDT2	0.12	0.14
tblVehicleEF	LDT2	0.10	0.13
tblVehicleEF	LDT2	0.02	0.02

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT2	0.06	0.39
tblVehicleEF	LDT2	0.07	0.27
tblVehicleEF	LDT2	4.5710e-003	3.1320e-003
tblVehicleEF	LDT2	5.9350e-003	0.06
tblVehicleEF	LDT2	0.63	0.77
tblVehicleEF	LDT2	1.30	2.58
tblVehicleEF	LDT2	321.50	318.99
tblVehicleEF	LDT2	76.02	69.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.10	0.25
tblVehicleEF	LDT2	1.6020e-003	1.3550e-003
tblVehicleEF	LDT2	2.3660e-003	1.8060e-003
tblVehicleEF	LDT2	1.4730e-003	1.2480e-003
tblVehicleEF	LDT2	2.1760e-003	1.6600e-003
tblVehicleEF	LDT2	0.05	0.08
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.46
tblVehicleEF	LDT2	0.08	0.28
tblVehicleEF	LDT2	3.2190e-003	3.0370e-003
tblVehicleEF	LDT2	7.8200e-004	6.5700e-004
tblVehicleEF	LDT2	0.05	0.08
tblVehicleEF	LDT2	0.11	0.13
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.46

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LDT2	0.09	0.31
tblVehicleEF	LHD1	4.9950e-003	4.5410e-003
tblVehicleEF	LHD1	8.5970e-003	4.4200e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.81	0.60
tblVehicleEF	LHD1	2.14	0.89
tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.96
tblVehicleEF	LHD1	29.33	9.99
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.91	1.39
tblVehicleEF	LHD1	0.93	0.28
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004
tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	3.6750e-003	2.3920e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.8430e-003	1.2620e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.31	0.44

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3400e-004	9.9000e-005
tblVehicleEF	LHD1	3.6750e-003	2.3920e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.8430e-003	1.2620e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.31	0.44
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD1	4.9950e-003	4.5540e-003
tblVehicleEF	LHD1	8.7610e-003	4.4900e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.82	0.61
tblVehicleEF	LHD1	2.04	0.84
tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.98
tblVehicleEF	LHD1	29.33	9.91
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.80	1.31
tblVehicleEF	LHD1	0.90	0.27
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	6.8550e-003	4.2440e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	3.4810e-003	2.4050e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.32	0.44
tblVehicleEF	LHD1	0.22	0.06
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3200e-004	9.8000e-005
tblVehicleEF	LHD1	6.8550e-003	4.2440e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	3.4810e-003	2.4050e-003
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.32	0.44
tblVehicleEF	LHD1	0.24	0.07
tblVehicleEF	LHD1	4.9950e-003	4.5430e-003
tblVehicleEF	LHD1	8.5850e-003	4.4280e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.17
tblVehicleEF	LHD1	0.81	0.60
tblVehicleEF	LHD1	2.14	0.88

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD1	9.25	9.36
tblVehicleEF	LHD1	596.36	619.96
tblVehicleEF	LHD1	29.33	9.98
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.89	1.37
tblVehicleEF	LHD1	0.92	0.28
tblVehicleEF	LHD1	9.6600e-004	1.0130e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	7.9000e-004	2.1100e-004
tblVehicleEF	LHD1	9.2400e-004	9.6900e-004
tblVehicleEF	LHD1	2.5590e-003	2.5170e-003
tblVehicleEF	LHD1	0.01	9.8330e-003
tblVehicleEF	LHD1	7.2700e-004	1.9400e-004
tblVehicleEF	LHD1	3.2380e-003	2.4970e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.6810e-003	1.3210e-003
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.33	0.47
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	5.8420e-003	6.0260e-003
tblVehicleEF	LHD1	3.3400e-004	9.9000e-005
tblVehicleEF	LHD1	3.2380e-003	2.4970e-003
tblVehicleEF	LHD1	0.11	0.08
tblVehicleEF	LHD1	0.02	0.03

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD1	1.6810e-003	1.3210e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.33	0.47
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD2	3.3070e-003	2.7700e-003
tblVehicleEF	LHD2	3.5370e-003	3.2640e-003
tblVehicleEF	LHD2	6.6670e-003	7.1780e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.44
tblVehicleEF	LHD2	1.03	0.48
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.92
tblVehicleEF	LHD2	22.93	6.42
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.29	1.52
tblVehicleEF	LHD2	0.46	0.16
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	1.3090e-003	1.1190e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.01	0.01

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD2	7.0300e-004	6.1300e-004
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.07	0.19
tblVehicleEF	LHD2	0.09	0.04
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4800e-004	6.4000e-005
tblVehicleEF	LHD2	1.3090e-003	1.1190e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	7.0300e-004	6.1300e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.07	0.19
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	LHD2	3.3070e-003	2.7770e-003
tblVehicleEF	LHD2	3.5730e-003	3.2860e-003
tblVehicleEF	LHD2	6.4430e-003	6.9030e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.45
tblVehicleEF	LHD2	0.98	0.45
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.93
tblVehicleEF	LHD2	22.93	6.38
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.22	1.43
tblVehicleEF	LHD2	0.45	0.15
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	2.4680e-003	1.9920e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.3130e-003	1.1680e-003
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.07	0.20
tblVehicleEF	LHD2	0.09	0.03
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4700e-004	6.3000e-005
tblVehicleEF	LHD2	2.4680e-003	1.9920e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.3130e-003	1.1680e-003
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.07	0.20
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	LHD2	3.3070e-003	2.7710e-003
tblVehicleEF	LHD2	3.5300e-003	3.2670e-003
tblVehicleEF	LHD2	6.7050e-003	7.1290e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.40	0.44
tblVehicleEF	LHD2	1.03	0.47
tblVehicleEF	LHD2	14.34	14.92
tblVehicleEF	LHD2	592.89	614.92
tblVehicleEF	LHD2	22.93	6.42
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	1.28	1.49
tblVehicleEF	LHD2	0.46	0.16
tblVehicleEF	LHD2	1.2850e-003	1.5130e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5700e-004	9.8000e-005
tblVehicleEF	LHD2	1.2290e-003	1.4470e-003
tblVehicleEF	LHD2	2.7020e-003	2.7370e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.2800e-004	9.1000e-005
tblVehicleEF	LHD2	1.0230e-003	1.1350e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	5.9800e-004	6.3500e-004
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.08	0.21
tblVehicleEF	LHD2	0.09	0.03
tblVehicleEF	LHD2	1.4000e-004	1.4200e-004
tblVehicleEF	LHD2	5.7620e-003	5.9160e-003
tblVehicleEF	LHD2	2.4800e-004	6.3000e-005

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	LHD2	1.0230e-003	1.1350e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.9800e-004	6.3500e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.08	0.21
tblVehicleEF	LHD2	0.10	0.04
tblVehicleEF	MCY	0.43	0.31
tblVehicleEF	MCY	0.15	0.24
tblVehicleEF	MCY	18.81	18.85
tblVehicleEF	MCY	9.70	8.64
tblVehicleEF	MCY	166.71	207.60
tblVehicleEF	MCY	45.36	60.36
tblVehicleEF	MCY	1.12	1.13
tblVehicleEF	MCY	0.31	0.26
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	1.69	1.43
tblVehicleEF	MCY	0.83	0.79
tblVehicleEF	MCY	0.92	0.76
tblVehicleEF	MCY	2.11	2.11
tblVehicleEF	MCY	0.55	1.77
tblVehicleEF	MCY	2.05	1.83
tblVehicleEF	MCY	2.0360e-003	2.0540e-003
tblVehicleEF	MCY	6.7200e-004	5.9700e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MCY	1.69	1.43
tblVehicleEF	MCY	0.83	0.79
tblVehicleEF	MCY	0.92	0.76
tblVehicleEF	MCY	2.61	2.61
tblVehicleEF	MCY	0.55	1.77
tblVehicleEF	MCY	2.23	2.00
tblVehicleEF	MCY	0.42	0.31
tblVehicleEF	MCY	0.13	0.21
tblVehicleEF	MCY	19.51	18.83
tblVehicleEF	MCY	9.10	7.90
tblVehicleEF	MCY	166.71	207.41
tblVehicleEF	MCY	45.36	58.44
tblVehicleEF	MCY	0.97	0.97
tblVehicleEF	MCY	0.29	0.25
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	3.35	2.75
tblVehicleEF	MCY	1.23	1.09
tblVehicleEF	MCY	2.09	1.72
tblVehicleEF	MCY	2.09	2.07
tblVehicleEF	MCY	0.55	1.74
tblVehicleEF	MCY	1.84	1.61
tblVehicleEF	MCY	2.0460e-003	2.0530e-003
tblVehicleEF	MCY	6.5600e-004	5.7800e-004
tblVehicleEF	MCY	3.35	2.75

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MCY	1.23	1.09
tblVehicleEF	MCY	2.09	1.72
tblVehicleEF	MCY	2.59	2.56
tblVehicleEF	MCY	0.55	1.74
tblVehicleEF	MCY	2.00	1.75
tblVehicleEF	MCY	0.42	0.31
tblVehicleEF	MCY	0.15	0.24
tblVehicleEF	MCY	18.37	18.30
tblVehicleEF	MCY	9.67	8.43
tblVehicleEF	MCY	166.71	206.64
tblVehicleEF	MCY	45.36	59.88
tblVehicleEF	MCY	1.12	1.09
tblVehicleEF	MCY	0.31	0.26
tblVehicleEF	MCY	1.8630e-003	1.7970e-003
tblVehicleEF	MCY	3.2830e-003	2.7750e-003
tblVehicleEF	MCY	1.7410e-003	1.6800e-003
tblVehicleEF	MCY	3.0870e-003	2.6090e-003
tblVehicleEF	MCY	1.59	1.64
tblVehicleEF	MCY	1.02	1.05
tblVehicleEF	MCY	0.73	0.76
tblVehicleEF	MCY	2.11	2.09
tblVehicleEF	MCY	0.63	2.02
tblVehicleEF	MCY	2.06	1.79
tblVehicleEF	MCY	2.0290e-003	2.0450e-003
tblVehicleEF	MCY	6.7200e-004	5.9300e-004
tblVehicleEF	MCY	1.59	1.64
tblVehicleEF	MCY	1.02	1.05

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MCY	0.73	0.76
tblVehicleEF	MCY	2.61	2.59
tblVehicleEF	MCY	0.63	2.02
tblVehicleEF	MCY	2.24	1.95
tblVehicleEF	MDV	9.8990e-003	4.1640e-003
tblVehicleEF	MDV	0.01	0.08
tblVehicleEF	MDV	1.15	0.92
tblVehicleEF	MDV	2.62	3.01
tblVehicleEF	MDV	458.82	406.42
tblVehicleEF	MDV	104.21	86.29
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.25	0.33
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.11	0.10
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.11	0.46
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MDV	4.5960e-003	3.8690e-003
tblVehicleEF	MDV	1.0880e-003	8.2200e-004
tblVehicleEF	MDV	0.11	0.10
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.09	0.09

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MDV	0.04	0.02
tblVehicleEF	MDV	0.11	0.46
tblVehicleEF	MDV	0.22	0.41
tblVehicleEF	MDV	0.01	4.6800e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	1.41	1.10
tblVehicleEF	MDV	2.31	2.51
tblVehicleEF	MDV	498.05	428.48
tblVehicleEF	MDV	104.21	85.29
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.24	0.31
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.21	0.19
tblVehicleEF	MDV	0.22	0.17
tblVehicleEF	MDV	0.16	0.17
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.11	0.45
tblVehicleEF	MDV	0.17	0.32
tblVehicleEF	MDV	4.9910e-003	4.0790e-003
tblVehicleEF	MDV	1.0820e-003	8.1200e-004
tblVehicleEF	MDV	0.21	0.19
tblVehicleEF	MDV	0.22	0.17
tblVehicleEF	MDV	0.16	0.17
tblVehicleEF	MDV	0.04	0.03

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MDV	0.11	0.45
tblVehicleEF	MDV	0.19	0.35
tblVehicleEF	MDV	9.5100e-003	4.0920e-003
tblVehicleEF	MDV	0.02	0.08
tblVehicleEF	MDV	1.08	0.89
tblVehicleEF	MDV	2.68	2.99
tblVehicleEF	MDV	447.05	402.69
tblVehicleEF	MDV	104.21	86.25
tblVehicleEF	MDV	0.13	0.08
tblVehicleEF	MDV	0.25	0.33
tblVehicleEF	MDV	1.6580e-003	1.4180e-003
tblVehicleEF	MDV	2.3780e-003	1.8620e-003
tblVehicleEF	MDV	1.5280e-003	1.3080e-003
tblVehicleEF	MDV	2.1870e-003	1.7120e-003
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.20	0.16
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.13	0.52
tblVehicleEF	MDV	0.20	0.38
tblVehicleEF	MDV	4.4770e-003	3.8330e-003
tblVehicleEF	MDV	1.0890e-003	8.2100e-004
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.20	0.16
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.13	0.53

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MDV	0.22	0.41
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	2.00	0.33
tblVehicleEF	MH	5.24	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.48	4.27
tblVehicleEF	MH	0.79	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.49	0.00
tblVehicleEF	MH	0.07	0.07
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.31	0.00
tblVehicleEF	MH	9.8680e-003	8.7850e-003
tblVehicleEF	MH	6.6300e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.49	0.00
tblVehicleEF	MH	0.10	0.08

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.34	0.00
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	2.05	0.33
tblVehicleEF	MH	4.88	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.37	4.03
tblVehicleEF	MH	0.76	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	2.52	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.94	0.00
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.30	0.00
tblVehicleEF	MH	9.8690e-003	8.7850e-003
tblVehicleEF	MH	6.5700e-004	0.00
tblVehicleEF	MH	2.52	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.94	0.00

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	0.32	0.00
tblVehicleEF	MH	0.02	3.2740e-003
tblVehicleEF	MH	0.02	0.00
tblVehicleEF	MH	1.99	0.33
tblVehicleEF	MH	5.28	0.00
tblVehicleEF	MH	995.46	929.33
tblVehicleEF	MH	57.13	0.00
tblVehicleEF	MH	1.46	4.20
tblVehicleEF	MH	0.79	0.00
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.04	0.14
tblVehicleEF	MH	9.7800e-004	0.00
tblVehicleEF	MH	3.2460e-003	4.0000e-003
tblVehicleEF	MH	0.04	0.13
tblVehicleEF	MH	8.9900e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.09	0.00
tblVehicleEF	MH	0.47	0.00
tblVehicleEF	MH	0.07	0.07
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	0.31	0.00
tblVehicleEF	MH	9.8680e-003	8.7850e-003
tblVehicleEF	MH	6.6300e-004	0.00
tblVehicleEF	MH	1.38	0.00
tblVehicleEF	MH	0.09	0.00

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MH	0.47	0.00
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.03	0.00
tblVehicleEF	MH	0.34	0.00
tblVehicleEF	MHD	0.02	2.7550e-003
tblVehicleEF	MHD	2.5650e-003	8.7300e-004
tblVehicleEF	MHD	0.05	7.0300e-003
tblVehicleEF	MHD	0.32	0.33
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	5.07	0.81
tblVehicleEF	MHD	148.43	67.29
tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.21
tblVehicleEF	MHD	0.41	0.40
tblVehicleEF	MHD	0.47	0.91
tblVehicleEF	MHD	11.43	1.80
tblVehicleEF	MHD	1.3500e-004	4.3400e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005
tblVehicleEF	MHD	1.2900e-004	4.1500e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	1.5020e-003	4.1800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	7.6500e-004	2.2800e-004
tblVehicleEF	MHD	0.02	9.5450e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.31	0.04
tblVehicleEF	MHD	1.4270e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3400e-004	7.1000e-005
tblVehicleEF	MHD	1.5020e-003	4.1800e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	7.6500e-004	2.2800e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.34	0.04
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	2.5980e-003	8.8800e-004
tblVehicleEF	MHD	0.05	6.7570e-003
tblVehicleEF	MHD	0.23	0.29
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	4.84	0.76
tblVehicleEF	MHD	157.22	67.24
tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.14
tblVehicleEF	MHD	0.42	0.39
tblVehicleEF	MHD	0.44	0.86
tblVehicleEF	MHD	11.41	1.80
tblVehicleEF	MHD	1.1400e-004	3.6900e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MHD	1.0900e-004	3.5300e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	2.8970e-003	7.5100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	1.4710e-003	4.4600e-004
tblVehicleEF	MHD	0.02	9.6090e-003
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.30	0.04
tblVehicleEF	MHD	1.5100e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3000e-004	7.1000e-005
tblVehicleEF	MHD	2.8970e-003	7.5100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	1.4710e-003	4.4600e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.33	0.04
tblVehicleEF	MHD	0.02	2.9460e-003
tblVehicleEF	MHD	2.5410e-003	8.7400e-004
tblVehicleEF	MHD	0.05	6.9640e-003
tblVehicleEF	MHD	0.44	0.39
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	5.15	0.80
tblVehicleEF	MHD	136.28	67.35

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MHD	1,056.49	911.02
tblVehicleEF	MHD	54.56	7.20
tblVehicleEF	MHD	0.39	0.41
tblVehicleEF	MHD	0.46	0.89
tblVehicleEF	MHD	11.44	1.80
tblVehicleEF	MHD	1.6400e-004	5.2400e-004
tblVehicleEF	MHD	2.6660e-003	9.4670e-003
tblVehicleEF	MHD	7.3000e-004	8.3000e-005
tblVehicleEF	MHD	1.5700e-004	5.0100e-004
tblVehicleEF	MHD	2.5470e-003	9.0550e-003
tblVehicleEF	MHD	6.7100e-004	7.6000e-005
tblVehicleEF	MHD	1.0970e-003	4.3600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	5.9600e-004	2.3900e-004
tblVehicleEF	MHD	0.02	9.5510e-003
tblVehicleEF	MHD	0.02	0.08
tblVehicleEF	MHD	0.31	0.04
tblVehicleEF	MHD	1.3130e-003	6.3800e-004
tblVehicleEF	MHD	0.01	8.6560e-003
tblVehicleEF	MHD	6.3600e-004	7.1000e-005
tblVehicleEF	MHD	1.0970e-003	4.3600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	5.9600e-004	2.3900e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.08

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	MHD	0.34	0.04
tblVehicleEF	OBUS	0.01	8.5220e-003
tblVehicleEF	OBUS	5.6790e-003	5.4050e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.49
tblVehicleEF	OBUS	0.39	0.70
tblVehicleEF	OBUS	5.52	2.68
tblVehicleEF	OBUS	68.59	64.37
tblVehicleEF	OBUS	1,085.33	1,335.49
tblVehicleEF	OBUS	69.49	21.28
tblVehicleEF	OBUS	0.13	0.23
tblVehicleEF	OBUS	0.35	0.91
tblVehicleEF	OBUS	2.07	0.69
tblVehicleEF	OBUS	1.2000e-005	7.5000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.1000e-005	7.2000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004
tblVehicleEF	OBUS	2.0910e-003	2.6670e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	9.0600e-004	1.1770e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.34	0.13
tblVehicleEF	OBUS	6.6700e-004	6.1500e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.9200e-004	2.1100e-004
tblVehicleEF	OBUS	2.0910e-003	2.6670e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	9.0600e-004	1.1770e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.38	0.14
tblVehicleEF	OBUS	0.01	8.5920e-003
tblVehicleEF	OBUS	5.7930e-003	5.5390e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.48
tblVehicleEF	OBUS	0.40	0.72
tblVehicleEF	OBUS	5.16	2.49
tblVehicleEF	OBUS	71.65	63.70
tblVehicleEF	OBUS	1,085.33	1,335.52
tblVehicleEF	OBUS	69.49	20.96
tblVehicleEF	OBUS	0.14	0.21
tblVehicleEF	OBUS	0.33	0.84
tblVehicleEF	OBUS	2.03	0.67
tblVehicleEF	OBUS	1.0000e-005	6.7000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.0000e-005	6.4000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	OBUS	3.8840e-003	4.6970e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	1.7290e-003	2.2650e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.33	0.12
tblVehicleEF	OBUS	6.9600e-004	6.0900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.8600e-004	2.0700e-004
tblVehicleEF	OBUS	3.8840e-003	4.6970e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	1.7290e-003	2.2650e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.29
tblVehicleEF	OBUS	0.36	0.13
tblVehicleEF	OBUS	0.01	8.4630e-003
tblVehicleEF	OBUS	5.6610e-003	5.4160e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.49
tblVehicleEF	OBUS	0.39	0.70
tblVehicleEF	OBUS	5.57	2.67
tblVehicleEF	OBUS	64.36	65.29
tblVehicleEF	OBUS	1,085.33	1,335.50
tblVehicleEF	OBUS	69.49	21.26
tblVehicleEF	OBUS	0.13	0.24

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	OBUS	0.35	0.89
tblVehicleEF	OBUS	2.06	0.68
tblVehicleEF	OBUS	1.5000e-005	8.7000e-005
tblVehicleEF	OBUS	1.9500e-003	8.4680e-003
tblVehicleEF	OBUS	8.7100e-004	2.1800e-004
tblVehicleEF	OBUS	1.4000e-005	8.3000e-005
tblVehicleEF	OBUS	1.8490e-003	8.0880e-003
tblVehicleEF	OBUS	8.0000e-004	2.0100e-004
tblVehicleEF	OBUS	1.7990e-003	2.7830e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	8.3400e-004	1.2510e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.31
tblVehicleEF	OBUS	0.35	0.13
tblVehicleEF	OBUS	6.2600e-004	6.2400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.9300e-004	2.1000e-004
tblVehicleEF	OBUS	1.7990e-003	2.7830e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	8.3400e-004	1.2510e-003
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.05	0.31
tblVehicleEF	OBUS	0.38	0.14
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.5650e-003	6.6030e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	SBUS	0.06	8.0990e-003
tblVehicleEF	SBUS	7.84	3.43
tblVehicleEF	SBUS	0.57	0.55
tblVehicleEF	SBUS	6.44	1.08
tblVehicleEF	SBUS	1,128.57	369.74
tblVehicleEF	SBUS	1,093.03	1,096.55
tblVehicleEF	SBUS	55.12	6.92
tblVehicleEF	SBUS	8.81	3.32
tblVehicleEF	SBUS	3.97	4.42
tblVehicleEF	SBUS	12.20	0.78
tblVehicleEF	SBUS	8.4250e-003	3.3040e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	8.0610e-003	3.1610e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	5.0680e-003	1.5760e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.93	0.41
tblVehicleEF	SBUS	2.4310e-003	7.9200e-004
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.07
tblVehicleEF	SBUS	0.36	0.05
tblVehicleEF	SBUS	0.01	3.5360e-003
tblVehicleEF	SBUS	0.01	0.01

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	SBUS	6.6300e-004	6.9000e-005
tblVehicleEF	SBUS	5.0680e-003	1.5760e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	2.4310e-003	7.9200e-004
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.07
tblVehicleEF	SBUS	0.39	0.05
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.7050e-003	6.6870e-003
tblVehicleEF	SBUS	0.05	6.7520e-003
tblVehicleEF	SBUS	7.74	3.39
tblVehicleEF	SBUS	0.58	0.56
tblVehicleEF	SBUS	4.67	0.77
tblVehicleEF	SBUS	1,179.47	378.98
tblVehicleEF	SBUS	1,093.03	1,096.56
tblVehicleEF	SBUS	55.12	6.42
tblVehicleEF	SBUS	9.10	3.40
tblVehicleEF	SBUS	3.73	4.16
tblVehicleEF	SBUS	12.17	0.77
tblVehicleEF	SBUS	7.1020e-003	2.7930e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	6.7950e-003	2.6720e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	9.1290e-003	2.7600e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	0.92	0.41
tblVehicleEF	SBUS	4.4980e-003	1.4670e-003
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.06
tblVehicleEF	SBUS	0.30	0.04
tblVehicleEF	SBUS	0.01	3.6240e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.3300e-004	6.3000e-005
tblVehicleEF	SBUS	9.1290e-003	2.7600e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	4.4980e-003	1.4670e-003
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.06
tblVehicleEF	SBUS	0.33	0.04
tblVehicleEF	SBUS	0.82	0.09
tblVehicleEF	SBUS	9.5210e-003	6.6020e-003
tblVehicleEF	SBUS	0.06	8.2440e-003
tblVehicleEF	SBUS	8.00	3.48
tblVehicleEF	SBUS	0.57	0.55
tblVehicleEF	SBUS	6.79	1.10
tblVehicleEF	SBUS	1,058.28	356.98
tblVehicleEF	SBUS	1,093.03	1,096.55
tblVehicleEF	SBUS	55.12	6.96

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	SBUS	8.43	3.21
tblVehicleEF	SBUS	3.93	4.35
tblVehicleEF	SBUS	12.21	0.78
tblVehicleEF	SBUS	0.01	4.0110e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	5.0000e-004	4.8000e-005
tblVehicleEF	SBUS	9.8080e-003	3.8370e-003
tblVehicleEF	SBUS	2.6870e-003	2.6500e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	4.6000e-004	4.4000e-005
tblVehicleEF	SBUS	4.3640e-003	1.4840e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.93	0.41
tblVehicleEF	SBUS	2.3310e-003	8.1800e-004
tblVehicleEF	SBUS	0.10	0.09
tblVehicleEF	SBUS	0.02	0.08
tblVehicleEF	SBUS	0.37	0.05
tblVehicleEF	SBUS	0.01	3.4160e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.6900e-004	6.9000e-005
tblVehicleEF	SBUS	4.3640e-003	1.4840e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.34	0.59
tblVehicleEF	SBUS	2.3310e-003	8.1800e-004
tblVehicleEF	SBUS	0.12	0.11
tblVehicleEF	SBUS	0.02	0.08

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	SBUS	0.40	0.05
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	7.52	23.60
tblVehicleEF	UBUS	13.83	1.86
tblVehicleEF	UBUS	1,788.21	1,635.62
tblVehicleEF	UBUS	153.17	22.96
tblVehicleEF	UBUS	3.79	0.30
tblVehicleEF	UBUS	12.24	0.22
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	9.0420e-003	2.8050e-003
tblVehicleEF	UBUS	0.10	0.02
tblVehicleEF	UBUS	4.5390e-003	1.1470e-003
tblVehicleEF	UBUS	0.42	0.05
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.09	0.10
tblVehicleEF	UBUS	9.5090e-003	6.3200e-003
tblVehicleEF	UBUS	1.7820e-003	2.2700e-004
tblVehicleEF	UBUS	9.0420e-003	2.8050e-003
tblVehicleEF	UBUS	0.10	0.02

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	UBUS	4.5390e-003	1.1470e-003
tblVehicleEF	UBUS	1.82	3.11
tblVehicleEF	UBUS	0.02	0.08
tblVehicleEF	UBUS	1.19	0.10
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.07	0.02
tblVehicleEF	UBUS	7.58	23.60
tblVehicleEF	UBUS	11.85	1.58
tblVehicleEF	UBUS	1,788.21	1,635.63
tblVehicleEF	UBUS	153.17	22.49
tblVehicleEF	UBUS	3.53	0.30
tblVehicleEF	UBUS	12.16	0.21
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	0.02	4.9810e-003
tblVehicleEF	UBUS	0.13	0.02
tblVehicleEF	UBUS	9.0520e-003	2.2660e-003
tblVehicleEF	UBUS	0.43	0.05
tblVehicleEF	UBUS	0.02	0.07
tblVehicleEF	UBUS	0.99	0.09
tblVehicleEF	UBUS	9.5110e-003	6.3200e-003

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	UBUS	1.7480e-003	2.2300e-004
tblVehicleEF	UBUS	0.02	4.9810e-003
tblVehicleEF	UBUS	0.13	0.02
tblVehicleEF	UBUS	9.0520e-003	2.2660e-003
tblVehicleEF	UBUS	1.83	3.11
tblVehicleEF	UBUS	0.02	0.07
tblVehicleEF	UBUS	1.09	0.09
tblVehicleEF	UBUS	1.36	3.04
tblVehicleEF	UBUS	0.08	0.02
tblVehicleEF	UBUS	7.51	23.60
tblVehicleEF	UBUS	14.02	1.85
tblVehicleEF	UBUS	1,788.21	1,635.62
tblVehicleEF	UBUS	153.17	22.93
tblVehicleEF	UBUS	3.75	0.30
tblVehicleEF	UBUS	12.25	0.22
tblVehicleEF	UBUS	0.49	0.09
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.04	2.1820e-003
tblVehicleEF	UBUS	1.4880e-003	2.2400e-004
tblVehicleEF	UBUS	0.21	0.04
tblVehicleEF	UBUS	3.0000e-003	5.0570e-003
tblVehicleEF	UBUS	0.04	2.0670e-003
tblVehicleEF	UBUS	1.3680e-003	2.0600e-004
tblVehicleEF	UBUS	8.1990e-003	2.8430e-003
tblVehicleEF	UBUS	0.12	0.02
tblVehicleEF	UBUS	4.1400e-003	1.2010e-003
tblVehicleEF	UBUS	0.42	0.05

12585 Crestview Apartments - Riverside-South Coast County, Winter

tblVehicleEF	UBUS	0.03	0.09
tblVehicleEF	UBUS	1.10	0.09
tblVehicleEF	UBUS	9.5090e-003	6.3200e-003
tblVehicleEF	UBUS	1.7850e-003	2.2700e-004
tblVehicleEF	UBUS	8.1990e-003	2.8430e-003
tblVehicleEF	UBUS	0.12	0.02
tblVehicleEF	UBUS	4.1400e-003	1.2010e-003
tblVehicleEF	UBUS	1.82	3.11
tblVehicleEF	UBUS	0.03	0.09
tblVehicleEF	UBUS	1.20	0.10
tblVehicleTrips	HW_TL	14.70	11.50
tblVehicleTrips	HW_TL	14.70	11.50
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	ST_TR	6.39	4.91
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	SU_TR	5.86	4.09
tblVehicleTrips	WD_TR	6.59	7.33
tblVehicleTrips	WD_TR	6.65	5.44
tblWoodstoves	NumberCatalytic	3.75	0.00
tblWoodstoves	NumberCatalytic	8.10	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00
tblWoodstoves	NumberNoncatalytic	8.10	0.00

2.0 Emissions Summary

12585 Crestview Apartments - Riverside-South Coast County, Winter

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.4265	84.3384	24.3514	0.2000	21.9792	2.6472	24.6264	10.3848	2.4354	12.8202	0.0000	20,817.49 81	20,817.49 81	2.3709	0.0000	20,876.76 95
2022	3.6799	32.9105	23.3471	0.0678	2.2775	1.2910	3.5685	0.6085	1.2047	1.8133	0.0000	6,630.461 7	6,630.461 7	1.2162	0.0000	6,660.866 3
2023	37.7300	28.6332	22.5427	0.0670	2.2775	1.1306	3.4081	0.6085	1.0549	1.6634	0.0000	6,542.203 8	6,542.203 8	1.1921	0.0000	6,572.007 0
Maximum	37.7300	84.3384	24.3514	0.2000	21.9792	2.6472	24.6264	10.3848	2.4354	12.8202	0.0000	20,817.49 81	20,817.49 81	2.3709	0.0000	20,876.76 95

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.4265	84.3384	24.3514	0.2000	8.6946	2.6472	11.3418	4.0826	2.4354	6.5180	0.0000	20,817.49 81	20,817.49 81	2.3709	0.0000	20,876.76 95
2022	3.6799	32.9105	23.3471	0.0678	2.2775	1.2910	3.5685	0.6085	1.2047	1.8133	0.0000	6,630.461 6	6,630.461 6	1.2162	0.0000	6,660.866 3
2023	37.7300	28.6332	22.5427	0.0670	2.2775	1.1306	3.4081	0.6085	1.0549	1.6634	0.0000	6,542.203 8	6,542.203 8	1.1921	0.0000	6,572.007 0
Maximum	37.7300	84.3384	24.3514	0.2000	8.6946	2.6472	11.3418	4.0826	2.4354	6.5180	0.0000	20,817.49 81	20,817.49 81	2.3709	0.0000	20,876.76 95

12585 Crestview Apartments - Riverside-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	50.07	0.00	42.04	54.32	0.00	38.67	0.00	0.00	0.00	0.00	0.00	0.00

12585 Crestview Apartments - Riverside-South Coast County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010
Energy	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
Mobile	3.1887	8.9416	27.9170	0.1014	9.5378	0.0995	9.6373	2.5493	0.0938	2.6432		10,691.5034	10,691.5034	0.3660		10,700.6542
Total	9.4281	13.7131	49.4522	0.1314	9.5378	0.5754	10.1132	2.5493	0.5698	3.1191	0.0000	16,529.7859	16,529.7859	0.5114	0.1064	16,574.2735

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010
Energy	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
Mobile	3.1887	8.9416	27.9170	0.1014	9.5378	0.0995	9.6373	2.5493	0.0938	2.6432		10,691.5034	10,691.5034	0.3660		10,700.6542
Total	9.4281	13.7131	49.4522	0.1314	9.5378	0.5754	10.1132	2.5493	0.5698	3.1191	0.0000	16,529.7859	16,529.7859	0.5114	0.1064	16,574.2735

12585 Crestview Apartments - Riverside-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Crushing	Demolition	10/16/2021	11/12/2021	5	20	
2	Site Preparation	Site Preparation	10/4/2021	10/15/2021	5	10	
3	Grading	Grading	11/13/2021	12/10/2021	5	20	
4	Building Construction	Building Construction	12/11/2021	2/3/2023	5	300	
5	Paving	Paving	2/4/2023	3/3/2023	5	20	
6	Architectural Coating	Architectural Coating	3/4/2023	4/28/2023	5	40	

Acres of Grading (Site Preparation Phase): 35**Acres of Grading (Grading Phase): 50****Acres of Paving: 0.82****Residential Indoor: 479,925; Residential Outdoor: 159,975; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,143 (Architectural Coating – sqft)****OffRoad Equipment**

12585 Crestview Apartments - Riverside-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	3	8.00	212	0.43
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Crawler Tractors	3	8.00	212	0.43
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48
Crushing	Concrete/Industrial Saws	0	8.00	81	0.73
Crushing	Excavators	0	8.00	158	0.38
Crushing	Rubber Tired Dozers	0	8.00	247	0.40
Crushing	Generator Sets	1	8.00	1050	0.74

Trips and VMT

12585 Crestview Apartments - Riverside-South Coast County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	3,750.00	14.70	6.90	23.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	186.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	37.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Crushing	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Crushing - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593		7,787.9458	7,787.9458	0.2604		7,794.4552
Total	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593		7,787.9458	7,787.9458	0.2604		7,794.4552

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.2 Crushing - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0140	8.3800e-003	0.0895	2.9000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		28.6558	28.6558	6.6000e-004		28.6724
Total	0.0140	8.3800e-003	0.0895	2.9000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		28.6558	28.6558	6.6000e-004		28.6724

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593	0.0000	7,787.9458	7,787.9458	0.2604		7,794.4552
Total	3.0149	46.2097	14.5262	0.0685		0.9593	0.9593		0.9593	0.9593	0.0000	7,787.9458	7,787.9458	0.2604		7,794.4552

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.2 Crushing - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0140	8.3800e-003	0.0895	2.9000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		28.6558	28.6558	6.6000e-004		28.6724
Total	0.0140	8.3800e-003	0.0895	2.9000e-004	0.0335	2.0000e-004	0.0337	8.8900e-003	1.8000e-004	9.0800e-003		28.6558	28.6558	6.6000e-004		28.6724

3.3 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					21.7780	0.0000	21.7780	10.3315	0.0000	10.3315			0.0000			0.0000
Off-Road	5.3428	60.7861	21.8537	0.0570		2.6460	2.6460		2.4343	2.4343		5,523.5047	5,523.5047	1.7864		5,568.1651
Total	5.3428	60.7861	21.8537	0.0570	21.7780	2.6460	24.4240	10.3315	2.4343	12.7658		5,523.5047	5,523.5047	1.7864		5,568.1651

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.3 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342
Total	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4934	0.0000	8.4934	4.0293	0.0000	4.0293			0.0000			0.0000
Off-Road	5.3428	60.7861	21.8537	0.0570		2.6460	2.6460		2.4343	2.4343	0.0000	5,523.5047	5,523.5047	1.7864		5,568.1651
Total	5.3428	60.7861	21.8537	0.0570	8.4934	2.6460	11.1394	4.0293	2.4343	6.4636	0.0000	5,523.5047	5,523.5047	1.7864		5,568.1651

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.3 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342
Total	0.0838	0.0503	0.5372	1.7200e-003	0.2012	1.1900e-003	0.2024	0.0534	1.0900e-003	0.0545		171.9348	171.9348	3.9700e-003		172.0342

3.4 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8633	0.0000	8.8633	3.6253	0.0000	3.6253			0.0000			0.0000
Off-Road	3.3813	39.9534	16.3820	0.0439		1.6111	1.6111		1.4822	1.4822		4,250.314 4	4,250.314 4	1.3746		4,284.680 3
Total	3.3813	39.9534	16.3820	0.0439	8.8633	1.6111	10.4744	3.6253	1.4822	5.1074		4,250.314 4	4,250.314 4	1.3746		4,284.680 3

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.4 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0444	44.3431	6.8156	0.1547	3.7712	0.1436	3.9148	1.0337	0.1374	1.1711		16,423.90 47	16,423.90 47	0.9929		16,448.72 74
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	1.1142	44.3850	7.2632	0.1562	3.9388	0.1446	4.0835	1.0782	0.1383	1.2165		16,567.18 38	16,567.18 38	0.9962		16,592.08 92

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4567	0.0000	3.4567	1.4139	0.0000	1.4139			0.0000			0.0000
Off-Road	3.3813	39.9534	16.3820	0.0439		1.6111	1.6111		1.4822	1.4822	0.0000	4,250.314 4	4,250.314 4	1.3746		4,284.680 3
Total	3.3813	39.9534	16.3820	0.0439	3.4567	1.6111	5.0677	1.4139	1.4822	2.8960	0.0000	4,250.314 4	4,250.314 4	1.3746		4,284.680 3

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0444	44.3431	6.8156	0.1547	3.7712	0.1436	3.9148	1.0337	0.1374	1.1711		16,423.90 47	16,423.90 47	0.9929		16,448.72 74
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	1.1142	44.3850	7.2632	0.1562	3.9388	0.1446	4.0835	1.0782	0.1383	1.2165		16,567.18 38	16,567.18 38	0.9962		16,592.08 92

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775		4,114.4297	4,114.4297	1.1209		4,142.4520
Total	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775		4,114.4297	4,114.4297	1.1209		4,142.4520

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0769	2.8440	0.6055	7.7300e-003	0.1985	5.6200e-003	0.2041	0.0572	5.3800e-003	0.0625		815.2170	815.2170	0.0675		816.9051
Worker	0.8654	0.5195	5.5508	0.0178	2.0790	0.0123	2.0913	0.5514	0.0113	0.5627		1,776.6600	1,776.6600	0.0411		1,777.6864
Total	0.9422	3.3635	6.1563	0.0256	2.2775	0.0179	2.2954	0.6085	0.0167	0.6252		2,591.8770	2,591.8770	0.1086		2,594.5915

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775	0.0000	4,114.4297	4,114.4297	1.1209		4,142.4520
Total	3.1137	33.9659	18.1952	0.0430		1.4763	1.4763		1.3775	1.3775	0.0000	4,114.4297	4,114.4297	1.1209		4,142.4520

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0769	2.8440	0.6055	7.7300e-003	0.1985	5.6200e-003	0.2041	0.0572	5.3800e-003	0.0625		815.2170	815.2170	0.0675		816.9051
Worker	0.8654	0.5195	5.5508	0.0178	2.0790	0.0123	2.0913	0.5514	0.0113	0.5627		1,776.6600	1,776.6600	0.0411		1,777.6864
Total	0.9422	3.3635	6.1563	0.0256	2.2775	0.0179	2.2954	0.6085	0.0167	0.6252		2,591.8770	2,591.8770	0.1086		2,594.5915

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892		4,110.5322	4,110.5322	1.1153		4,138.4135
Total	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892		4,110.5322	4,110.5322	1.1153		4,138.4135

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0718	2.6794	0.5652	7.6600e-003	0.1985	4.7400e-003	0.2032	0.0572	4.5300e-003	0.0617		808.0991	808.0991	0.0640		809.6995
Worker	0.8118	0.4674	5.1121	0.0172	2.0790	0.0119	2.0910	0.5514	0.0110	0.5624		1,711.8303	1,711.8303	0.0369		1,712.7533
Total	0.8836	3.1468	5.6773	0.0248	2.2775	0.0167	2.2942	0.6085	0.0155	0.6240		2,519.9295	2,519.9295	0.1009		2,522.4528

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892	0.0000	4,110.5322	4,110.5322	1.1153		4,138.4135
Total	2.7963	29.7637	17.6698	0.0430		1.2743	1.2743		1.1892	1.1892	0.0000	4,110.5322	4,110.5322	1.1153		4,138.4135

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0718	2.6794	0.5652	7.6600e-003	0.1985	4.7400e-003	0.2032	0.0572	4.5300e-003	0.0617		808.0991	808.0991	0.0640		809.6995
Worker	0.8118	0.4674	5.1121	0.0172	2.0790	0.0119	2.0910	0.5514	0.0110	0.5624		1,711.8303	1,711.8303	0.0369		1,712.7533
Total	0.8836	3.1468	5.6773	0.0248	2.2775	0.0167	2.2942	0.6085	0.0155	0.6240		2,519.9295	2,519.9295	0.1009		2,522.4528

3.5 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422		4,108.2392	4,108.2392	1.1101		4,135.9924
Total	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422		4,108.2392	4,108.2392	1.1101		4,135.9924

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	2.0076	0.4846	7.4600e-003	0.1985	2.1200e-003	0.2006	0.0572	2.0200e-003	0.0592		787.0982	787.0982	0.0488		788.3186
Worker	0.7636	0.4213	4.7110	0.0165	2.0790	0.0117	2.0907	0.5514	0.0107	0.5621		1,646.8664	1,646.8664	0.0332		1,647.6960
Total	0.8184	2.4288	5.1956	0.0240	2.2775	0.0138	2.2913	0.6085	0.0127	0.6213		2,433.9646	2,433.9646	0.0820		2,436.0146

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422	0.0000	4,108.2392	4,108.2392	1.1101		4,135.9924
Total	2.5519	26.2044	17.3471	0.0430		1.1169	1.1169		1.0422	1.0422	0.0000	4,108.2392	4,108.2392	1.1101		4,135.9924

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.5 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	2.0076	0.4846	7.4600e-003	0.1985	2.1200e-003	0.2006	0.0572	2.0200e-003	0.0592		787.0982	787.0982	0.0488		788.3186
Worker	0.7636	0.4213	4.7110	0.0165	2.0790	0.0117	2.0907	0.5514	0.0107	0.5621		1,646.8664	1,646.8664	0.0332		1,647.6960
Total	0.8184	2.4288	5.1956	0.0240	2.2775	0.0138	2.2913	0.6085	0.0127	0.6213		2,433.9646	2,433.9646	0.0820		2,436.0146

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1402	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.6 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		132.8118	132.8118	2.6800e-003		132.8787
Total	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		132.8118	132.8118	2.6800e-003		132.8787

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.1074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1402	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.6 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		132.8118	132.8118	2.6800e-003		132.8787
Total	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453		132.8118	132.8118	2.6800e-003		132.8787

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.3225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
Total	37.5781	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.7 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1519	0.0838	0.9371	3.2800e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		327.6025	327.6025	6.6000e-003		327.7675
Total	0.1519	0.0838	0.9371	3.2800e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		327.6025	327.6025	6.6000e-003		327.7675

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.3225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
Total	37.5781	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253

12585 Crestview Apartments - Riverside-South Coast County, Winter

3.7 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1519	0.0838	0.9371	3.2800e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		327.6025	327.6025	6.6000e-003		327.7675
Total	0.1519	0.0838	0.9371	3.2800e-003	0.4136	2.3200e-003	0.4159	0.1097	2.1300e-003	0.1118		327.6025	327.6025	6.6000e-003		327.7675

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

12585 Crestview Apartments - Riverside-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1887	8.9416	27.9170	0.1014	9.5378	0.0995	9.6373	2.5493	0.0938	2.6432		10,691.50 34	10,691.50 34	0.3660		10,700.65 42
Unmitigated	3.1887	8.9416	27.9170	0.1014	9.5378	0.0995	9.6373	2.5493	0.0938	2.6432		10,691.50 34	10,691.50 34	0.3660		10,700.65 42

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	549.98	610.50	471.00	1,642,883	1,642,883
Apartments Mid Rise	881.93	795.42	662.58	2,516,028	2,516,028
Parking Lot	0.00	0.00	0.00		
Total	1,431.90	1,405.92	1,133.58	4,158,910	4,158,910

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	11.50	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	11.50	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

12585 Crestview Apartments - Riverside-South Coast County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Apartments Mid Rise	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Parking Lot	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183
NaturalGas Unmitigated	0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

12585 Crestview Apartments - Riverside-South Coast County, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2160.81	0.0233	0.1991	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.2124	254.2124	4.8700e-003	4.6600e-003	255.7231
Apartments Mid Rise	4504.54	0.0486	0.4151	0.1767	2.6500e-003		0.0336	0.0336		0.0336	0.0336		529.9460	529.9460	0.0102	9.7200e-003	533.0952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2.16081	0.0233	0.1991	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161		254.2124	254.2124	4.8700e-003	4.6600e-003	255.7231
Apartments Mid Rise	4.50454	0.0486	0.4151	0.1767	2.6500e-003		0.0336	0.0336		0.0336	0.0336		529.9460	529.9460	0.0102	9.7200e-003	533.0952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0719	0.6143	0.2614	3.9200e-003		0.0497	0.0497		0.0497	0.0497		784.1584	784.1584	0.0150	0.0144	788.8183

6.0 Area Detail

12585 Crestview Apartments - Riverside-South Coast County, Winter

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.124 1	5,054.124 1	0.1303	0.0920	5,084.801 0
Unmitigated	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.124 1	5,054.124 1	0.1303	0.0920	5,084.801 0

12585 Crestview Apartments - Riverside-South Coast County, Winter

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.5932	0.2258	19.6009	1.0400e-003		0.1084	0.1084		0.1084	0.1084		35.3006	35.3006	0.0341		36.1531
Total	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010

12585 Crestview Apartments - Riverside-South Coast County, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4601	3.9314	1.6729	0.0251		0.3179	0.3179		0.3179	0.3179	0.0000	5,018.8235	5,018.8235	0.0962	0.0920	5,048.6479
Landscaping	0.5932	0.2258	19.6009	1.0400e-003		0.1084	0.1084		0.1084	0.1084		35.3006	35.3006	0.0341		36.1531
Total	6.1676	4.1573	21.2738	0.0261		0.4263	0.4263		0.4263	0.4263	0.0000	5,054.1241	5,054.1241	0.1303	0.0920	5,084.8010

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

12585 Crestview Apartments - Riverside-South Coast County, Winter

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

This page intentionally left blank

APPENDIX 3.2:

BLASTING CALCULATIONS

BLASTING PM10/PM2.5

E= .000014(A)^{1.5}*.52 lbs PM10/lbs TSP

E= PM10 emissions, lbs/total

A= Area to be blasted (SF)

A(day)= **12,000**

E= 9.57 lbs PM10/day without watering

E= 2.01 lbs PM2.5/day without watering

CE= 50.00% pre-wetting blasting areas and stabilizing soils once blasting is complete
(Source:Western regional Air Partnership)

E= 4.78 lbs of PM10/day with watering

E= 1.005 lbs of PM2.5/day with watering

BLASTING NOX ; SOx ; CO

E= (Blasts/year) * (avg. charges/blast) *(avg. lbs./charge) * 1/2000(lbs to tons conversion) *EF
EF(Emission Factors) (ANFO)

Blasts/year	30	CO	67 (lb released/tons used)
Maxlbs./blastcharge	210	NOx	17 (lb released/tons used)
lbs/tons conversion	2000.00	SOx	2 (lb released/tons used)

E(CO)= 211.05 lbs of CO released per year

E(Nox)= 53.55 lbs of NOx released per year

E(Sox)= 6.30 lbs of SOx released per year

E(CO)= 7.04 lbs. of CO released per day

E(Nox)= 1.79 lbs. of NOx released per day

E(Sox)= 0.21 lbs. of SOx released per day

This page intentionally left blank

APPENDIX 3.3:
EMFAC2017 OUTPUTS

EMFAC2017 Derived CalEEMod Annual Emission Rates: Year 2023^{1,2}

Season	Pollutant	LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH
Annual	CH4_IDLEX	0	0	0	0	0.0045407	0.00276992	0.002755155	0.022399945	0.008522	0	0	0.0872051	0
Annual	CH4_RUNEX	0.0018869	0.0057489	0.0031844	0.0041642	0.0044198	0.003263925	0.00087349	0.027816115	0.0054045	3.0424882	0.3131324	0.0066033	0.0032743
Annual	CH4_STREX	0.0448692	0.0733726	0.0629169	0.0781102	0.0134844	0.007177894	0.007030234	2.14182E-07	0.0240057	0.0246221	0.2420258	0.008099	0
Annual	CO_IDLEX	0	0	0	0	0.1678772	0.126758625	0.328949805	6.433638207	0.4864641	0	0	3.4287623	0
Annual	CO_RUNEX	0.563139	1.2287203	0.7936347	0.9221081	0.5983104	0.443005373	0.121131478	0.238528941	0.7023385	23.596827	18.854788	0.5536067	0.3331045
Annual	CO_STREX	2.0404918	2.2925791	2.599899	3.0067277	0.8884942	0.47818962	0.809250221	0.004385463	2.6752142	1.8623285	8.642447	1.078573	0
Annual	CO2_NBIO_IDLEX	0	0	0	0	9.3581592	14.92008755	67.2854915	1065.923835	64.367009	0	0	369.73833	0
Annual	CO2_NBIO_RUNEX	258.31456	306.77308	322.48572	406.4176	619.96277	614.9225059	911.0199741	1272.829483	1335.493	1635.6231	207.59836	1096.5469	929.32761
Annual	CO2_NBIO_STREX	53.646164	65.391896	69.037346	86.28821	9.9909554	6.42444145	7.214801684	0.03594404	21.276475	22.961833	60.360049	6.9242759	0
Annual	NOX_IDLEX	0	0	0	0	0.0826802	0.121917702	0.397207898	5.312422425	0.2257829	0	0	3.3195995	0
Annual	NOX_RUNEX	0.0309507	0.1049635	0.0646808	0.0873233	1.3894798	1.517354389	0.908191511	1.955483692	0.905988	0.3035805	1.125469	4.420865	4.2679083
Annual	NOX_STREX ³	0.1659928	0.2622294	0.2555314	0.3296519	0.2837258	0.159545375	1.799471753	2.495253007	0.6856266	0.2242227	0.2630249	0.7800028	0
Annual	PM10_IDLEX	0	0	0	0	0.0010129	0.001512805	0.000433919	0.002365147	7.511E-05	0	0	0.0033043	0
Annual	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.060417566	0.13034	0.0918981	0.01176	0.7448002	0.13034
Annual	PM10_PMTW	0.008	0.008	0.008	0.008	0.0100668	0.010946027	0.012000003	0.035225137	0.012	0.0202294	0.004	0.0105986	0.016
Annual	PM10_RUNEX	0.001312	0.0019044	0.0013554	0.0014179	0.0102968	0.013566467	0.009466862	0.024179126	0.0084683	0.0021823	0.0017969	0.0257095	0.1361859
Annual	PM10_STREX	0.0017692	0.002571	0.0018058	0.0018621	0.0002106	9.84354E-05	8.28075E-05	4.71852E-07	0.0002181	0.0002239	0.0027747	4.794E-05	0
Annual	PM25_IDLEX	0	0	0	0	0.0009691	0.001447362	0.000415148	0.002262832	7.186E-05	0	0	0.0031614	0
Annual	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.025893242	0.05586	0.0393849	0.00504	0.3192001	0.05586
Annual	PM25_PMTW	0.002	0.002	0.002	0.002	0.0025167	0.002736507	0.003000001	0.008806284	0.003	0.0050573	0.001	0.0026497	0.004
Annual	PM25_RUNEX	0.0012085	0.0017523	0.0012477	0.0013079	0.0098328	0.012970752	0.009054989	0.023133139	0.0080878	0.0020674	0.0016796	0.0245874	0.1302946
Annual	PM25_STREX	0.0016267	0.023466	0.0016604	0.0017122	0.0001937	9.05077E-05	7.61385E-05	4.33851E-07	0.0002005	0.0002059	0.0026088	4.408E-05	0
Annual	ROG_DIURN	0.0499353	0.1617031	0.0834193	0.1040066	0.0023924	0.001119316	0.00041816	2.61104E-06	0.0026672	0.0028048	1.4319645	0.0015764	0
Annual	ROG_HTSK	0.0863623	0.224901	0.1201124	0.1521245	0.0693882	0.033771174	0.014777615	9.67852E-05	0.0265187	0.0159707	0.7872755	0.0114418	0
Annual	ROG_IDLEX	0	0	0	0	0.0196433	0.014878453	0.015150214	0.435555976	0.0456612	0	0	0.4072026	0
Annual	ROG_RESTL	0.0401253	0.1141391	0.0708635	0.09308	0.0012616	0.000613159	0.000227643	1.60287E-06	0.0011772	0.0011467	0.7584722	0.0007923	0
Annual	ROG_RUNEX	0.0069514	0.0249376	0.0126	0.0170823	0.0538669	0.055274928	0.009544935	0.018413033	0.0303843	0.0485813	2.1137636	0.0924064	0.070494
Annual	ROG_RUNLS	0.1934756	0.7345866	0.3938448	0.4562317	0.4372965	0.194951955	0.073961783	0.000443814	0.2925608	0.0762512	1.766858	0.0695237	0
Annual	ROG_STREX	0.1913074	0.3650898	0.2841172	0.37727633	0.0668598	0.035024058	0.037511191	1.09632E-06	0.1278709	0.0951018	1.8332332	0.0473665	0
Annual	SO2_IDLEX	0	0	0	0	9.037E-05	0.000142292	0.00063797	0.010008431	0.0006149	0	0	0.0035362	0
Annual	SO2_RUNEX	0.0024592	0.0029207	0.0030702	0.0038688	0.0060263	0.005916347	0.00865572	0.011844363	0.0129659	0.0063195	0.0020544	0.0104989	0.0087855
Annual	SO2_STREX	0.0005107	0.0006226	0.0006573	0.0008215	9.887E-05	6.35751E-05	7.13963E-05	3.55695E-07	0.0002105	0.0002272	0.0005973	6.852E-05	0
Annual	TOG_DIURN	0.0500449	0.1620587	0.0836026	0.1042353	0.0023924	0.001119316	0.00041816	2.61104E-06	0.0026672	0.0028048	1.4319645	0.0015764	0
Annual	TOG_HTSK	0.086552	0.2253957	0.1203765	0.152459	0.0693882	0.033771174	0.014777615	9.67852E-05	0.0265187	0.0159707	0.7872755	0.0114418	0
Annual	TOG_IDLEX	0	0	0	0	0.0273519	0.019755884	0.020335748	0.498029629	0.0615992	0	0	0.5877605	0
Annual	TOG_RESTL	0.0402135	0.1143902	0.0710193	0.0932848	0.0012616	0.000613159	0.000227643	1.60287E-06	0.0011772	0.0011467	0.7584722	0.0007923	0
Annual	TOG_RUNEX	0.0101244	0.036441	0.0183878	0.0248708	0.0500012	0.064111366	0.011716585	0.048106314	0.042616	3.1108101	2.6116906	0.1099741	0.0802528
Annual	TOG_RUNLS	0.1939013	0.7362027	0.3947113	0.4572354	0.4372965	0.194951955	0.073961783	0.000443814	0.2925608	0.0762512	1.766858	0.0695237	0
Annual	TOG_STREX	0.2098759	0.4005263	0.3116944	0.4138795	0.0732031	0.038346935	0.041070033	1.20033E-06	0.1400025	0.1041245	1.995157	0.0518603	0
Summer	CH4_IDLEX	0	0	0	0	0.0045537	0.002777346	0.002627006	0.023685478	0.0085919	0	0	0.087323	0
Summer	CH4_RUNEX	0.0021288	0.0064142	0.0035754	0.00468	0.0044899	0.003286251	0.00088813	0.027816513	0.0055394	3.0425325	0.3087008	0.0066875	0.0032743
Summer	CH4_STREX	0.0389698	0.0632511	0.0545439	0.0676753	0.0129677	0.00690337	0.006757077	2.04342E-07	0.0229107	0.0223864	0.2137359	0.0067519	0
Summer	CO_IDLEX	0	0	0	0	0.1678772	0.126758625	0.286623132	6.346404591	0.4831512	0	0	3.3921972	0
Summer	CO_RUNEX	0.675626	1.4523528	0.9461111	1.0969398	0.6064749	0.44537467	0.122787353	0.238667787	0.7182675	23.599015	18.832855	0.5628972	0.3331045
Summer	CO2_STREX	1.7130448	1.9183906	2.1749055	2.5088823	0.8424303	0.453635343	0.76370611	0.004138722	2.4874475	1.5837573	7.9028329	4.7742141	0
Summer	CO2_NBIO_IDLEX	0	0	0	0	9.3581592	14.92008755	67.23807783	1052.827751	63.701705	0	0	378.97922	0
Summer	CO2_NBIO_RUNEX	279.26148	328.52739	343.17899	428.48108	9.197723	614.9266661	911.022875	1272.829712	1335.521	1635.6271	207.41131	1096.5634	929.32761
Summer	CO2_NBIO_STREX	53.016891	64.595446	68.201827	85.287092	9.9086217	6.380643186	7.137174571	0.035552778	20.958077	22.490884	58.436811	6.4152164	0
Summer	NOX_IDLEX	0	0	0	0	0.0826802	0.121917702	0.389589606	5.06332578	0.2145979	0	0	3.3986484	0
Summer	NOX_RUNEX	0.0280536	0.0942429	0.0583541	0.0788248	1.3091179	1.433264131	0.855681654	1.848376656	0.8404265	0.2953035	0.9735285	4.1579413	4.0281165
Summer	NOX_STREX ³	0.1546568	0.2441945	0.2380468	0.3070431	0.2725695	0.153283811	1.796581904	2.495247894	0.67484	0.2132216	0.2477416	0.7742504	0
Summer	PM10_IDLEX	0	0	0	0	0.0010129	0.001512805	0.000368743	0.002078293	6.674E-05	0	0	0.0027928	0
Summer	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.060417566	0.13034	0.0918981	0.01176	0.7448002	0.13034
Summer	PM10_PMTW	0.008	0.008	0.008	0.008	0.0100668	0.010946027	0.012000003	0.035225137	0.012	0.0202294	0.004	0.0105986	0.016
Summer	PM10_RUNEX	0.001312	0.0019044	0.0013554	0.0014179	0.0102968	0.013566467	0.009466862	0.024179126	0.0084683	0.0021823	0.0017969	0.0257095	0.1361859
Summer	PM10_STREX	0.0017692	0.002571	0.0018058	0.0018621	0.0002106	9.84354E-05	8.28075E-05	4.71852E-07	0.0002181	0.0002239	0.0027747	4.794E-05	0
Summer	PM25_IDLEX	0	0	0	0	0.0009691	0.001447362	0.000352791	0.001988387	6.385E-05	0	0	0.0026719	0
Summer	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.025893242	0.05586	0.0393849	0.00504	0.3192001	0.05586
Summer	PM25_PMTW	0.002	0.002	0.002	0.002	0.0025167	0.002736507	0.003000001	0.008806284	0.003	0.0050573	0.001	0.0026497	0.004
Summer	PM25_RUNEX	0.0012085	0.0017523	0.0012477	0.0013079	0.0098328	0.012970752	0.009054989	0.023133139	0.0080878	0.0020674	0.0016796	0.0245874	0.1302946
Summer	PM25_STREX	0.0016267	0.002346	0.0016604	0.0017122	0.0001937	9.05077E-05	7.61385E-05	4.33851E-07	0.0002005	0.0002059	0.0026088	4.408E-05	0
Summer	ROG_DIURN	0.092411	0.3004602	0.1538291	0.1910835	0.0042442	0.001991577	0.000750934	4.90319E-06	0.0046974	0.0049809	2.749938	0.0027601	0
Summer	ROG_HTSK	0.0964851	0.2626975	0.1350376	0.1681545	0.0738689	0.038223824	0.016691363	0.000106277	0.02873	0.0185244	1.093855	0.0118519	0
Summer	ROG_IDLEX	0	0	0	0	0.0196433	0.014878453	0.015175761	0.461157561	0.046602	0	0	0.4069309	0
Summer	ROG_RESTL	0.074744	0.2153647	0.1301545	0.1692383	0.0024046	0.001167999	0.000445854	3.30486E-06					

Winter	CH4_IDLEX	0	0	0	0	0.004543	0.002771192	0.002945617	0.018584837	0.0084633	0	0	0.0872067	0
Winter	CH4_RUNEX	0.0018546	0.0056563	0.0031317	0.0040923	0.0044277	0.003266732	0.000874173	0.000819608	0.0054162	3.0424922	0.3105787	0.006602	0.0032743
Winter	CH4_STREX	0.0448619	0.0733484	0.06291	0.0781049	0.0133912	0.007129132	0.006964358	2.12516E-07	0.0239298	0.0244988	0.2370663	0.0082436	0
Winter	CO_IDLEX	0	0	0	0	0.1678772	0.126758625	0.388116692	6.514513971	0.4910392	0	0	3.4792571	0
Winter	CO_RUNEX	0.5426824	1.1872896	0.7657339	0.8896764	0.5991695	0.443274557	0.121271705	0.153089453	0.703653	23.59702	18.300696	0.5534118	0.3331045
Winter	CO_STREX	2.0244849	2.2751516	2.5818848	2.9863893	0.8802741	0.47392663	0.800617995	0.004338734	2.6656906	1.8457548	8.4278924	1.1017425	0
Winter	CO2_NBIO_IDLEX	0	0	0	0	9.3581592	14.92008755	67.34688641	1077.398907	65.285763	0	0	356.97711	0
Winter	CO2_NBIO_RUNEX	254.7804	303.09923	318.99322	402.69279	619.96429	614.9229798	911.0202216	1253.680895	1335.4953	1635.6235	206.64372	1096.5466	929.32761
Winter	CO2_NBIO_STREX	53.619406	65.36166	69.007018	86.253787	9.9762095	6.416799952	7.200173203	0.035869944	21.259945	22.933868	59.88215	6.9638689	0
Winter	NOX_IDLEX	0	0	0	0	0.0826802	0.121917702	0.407727282	5.618352499	0.2412289	0	0	3.2104368	0
Winter	NOX_RUNEX	0.0295553	0.1003427	0.0617853	0.0834302	1.3670637	1.49381553	0.892924017	1.918074232	0.8881268	0.3014555	1.0889414	4.3545929	4.1977547
Winter	NOX_STREX ³	0.1643804	0.2597861	0.2530766	0.3265127	0.2794792	0.157150746	1.798611157	2.495251484	0.6823205	0.2222737	0.2604454	0.7802853	0
Winter	PM10_IDLEX	0	0	0	0	0.0010129	0.001512805	0.000523924	0.002699758	8.667E-05	0	0	0.0040108	0
Winter	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.089180026	0.130340037	0.060043994	0.13034	0.0918981	0.01176	0.7448002	0.13034
Winter	PM10_PMTW	0.008	0.008	0.008	0.008	0.0100668	0.010946027	0.012000003	0.035007311	0.012	0.0202294	0.004	0.0105986	0.016
Winter	PM10_RUNEX	0.001312	0.0019044	0.0013554	0.0014179	0.0102968	0.013566467	0.009466862	0.024151342	0.0084683	0.0021823	0.0017969	0.0257095	0.1361859
Winter	PM10_STREX	0.0017692	0.002571	0.0018058	0.0018621	0.0002106	9.84354E-05	8.28075E-05	4.71852E-07	0.0002181	0.0002239	0.0027747	4.794E-05	0
Winter	PM25_IDLEX	0	0	0	0	0.0009691	0.001447362	0.000501259	0.002582967	8.292E-05	0	0	0.0038373	0
Winter	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.038220011	0.055860016	0.02573314	0.05586	0.0393849	0.00504	0.3192001	0.05586
Winter	PM25_PMTW	0.002	0.002	0.002	0.002	0.0025167	0.002736507	0.003000001	0.008751828	0.003	0.0050573	0.001	0.0026497	0.004
Winter	PM25_RUNEX	0.0012085	0.0017523	0.0012477	0.0013079	0.0098328	0.012970752	0.009054989	0.023106557	0.0080878	0.0020674	0.0016796	0.0245874	0.1302946
Winter	PM25_STREX	0.0016267	0.002364	0.0016604	0.0017122	0.0001937	9.05077E-05	7.61385E-05	4.33851E-07	0.0002005	0.0002059	0.0026088	4.408E-05	0
Winter	ROG_DIURN	0.0488148	0.1633364	0.0798345	0.0974958	0.0024967	0.001135244	0.000435792	2.68249E-06	0.0027829	0.0028434	1.6393559	0.0014837	0
Winter	ROG_HTSK	0.0944738	0.2576047	0.1320133	0.1644796	0.0804822	0.03841713	0.016334791	0.000107927	0.028432	0.0178481	1.0540129	0.0117059	0
Winter	ROG_IDLEX	0	0	0	0	0.0196433	0.014878453	0.015676089	0.400126443	0.0443619	0	0	0.4075779	0
Winter	ROG_RESTL	0.0401785	0.1138154	0.071025	0.0934274	0.0013209	0.000634648	0.000238868	1.72859E-06	0.0012515	0.0012014	0.7628485	0.0008183	0
Winter	ROG_RUNEX	0.0068278	0.0245071	0.0123808	0.0167676	0.0539028	0.055285876	0.009550806	0.017311118	0.0304402	0.0485932	2.0925849	0.0924026	0.070494
Winter	ROG_RUNLS	0.2190298	0.8575349	0.4555568	0.5238872	0.4706234	0.210639325	0.08059738	0.000472322	0.3114386	0.0890146	2.0230662	0.0843655	0
Winter	ROG_STREX	0.1911347	0.3645853	0.2838611	0.376922	0.0663485	0.034760684	0.037229432	1.08808E-06	0.1274435	0.0945968	1.7917479	0.0482208	0
Winter	SO2_IDLEX	0	0	0	0	9.037E-05	0.000142292	0.000638416	0.010178731	0.0006236	0	0	0.0034157	0
Winter	SO2_RUNEX	0.0024256	0.0028857	0.0030369	0.0038333	0.0060263	0.005916352	0.008655723	0.011844363	0.0129659	0.0063195	0.0020449	0.0104989	0.0087855
Winter	SO2_STREX	0.0005105	0.0006223	0.000657	0.0008212	9.872E-05	6.34994E-05	7.12516E-05	3.54962E-07	0.0002104	0.0002269	0.0005926	6.891E-05	0
Winter	TOG_DIURN	0.048922	0.1636957	0.08001	0.0977102	0.0024967	0.001135244	0.000435792	2.68249E-06	0.0027829	0.0028434	1.6393559	0.0014837	0
Winter	TOG_HTSK	0.0946814	0.2581714	0.1323036	0.1648413	0.0804822	0.03841713	0.016334791	0.000107927	0.028432	0.0178481	1.0540129	0.0117059	0
Winter	TOG_IDLEX	0	0	0	0	0.0273519	0.019755884	0.021193826	0.455513497	0.0601201	0	0	0.5881877	0
Winter	TOG_RESTL	0.0402669	0.1140658	0.0711813	0.0936329	0.0013209	0.000634648	0.000238868	1.72859E-06	0.0012515	0.0012014	0.7628485	0.0008183	0
Winter	TOG_RUNEX	0.0099438	0.0358119	0.0180675	0.0244122	0.0650526	0.064127342	0.011725152	0.019738418	0.0426976	3.1108276	2.5860036	0.1099684	0.0802528
Winter	TOG_RUNLS	0.2195116	0.8594214	0.4565591	0.5250397	0.4706234	0.210639325	0.08059738	0.000472322	0.3114386	0.0890146	2.0230662	0.0843655	0
Winter	TOG_STREX	0.2096864	0.3999728	0.3114135	0.4135052	0.0726433	0.038058574	0.040761542	1.19131E-06	0.1395346	0.1035715	1.9500346	0.0527957	0

1 Source: California Air Resources Board. EMFAC2017 Web Database. <https://www.arb.ca.gov/emfac/2017/>; California Air Pollution Control Officers Association (CAPCOA). 2017, November.

California Emissions Estimator Model User's Guide, Version 2016.3.2, Appendix A.

2 Unless otherwise noted, per CalEEMod methodology, the calculated CalEEMod emission rates are derived from the emission rates obtained using the EMFAC2017 Web Database for the Riverside County (SC) region.

3 Because EMFAC2017 provides vehicle trips data for MHD and HHDT diesel trucks, the formula provided in Appendix A of the CalEEMod User's Guide in calculating the NO_x STREX emission rates are utilized.

This page intentionally left blank



Crestview Apartments

AIR TOXIC AND CRITERIA POLLUTANT HEALTH RISK ASSESSMENT
CITY OF RIVERSIDE

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 336-5987

JULY 22, 2020

TABLE OF CONTENTS

TABLE OF CONTENTS	I
APPENDICES	II
LIST OF EXHIBITS	III
LIST OF TABLES	III
LIST OF ABBREVIATED TERMS	IV
EXECUTIVE SUMMARY	1
1 INTRODUCTION	4
1.1 Site Location	4
1.2 Project Description	4
2 SOURCE IDENTIFICATION	8
3 SOURCE CHARACTERIZATION	10
4 EXPOSURE QUANTIFICATION	14
5 RISK CHARACTERIZATION	17
5.1 Carcinogenic Chemical Risk	17
5.2 Non-Carcinogenic Exposures	19
5.3 Potential Cancer and Non-Cancer Risks	20
5.4 Criteria Pollutant Exposures	20
6 FINDINGS & CONCLUSIONS	25
7 REFERENCES	27
8 CERTIFICATION	29

APPENDICES

APPENDIX 3.1: EMISSION RATE CALCULATION WORKSHEETS

APPENDIX 3.2: RISK CALCULATION WORKSHEETS

APPENDIX 3.3: AERMOD MODEL OUTPUT SUMMARY FILE

**APPENDIX 3.4: AERMOD MODEL INPUT/OUTPUT FILES
(ELECTRONIC FORMAT, AVAILABLE ON REQUEST)**

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP	5
EXHIBIT 1-B: SITE PLAN	6
EXHIBIT 4-A: SOURCE RECEPTOR GRID NETWORK	15

LIST OF TABLES

TABLE 2-1 FREEWAY TRAFFIC VOLUMES	8
TABLE 3-1: VEHICLE FLEET MIX PROFILE	11
TABLE 3-3: COMPOUNDS EMITTED FROM ON ROAD MOBILE SOURCE ACTIVITY	12
TABLE 2-3: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK	14
TABLE 5-1: CALIFORNIA AMBIENT AIR QUALITY STANDARDS	21
TABLE 5-2: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2012-2014	22
TABLE 5-3: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS	22

LIST OF ABBREVIATED TERMS

(1)	Reference
AADT	Annual Average Daily Traffic Volumes
ARB	Air Resources Board
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CPF	Cancer Potency Factor
EPA	Environmental Protection Agency
HRA	Health Risk Assessment
LDA	Light Duty Auto
LDT	Light Duty Truck
LHD	Light Heavy Duty
MCY	Motorcycle
MDV	Medium Duty Vehicle
NO ₂	Nitrogen Dioxide
OBUS	Other Bus
OLM	Ozone Limiting
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
PPM	Parts per Million
Project	Crestview Apartments
PVMRM	Plume Volume Molar Ratio Methods
REL	Reference Exposure Level
RME	Reasonable Maximum Exposure
SBUS	School Bus
SCAQMD	South Coast Air Quality Management District
TACs	Toxic Air Contaminants
UBUS	Urban Bus
URF	Unit Risk Factor
UTM	Universal Traverse Mercator

EXECUTIVE SUMMARY

In 2005, the California Air Resources Board (ARB) promulgated an advisory recommendation to avoid setting sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The ARB indicates that due to traffic-generated pollutants, there is an estimated increased cancer risk incidence of 300 to 1,700 per million within this domain. At some point however, the increased cancer risk incidence due the effects of freeway/roadway corridor pollutants become indistinguishable from the ambient air quality condition. In this regard, the effects of freeway/roadway-source pollutants that may impact the Project site are already acknowledged and accounted for within the ambient air quality discussions presented within this Section. More specifically, the MATES-IV Study data for the Project site comprehensively reflects increased TAC-source cancer risks affecting the City and Project site, inclusive of increased cancer risks due to freeway sources.

The 2005 ARB guidance noted previously, information made available through the MATES-IV Study, and configuration and design of the Project would suggest that further assessment of freeway-source pollutant impacts is not warranted. Notwithstanding, this Off-Site Freeway-Source Air Toxic and Criteria Pollutant Health Risk Assessment has been prepared for the Project and is intended to:

- Comply with and support CEQA Section 15003 (i) policies addressing adequacy, completeness, and a good-faith effort at full disclosure;
- Disaggregate potential freeway-source air pollutant health effects from other background conditions identified in the MATES IV Study; and
- Identify means to reduce the specific effects of freeway-source pollutants at the Project site.

Findings and conclusions of this Assessment are summarized below.

SUMMARY OF FINDINGS

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 3.45 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one. For acute exposures, the hazard indices for the identified averaging times did not exceed unity. Therefore, noncarcinogenic hazards are calculated to be within acceptable limits and a less than significant impact would occur.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM₁₀ concentrations of 0.87 µg/m³ and 0.44 µg/m³ for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 µg/m³ and 1.0 µg/m³, respectively.

For PM_{2.5}, a maximum 24-hour average concentration of 0.30 µg/m³ was predicted. This value also will not exceed the identified significance threshold of 2.5 µg/m³.

The maximum modeled 1-hour average concentration for CO of 0.13 parts per million (ppm), when added to an existing background concentration of 2.2 ppm, would equal a total Project concentration of 2.33 ppm. This would not cause an exceedance of the California Ambient Air Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.10 ppm, when added to an existing background level of 2.0 ppm, would equal a total Project concentration of 2.10 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO₂, a maximum one-hour concentration of 0.013 ppm was predicted. This concentration, when added to a background concentration of 0.073 ppm, would equal a total Project concentration of 0.086 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

As noted, short duration (i.e., 1 and 8-hour) exposures associated with both toxic and criteria pollutants are within acceptable limits. As such, less than significant impacts are anticipated to residents who would access and utilize outdoor amenities.

This page intentionally left blank

1 INTRODUCTION

In 2005, the California Air Resources Board (ARB) promulgated an advisory recommendation to avoid setting sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day. According to the ARB, the increased cancer risk is 300 to 1,700 per million within this domain. The strongest association of traffic related emissions with adverse health outcomes was seen within 300 feet of roadways with high truck densities. Notwithstanding, the ARB notes that a site-specific analysis would be required to determine the actual risk near a particular land use and should consider factors such as prevailing wind direction, local topography and climate.

In consideration of the above referenced requirement, the assessment and dispersion modeling methodologies used in the preparation of this report were composed of all relevant and appropriate procedures presented by the U.S. Environmental Protection Agency, California Environmental Protection Agency and South Coast Air Quality Management District (SCAQMD). The methodologies and assumptions offered under this regulatory guidance were used to ensure that the assessment effectively quantified residential exposures associated with the generation of contaminant emissions from adjacent mobile source activity.

This report summarizes the protocol used to evaluate contaminant exposures and presents the results of the health risk assessment (HRA) prepared by Urban Crossroads, Inc., for the proposed Crestview Apartments development (referred to as “Project”).

1.1 SITE LOCATION

The proposed Crestview Apartments Project is located at the northwest corner of Sycamore Canyon Boulevard and Central Avenue in the City of Riverside, as shown on Exhibit 1-A.

The proposed Project is located approximately 237 feet southwest of Interstate 215 (I-215) / State Route 60 (SR-60).

1.2 PROJECT DESCRIPTION

The total development is proposed to consist of 237 multifamily residential dwelling units (DU), as shown on Exhibit 1-B.

As part of the project design, the Project applicant has agreed to installing and maintaining air filtration systems with efficiencies equal to or exceeding a Minimum Efficiency Reporting Value (MERV) 13 as defined by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. (1)¹ in the proposed apartment complex.

1 The use of MERV filtration systems to reduce DPM and particulates has been successfully implemented by several lead agencies, including, but not limited to: City of Los Angeles, City of Claremont, City of Irvine, City of Glendale, City of Berkeley, City of Oakland, and the Los Angeles Unified School District (LAUSD).

The average particle size efficiency (PSE) removal based on ASHRAE Standard 52.2 for MERV 13 is approximately 75% for 0.3 to 1.0 $\mu\text{g}/\text{m}^3$ (DPM) and 90% for 1.0 to 10 $\mu\text{g}/\text{m}^3$ (PM₁₀ and PM_{2.5}) (2). Appendix 1.1 presents a summary of MERV filtration efficiencies.

EXHIBIT 1-A: LOCATION MAP

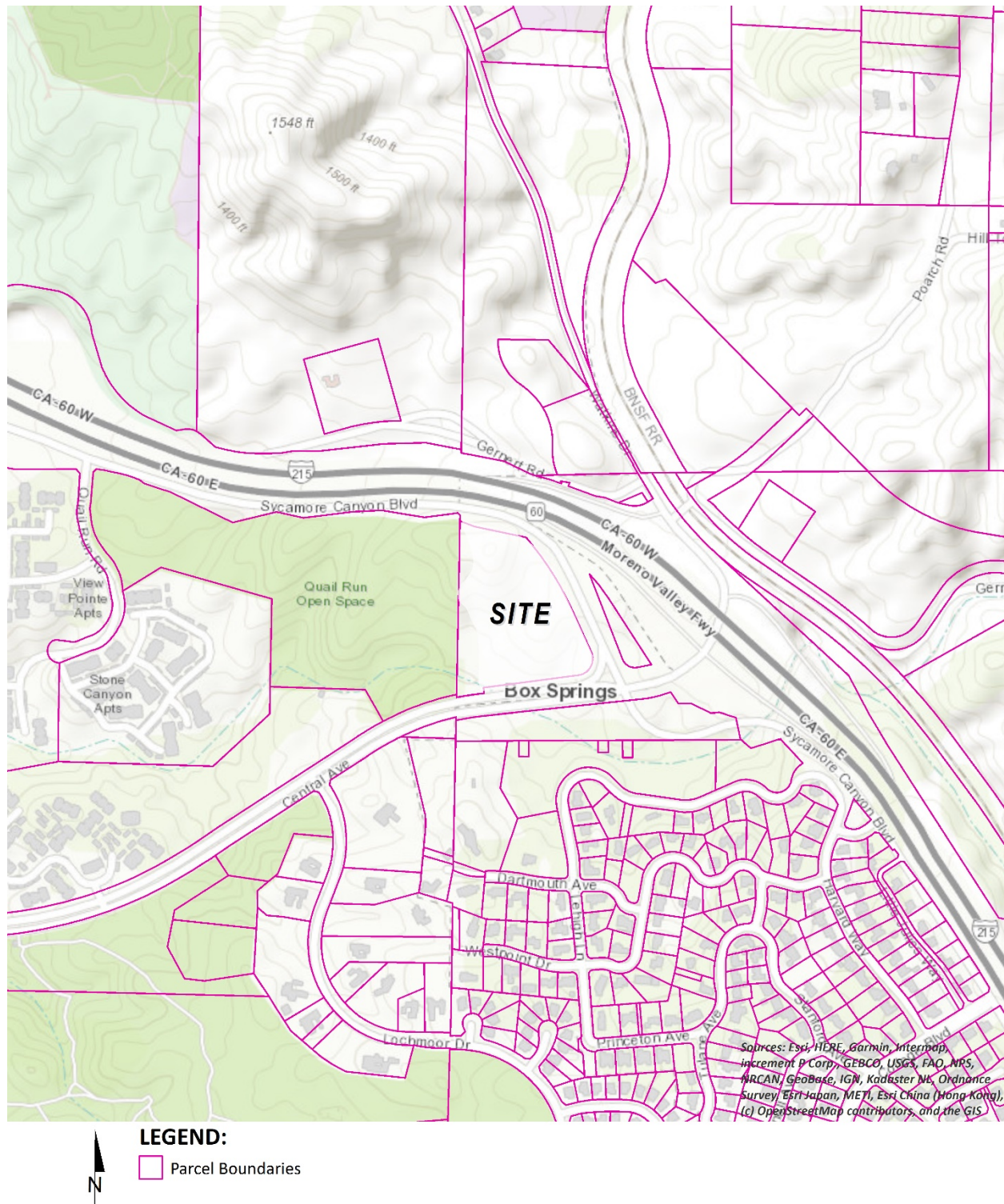
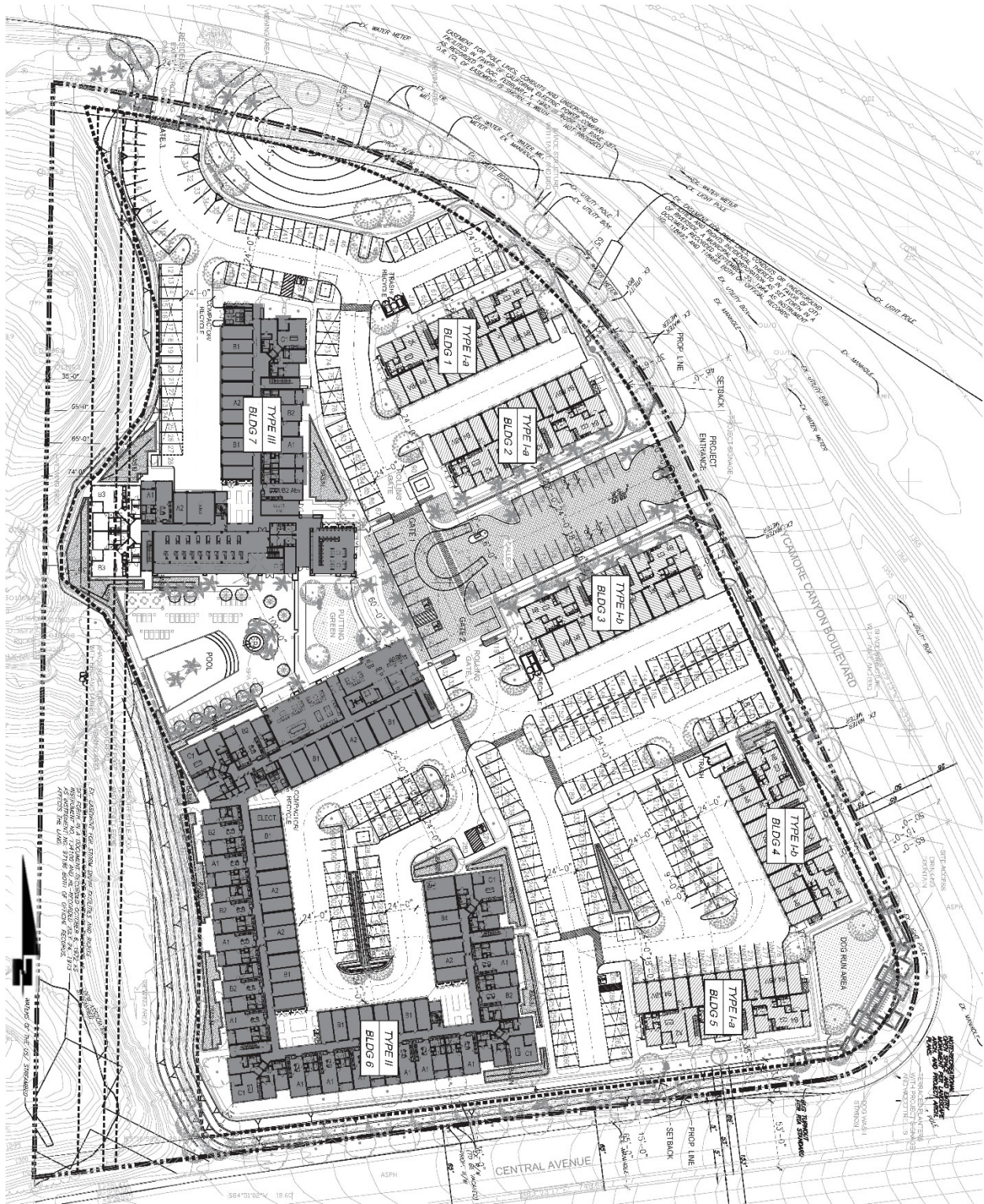


EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

2 SOURCE IDENTIFICATION

The California Department of Transportation (Caltrans), Traffic and Vehicle Data Systems Unit collects and maintains traffic volume counts for vehicles traversing the California state highway system. Table 2-1 presents the annual average daily traffic volumes (AADT) for the freeway segment considered in the assessment. The AADT volumes for I-215/SR-60 are based on a 10-percent increase in existing volumes obtained from the Caltrans Traffic Data Brand Annual Average Daily Truck Traffic on the California Highway System data and is consistent with the Project's noise study (2).

TABLE 2-1 FREEWAY TRAFFIC VOLUMES

Roadway Segment	AADT	Vehicles Per Hour (ALL)	Vehicles Per Hour (gas)	Vehicles Per Hour (diesel)
I-215/SR-60 Freeway	187,000	7,792	7,158	633

This page intentionally left blank

3 SOURCE CHARACTERIZATION

In urban communities, vehicle emissions contribute significantly to localized concentrations of air contaminants. Typically, emissions generated from these sources are characterized by vehicle mix, the rate pollutants are generated during the course of travel and the number of vehicles traversing the roadway network.

Currently, emission factors are generated from a series of computer based programs to produce a composite emission rate for vehicles traveling at various speeds within a defined geographical area or along a discrete roadway segment. To account for the emission standards imposed on the California fleet, the ARB has developed the EMFAC2017 emission factor model. EMFAC2017 was utilized to identify pollutant emission rates for total organic gases (TOG), diesel particulates, particulates (PM10 and PM2.5), carbon monoxide (CO) and nitrogen oxide (NOx) compounds (3). To produce a representative vehicle fleet distribution, the assessment utilized ARB's Riverside County vehicle population estimates for the 2022 calendar year, consistent with the Project's anticipated Opening Year for analytical purposes. This approach provides an estimate of vehicle mix associated with operational profiles at the link or intersection level. Table 3-1 lists the identified fleet mix considered in the assessment.

Based upon the freeway traffic volumes and vehicle population profiles noted above, discrete traffic counts were identified for each roadway segment. Diesel vehicles account for 3.92 percent of the total on-road mobile fleet. For chronic (long term) and acute (e.g., 1-hour) exposures, AADT values were averaged to produce representative hourly traffic volumes.

TABLE 3-1: VEHICLE FLEET MIX PROFILE

Vehicle class	Riverside County		
	Fuel	Population	Percent
LDA	Diesel	772,785.87	51.76%
LDA	Gas	7,300.59	0.49%
LDA	Electric	12,758.75	0.85%
LDT1	Diesel	39.18	0.00%
LDT1	Gas	82,772.07	5.54%
LDT1	Electric	485.08	0.03%
LDT2	Diesel	1,463.53	0.10%
LDT2	Gas	252,998.01	16.95%
LDT2	Electric	2,319.02	0.16%
LHD1	Diesel	20,161.77	1.35%
LHD1	Gas	20,620.88	1.38%
LHD2	Diesel	7,795.76	0.52%
LHD2	Gas	3,286.38	0.22%
MCY	Gas	36,240.66	2.43%
MDV	Diesel	4,324.74	0.29%
MDV	Gas	208,995.21	14.00%
MDV	Electric	1,262.69	0.08%
MHDT	Diesel	2,591.61	0.17%
MHDT	Gas	6,006.90	0.40%
HHDT	Diesel	15,610.04	1.05%
HHDT	Gas	2,027.16	0.14%
HHDT	Natural Gas	27,819.82	1.86%
OBUS	Diesel	7.26	0.00%
OBUS	Gas	316.99	0.02%
SBUS	Diesel	351.64	0.02%
SBUS	Gas	588.34	0.04%
UBUS	Diesel	1,154.01	0.08%
UBUS	Gas	490.88	0.03%
UBUS	Electric	1.11	0.00%
UBUS	Natural Gas	164.46	0.01%

Note: Vehicle category descriptions can be found on the California Air Resources Board website at <http://www.arb.ca.gov/msei/modeling.htm>.

Average observed route speeds were assumed for vehicles traversing the main highway link (SR-60). Emissions associated with acceleration and deceleration (i.e., on/off ramps) were based upon vehicle speeds of 45 and 5 miles per hour, respectively. These values were subsequently adjusted utilizing the modal algorithms presented in the California Line Source Dispersion Model (4).

For particulates (PM₁₀ and PM_{2.5}), emissions were quantified through the reentrainment of paved roadway dust. The predictive emission equation developed by the U.S. Environmental Protection Agency (AP-42, Section 13.2.1) was utilized to generate particulate source strength (5). To account for the mass rate of emissions entrained from the roadway surface, the contribution from exhaust, brake and tire wear were added to the AP-42 emission factor equation.

A list of compounds associated with mobile source emissions is presented in Table 3-3. Appendix 3.1 presents the on-road emission rate calculation worksheets for the freeway segments considered in the assessment.

TABLE 3-3: COMPOUNDS EMITTED FROM ON ROAD MOBILE SOURCE ACTIVITY

Source	Pollutant
Freeway and On and Off-Ramps	Benzene Formaldehyde 1,3-Butadiene Acetaldehyde Acrolein Diesel Particulates Reentrained Particulates (PM ₁₀ , PM _{2.5}) Carbon Monoxide Nitrogen Dioxide

This page intentionally left blank

4 EXPOSURE QUANTIFICATION

In order to assess the impact of emitted compounds on individuals who reside at the proposed apartment complex, air quality modeling utilizing the AMS/EPA Regulatory Model AERMOD was performed to assess the downwind extent of mobile source emissions located within a 1,000 feet of the project site. AERMOD's air dispersion algorithms are based upon a planetary boundary layer turbulence structure and scaling concepts, including the treatment of surface and elevated sources in simple and complex terrain.

The model offers additional flexibility by allowing the user to assign initial vertical and lateral dispersion parameters for sources representative of a localized mobile fleet. For this assessment, the volume source algorithm was utilized to model the emissions generated from on-road mobile source activity.

The model utilizes the ARM2 protocol to perform the NO_x to NO₂ conversion as recommended by the SCAQMD.

Air dispersion models require additional input parameters including pollutant emission data and local meteorology. Due to their sensitivity to individual meteorological parameters such as wind speed and direction, the U.S. Environmental Protection Agency recommends that meteorological data used as input into dispersion models be selected on the basis of relative spatial and temporal conditions that exist in the area of concern. In response to this recommendation, the nearest meteorological data available from the SCAQMD Riverside Airport Meteorological Data Station (Source Receptor Area 23), was used to represent local weather conditions and prevailing winds. Five years (2012-2016) of available AERMOD meteorological data was utilized in the modeling, which is the latest available information from SCAQMD.

The modeling analysis also considered the spatial distribution of mobile source activity traversing the freeway in relation to the proposed site. To accommodate a Cartesian grid format, direction dependent calculations were obtained by identifying the universal transverse mercator (UTM) coordinates for each volume source location. On-site receptors were placed to provide coverage across the identified residential portion of the site. A ground level receptor height was assumed as a conservative measure. A graphical representation of the source-receptor grid network is presented in Exhibit 4-A. A complete listing of model input/output files are provided in electronic format in Appendix 4.1.

EXHIBIT 4-A: SOURCE RECEPTOR GRID NETWORK



= Modeled Sensitive Receptors



= Modeled Emissions Source

5 RISK CHARACTERIZATION

5.1 CARCINOGENIC CHEMICAL RISK

The SCAQMD CEQA Air Quality Handbook (1993) states that emissions of toxic air contaminants (TACs) are considered significant if a HRA shows an increased risk of greater than ten in one million. Based on guidance from the SCAQMD in the document Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (8), for purposes of this analysis, ten (10) in one million is used as the cancer risk threshold for the proposed Project.

Excess cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 1 in a million implies a likelihood that up to one person, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. This risk would be an excess cancer risk that is in addition to any cancer risk borne by a person not exposed to these air toxics.

Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). The URF is a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It represents an upper bound estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu\text{g}/\text{m}^3$) over a 70 year lifetime. The URFs utilized in the assessment and corresponding cancer potency factors were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*.

Notwithstanding, it is the intent of the HRA to provide cumulative risk estimates from near-field on-road sources that are reflective of anticipated exposures experienced at a given residential occupancy. As such, a review of relevant guidance was conducted to determine applicability of the use of early life exposure adjustments to identified carcinogens. For risk assessments conducted under the auspices of The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, Statutes of 1987; Health and Safety Code Section 44300 et seq.) a weighting factor is applied to all carcinogens regardless of purported mechanism of action. However, for this assessment, the HRA relied upon U.S. Environmental Protection Agency guidance relating to the use of early life exposure adjustment factors (Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens, EPA/630/R-003F) whereby adjustment factors are only considered when carcinogens act "through the mutagenic mode of action." A mutagen is a physical or chemical agent that changes genetic material, such as DNA, increasing

the frequency of mutations to produce carcinogenic effects. The U.S. Environmental Protection Agency has identified 19 compounds that elicit a mutagenic mode of action for carcinogenesis. None of the gaseous compounds considered in the HRA elicit a mutagenic mode of action and, therefore, early life exposure adjustments were not considered. For diesel particulates, polycyclic aromatic hydrocarbons (PAHs) and their derivatives, which are known to exhibit a mutagenic mode of action, comprise < 1% of the exhaust particulate mass. To date, the U.S. Environmental Agency reports that whole diesel engine exhaust has not been shown to elicit a mutagenic mode of action.

Accordingly, the health risks to children were not underestimated in the Health Risks Assessment. As discussed, the use of age-weighted factors is not required because none of the gaseous compounds considered in the HRA elicit a primary mutagenic mode of action and none of the pollutants considered are listed by the EPA as having a primary mutagenic mode of action. Therefore, early life exposure adjustments were not considered in accordance with U.S. EPA guidance relating to the use of early life exposure adjustment factors. This analysis appropriately accounts for potential health risk to future residents at the project site.

To effectively quantify dose, the procedure requires the incorporation of several discrete exposure variates. Once determined, contaminant dose is multiplied by the cancer potency factor (CPF) in units of inverse dose expressed in milligrams per kilogram per day (mg/kg/day)⁻¹ to derive the cancer risk estimate. Therefore, to assess exposures associated with the proposed residential population, the following dose algorithm was utilized.

$$CDI = (C_{air} \times EF \times ED \times IR) / (BW \times AT)$$

Where:

CDI	=	chronic daily intake (mg/kg/day)
C _{air}	=	concentration of contaminant in air (mg/m ³)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
IR	=	inhalation rate (m ³ /day)
BW	=	body weight (kg)
AT	=	averaging time (days)

To represent residential exposures, the assessment employed the U.S. Environmental Protection Agency's guidance to develop viable dose estimates based on reasonable maximum exposures (RME). Specifically, activity patterns for population mobility recommended by the U.S. Environmental Protection Agency and presented in the *Exposure Factors Handbook* were utilized. As a result, lifetime risk values for residents were adjusted to account for an exposure duration of 350 days per year for 30 years (i.e., 95th percentile). These values are consistent with the

California Environmental Quality Act which considers the evaluation of environmental effects of proposed projects in a manner that reflects both reasonable and feasible assumptions. For body weight and inhalation, the assessment employed average adult values of 70 kilograms and 20 cubic meters per day, respectively.

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 3.45 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the OEHHA guidance document entitled Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis (6) and guidance from SCAQMD.

Table 5-1 summarizes the Exposure Parameters for Residents. Appendix 5.1 includes the detailed emissions and risk calculation outputs. (7)

TABLE 5-1: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK

Exposure Parameter	Units	Residential
Exposure Frequency	days/year	350
Exposure Duration	years	70
Inhalation Rate ^a	L/kg-day	302
Exposure Duration	Years	30
Exposure Time	hours/day	24
^a The residential breathing rate of 302 L/kg-day represents the 80 th percentile breathing rate per ARB and consistent with SCAQMD Risk Assessment Procedures for Rules 1401 and 212, the worker breathing rate of 149 L/kg-day is also consistent with SCAQMD Risk Assessment Procedures for Rules 1401 and 212, the school child breathing rate of 581 L/kg-day represents the high end 95 th percentile breathing rate.		

5.2 NON-CARCINOGENIC EXPOSURES

An evaluation of the potential noncancerous effects of contaminant exposures was also conducted. Under the point estimate approach, adverse health effects are evaluated by comparing the concentration of each compound with the appropriate Reference Exposure Level (REL). Available REL's presented in the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values were considered in the assessment.*

To quantify noncarcinogenic impacts, the hazard index approach was used. The hazard index assumes that subthreshold exposures adversely affect a specific organ or organ system (i.e., toxicological endpoint). For each discrete pollutant exposure, target organs presented in regulatory guidance were utilized.

To calculate the hazard index, the pollutant concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one (i.e., unity), a health hazard is presumed to exist. For chronic exposures, REL's were converted to units expressed in mg/kg/day to accommodate the

above referenced intake algorithm. To assess acute noncancer impacts, the maximum pollutant concentration is divided by the REL for the corresponding averaging time (e.g., 1-hour). No exposure adjustments are considered for short duration exposures.

Appendix 5.1, summarizes the REL's and corresponding reference dose values used in the evaluation of chronic noncarcinogenic and acute exposures. The noncancer hazard quotient for identified compounds generated from each source and a summation for each toxicological endpoint are presented on this table.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than the threshold of 1.0 for all exposure scenarios. For acute exposures, the hazard indices for the identified averaging times did not exceed the threshold of 1.0. Therefore, acute and chronic non-carcinogenic hazards were predicted to be within acceptable limits and are less than significant.

5.3 POTENTIAL CANCER AND NON-CANCER RISKS²

For carcinogenic exposures the summation of risk for the maximum exposed residential receptor totaled 3.45 in one million, which does not exceed the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be less than 1.0 for all toxicological endpoints.

5.4 CRITERIA POLLUTANT EXPOSURES

The State of California has promulgated strict ambient air quality standards for various pollutants. These standards were established to safeguard the public's health and welfare with specific emphasis on protecting those individuals susceptible to respiratory distress, such as asthmatics, the young, the elderly and those with existing conditions which may be affected by increased pollutant concentrations. However, recent research has shown that unhealthful respiratory responses occur with exposures to pollutants at levels that only marginally exceed clean air standards. Table 5-1 presents the CAAQS for the criteria pollutants considered in the assessment.

Pollutant emissions are considered to have a significant effect on the environment if they result in concentrations that create either a violation of an ambient air quality standard, contribute to an existing air quality violation or expose sensitive receptors to substantive pollutant concentrations. Should ambient air quality already exceed existing standards, the SCAQMD has established significance criteria for selected compounds to account for the continued degradation of local air quality. Background concentrations are based upon the highest observed value for the most recent three year period.

For PM₁₀ emissions, background concentrations representative of the project area exceed the CAAQS for the 24-hour and annual averaging times. As a result, a significant impact is achieved

² SCAQMD guidance does not require assessment of the potential health risk to on-site workers. Excerpts from the document OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines—The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2003), also indicate that it is not necessary to examine the health effects to on-site workers unless required by RCRA (Resource Conservation and Recovery Act) / CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) or the worker resides on-site.

when pollutant concentrations produce a measurable change over existing background levels. Although background concentrations exceed the CAAQS annual averaging time for fine particulates, no measurable change criteria currently exists. As a result, the SCAQMD significance threshold of $2.5 \mu\text{g}/\text{m}^3$ for the 24-hour averaging time is used to assess $\text{PM}_{2.5}$ impacts.

For the CO 1 and 8-hour averaging times and NO_2 1-hour averaging time, background concentrations are below the current air quality standards. As such, significance is achieved when pollutant concentrations add to existing levels and create an exceedance of the CAAQS. Table 5-2 shows the pollutant concentrations collected at the nearest available monitoring site to the Project for the last three years of available data. Table 5-3 outlines the relevant significance thresholds considered to affect local air quality.

TABLE 5-1: CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard	Health Effects
Particulates (PM_{10})	$>50 \mu\text{g}/\text{m}^3$ (24 hr avg.) $>20 \mu\text{g}/\text{m}^3$ (Annual)	1) Excess deaths from short-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory disease. 2) Excess seasonal declines in pulmonary function especially in children.
Particulates ($\text{PM}_{2.5}$)	$>12 \mu\text{g}/\text{m}^3$ (Annual)	1) Excess deaths and illness from long-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory and cardio pulmonary disease.
Carbon Monoxide (CO)	$>9.0 \text{ ppm}$ (8 hr avg.) $>20.0 \text{ ppm}$ (1 hr avg.)	1) Aggravation of angina pectoris and other aspects of coronary heart disease. 2) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease. 3) Impairment of central nervous system functions. 4) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	$>0.18 \text{ ppm}$ (1 hr avg.)	1) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups. 2) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes.

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

Source: California Code of Regulations, Title 17, Section 70200.

TABLE 5-2: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2012-2014³

Pollutant/ Averaging Time	Year			
	2014	2015	2016	Maximum
Particulates (PM ₁₀) 24-Hour	82	138	126	138
Particulates (PM _{2.5}) 24-Hour	39.12	50.3	50.7	50.7
Carbon Monoxide (CO) 1-Hour	1.7	1.9	2.2	2.2
8-Hour	1.3	1.7	2.0	2.0
Nitrogen Dioxide (NO ₂) 1-Hour	0.073	0.063	0.055	0.073

Note: PM₁₀ concentrations are expressed in micrograms per cubic meter (µg/m³). All others are expressed in parts per million (ppm).
Source: U.S. Environmental Protection Agency http://www.epa.gov/airdata/ad_rep_mon.html

TABLE 5-3: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Averaging Time	Pollutant Concentration
Particulates (PM ₁₀) Particulates (PM _{2.5})	24-Hours	2.5 µg/m ³ (operation)
Particulates (PM ₁₀)	Annual	1.0 µg/m ³
Carbon Monoxide (CO)	1/8-Hours	SCAQMD is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standards 20 ppm (1-hour) and 9 ppm (8-hour).
Nitrogen Dioxide (NO ₂)	1-Hour	SCAQMD is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standard 0.18 ppm.

Abbreviations: ppm: parts per million; µg/m³: micrograms per cubic meter
Source: South Coast Air Quality Management District.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM₁₀ concentrations of 0.87 µg/m³ and 0.44 µg/m³ for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 µg/m³ and 1.0 µg/m³, respectively.

For PM_{2.5}, a maximum 24-hour average concentration of 0.30 µg/m³ was predicted. This value also will not exceed the identified significance threshold of 2.5 µg/m³.

³ PM₁₀, PM_{2.5}, CO, and NO₂ data obtained from the SRA23 monitoring station.

The maximum modeled 1-hour average concentration for CO of 0.13 parts per million (ppm), when added to an existing background concentration of 2.2 ppm, would equal a total Project concentration of 2.33 ppm. This would not cause an exceedance of the California Ambient Air Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.10 ppm, when added to an existing background level of 2.0 ppm, would equal a total Project concentration of 2.10 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO₂, a maximum one-hour concentration of 0.013 ppm was predicted. This concentration, when added to a background concentration of 0.073 ppm, would equal a total Project concentration of 0.086 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

This page intentionally left blank

6 FINDINGS & CONCLUSIONS

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 3.45 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one. For acute exposures, the hazard indices for the identified averaging times did not exceed unity. Therefore, noncarcinogenic hazards are calculated to be within acceptable limits and a less than significant impact would occur.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM₁₀ concentrations of 0.87 µg/m³ and 0.44 µg/m³ for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 µg/m³ and 1.0 µg/m³, respectively.

For PM_{2.5}, a maximum 24-hour average concentration of 0.30 µg/m³ was predicted. This value also will not exceed the identified significance threshold of 2.5 µg/m³.

The maximum modeled 1-hour average concentration for CO of 0.13 parts per million (ppm), when added to an existing background concentration of 2.2 ppm, would equal a total Project concentration of 2.33 ppm. This would not cause an exceedance of the California Ambient Air Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.10 ppm, when added to an existing background level of 2.0 ppm, would equal a total Project concentration of 2.10 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO₂, a maximum one-hour concentration of 0.013 ppm was predicted. This concentration, when added to a background concentration of 0.073 ppm, would equal a total Project concentration of 0.086 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

As noted, short duration (i.e., 1 and 8-hour) exposures associated with both toxic and criteria pollutants are within acceptable limits. As such, less than significant impacts are anticipated to residents who would access and utilize outdoor amenities.

This page intentionally left blank

7 REFERENCES

1. **American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.** *Method of Testing General Ventilation Air Cleaning Devices for Removal by Particle Size*. 2017. ANSI/ASHRAE Standard 52.2.2017.
2. **Urban Crossroads, Inc.** *Crestview Apartments Noise Impact Analysis*. Costa Mesa : s.n., 2019.
3. **California Department of Transportation.** EMFAC Software. [Online] <http://www.dot.ca.gov/hq/env/air/pages/emfac.htm>.
4. —. *Caline3 - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets*. s.l. : Office of Transportation Laboratory, 1979.
5. **U.S. Environmental Protection Agency.** 13.2.1 Paved Roads. [Online] <http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf>.
6. **Office of Environmental Health Hazard Assessment.** IR TOXICS HOT SPOTS PROGRAM RISK ASSESSMENT GUIDELINES. [Online] September 2000. http://www.oehha.org/air/hot_spots/pdf/Stoch4f.pdf.
7. **South Coast Air Quality Management District.** *Final Localized Significance Threshold Methodology*. 2003.
8. **South Coast Air Quality Managment District.** Mobile Source Toxics Analysis. [Online] 2003. http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.

This page intentionally left blank

8 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Crestview Apartments Project. The information contained in this health risk assessment is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 660-1994.

Haseeb Qureshi
Associate Principal
URBAN CROSSROADS, INC.

(949) 660-1994
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

Environmental Site Assessment – American Society for Testing and Materials • June, 2013
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 – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006



This page intentionally left blank

APPENDIX 3.1:

EMISSION RATE CALCULATION WORKSHEETS

This page intentionally left blank

EMFAC2017

Worksheet

(65 mph)

EMFAC2017 Emission Rates

Region Type: County

Region: Riverside (SC)

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Pollutant Classification: Criteria

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed	Population	Wt Frac	CO_RUNEX	CO_RUNEX_AVE	NOX_RUNEX	NOx_RUNEX_AVE	PM10_RUNEX	PM10_RUNEX_AVE	PM10_PMTW	PM10_PMTW_AVE	PM10_PMBW	PM10_PMBW_AVE	PM2_5_RUNEX	PM2_5_RUNEX_AVE	PM2_5_PMTW	PM2_5_PMTW_AVE	PM2_5_PMBW	PM2_5_PMBW_AVE
Riverside	2022	Annual	LDA	GAS	Aggregated	65	772785.866	0.5176	0.4649689	0.24066205	0.0361251	0.01869792	0.0013095	0.00067780	0.0080	0.00414070	0.03675	0.019021336	0.0012041	0.000623218	0.0020	0.001035175	0.01575	0.008152001
Riverside	2022	Annual	LDA	DSL	Aggregated	65	7300.591	0.0049	0.1360851	0.00066542	0.0688731	0.00033677	0.0064704	0.00003164	0.0080	0.00003912	0.03675	0.000179697	0.0061904	0.000030269	0.0020	0.00009779	0.01575	0.000077013
Riverside	2022	Annual	LDA	ELEC	Aggregated	65	12758.747	0.0085	0.0000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.0080	0.00000000	0.03675	0.00000000	0.00000000	0.00000000	0.0000	0.00000000	0.01575	0.000134590
Riverside	2022	Annual	LDT1	DSL	Aggregated	65	39.180	0.0000	1.8027814	0.00004731	1.3202729	0.00003465	0.1753101	0.00000460	0.0080	0.000000021	0.03675	0.000000064	0.1677263	0.000004401	0.0020	0.000000052	0.01575	0.000000413
Riverside	2022	Annual	LDT1	GAS	Aggregated	65	82772.070	0.0554	1.1006140	0.06101595	0.1342932	0.00744496	0.0019634	0.00010885	0.0080	0.00044350	0.03675	0.002037350	0.0018054	0.000100087	0.0020	0.000110876	0.01575	0.000873150
Riverside	2022	Annual	LDT1	ELEC	Aggregated	65	485.075	0.0003	0.0000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.0080	0.00000000	0.03675	0.000000000	0.00000000	0.00000000	0.0000	0.000000000	0.01575	0.000005117
Riverside	2022	Annual	LDT2	DSL	Aggregated	65	1463.535	0.0010	0.0799661	0.00007839	0.0423331	0.00004150	0.0053842	0.00000528	0.0080	0.00000784	0.03675	0.000036023	0.0051513	0.000005049	0.0020	0.000001960	0.01575	0.000015439
Riverside	2022	Annual	LDT2	GAS	Aggregated	65	252998.013	0.1695	0.6766976	0.11466642	0.0811893	0.01375600	0.0013612	0.00023066	0.0080	0.00135560	0.03675	0.006227288	0.0012516	0.000212088	0.0020	0.000338900	0.01575	0.002568838
Riverside	2022	Annual	LDT2	ELEC	Aggregated	65	2319.020	0.0016	0.0000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.0080	0.00000000	0.03675	0.000000000	0.00000000	0.00000000	0.0000	0.000000000	0.01575	0.000024463
Riverside	2022	Annual	LHDT1	DSL	Aggregated	65	20161.772	0.0135	0.6861302	0.00926531	2.8971175	0.03912184	0.0206163	0.00027840	0.0120	0.00016204	0.07644	0.001032224	0.0197244	0.000266353	0.0030	0.000040511	0.03276	0.000442382
Riverside	2022	Annual	LHDT1	GAS	Aggregated	65	20620.883	0.0138	0.7856739	0.01085111	0.2186376	0.00301965	0.0010881	0.00001503	0.0080	0.00011049	0.07644	0.001055729	0.0010004	0.000013817	0.0020	0.000027622	0.03276	0.000452455
Riverside	2022	Annual	LHDT2	DSL	Aggregated	65	7795.761	0.0052	0.5715204	0.00298411	2.3383863	0.01221058	0.0190892	0.00009967	0.0120	0.00006246	0.08918	0.000465640	0.0182634	0.000095360	0.0030	0.000015664	0.03822	0.000199560
Riverside	2022	Annual	LHDT2	GAS	Aggregated	65	3286.375	0.0022	0.4371330	0.00096218	0.1920720	0.00042277	0.00003319	0.00000205	0.0080	0.00001761	0.08918	0.000196295	0.0006569	0.000001886	0.0020	0.000004402	0.03822	0.000084126
Riverside	2022	Annual	MCV	GAS	Aggregated	65	36240.661	0.0243	23.8974258	0.58005843	1.2122672	0.02942517	0.0018504	0.00004491	0.0040	0.00009709	0.01176	0.000285449	0.0017308	0.000042011	0.0010	0.000024273	0.00504	0.000122335
Riverside	2022	Annual	MDV	DSL	Aggregated	65	4324.736	0.0029	0.1216901	0.00035248	0.0531049	0.00015382	0.00044330	0.00001284	0.0080	0.00002317	0.03675	0.000106449	0.0042413	0.000012285	0.0020	0.000005793	0.01575	0.000045621
Riverside	2022	Annual	MDV	GAS	Aggregated	65	208995.205	0.1400	0.8269442	0.11575427	0.1093094	0.01530095	0.0013801	0.00019319	0.0080	0.00111983	0.03675	0.005144204	0.0012691	0.000177652	0.0020	0.000279957	0.01575	0.002204659
Riverside	2022	Annual	MDV	ELEC	Aggregated	65	1262.694	0.0008	0.0000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.0080	0.00000000	0.03675	0.000000000	0.00000000	0.000000000	0.0000	0.000000000	0.01575	0.000013320
Riverside	2022	Annual	MH	DSL	Aggregated	65	2591.606	0.0017	0.3171465	0.00055049	4.2241078	0.00733210	0.1710975	0.00029699	0.0160	0.00002777	0.13034	0.000226241	0.1636959	0.000284139	0.0040	0.000006943	0.05586	0.000090960
Riverside	2022	Annual	MH	GAS	Aggregated	65	6006.899	0.0040	1.6784511	0.00675279	0.4191523	0.00168635	0.0012032	0.00000484	0.0120	0.00004828	0.13034	0.000524388	0.0011063	0.000004451	0.0030	0.000012070	0.05586	0.000224738
Riverside	2022	Annual	MHDT	DSL	Aggregated	65	15610.045	0.0105	0.1721541	0.00179989	2.7394489	0.02864124	0.0422517	0.00044175	0.0120	0.00012546	0.13034	0.0001362719	0.0404239	0.000422636	0.0030	0.000031365	0.05586	0.000584023
Riverside	2022	Annual	MHDT	GAS	Aggregated	65	2027.159	0.0014	22.2375986	0.03019258	4.0150227	0.00545130	0.0010253	0.00000139	0.0120	0.00001629	0.13034	0.000176966	0.0009428	0.000001280	0.0030	0.000004073	0.05586	0.000075843
Riverside	2022	Annual	HHDT	DSL	Aggregated	65	27819.820	0.0186	0.2266584	0.00422329	1.7336669	0.03203312	0.0585680	0.00109129	0.0360	0.00067078	0.06174	0.001150391	0.0560344	0.001044079	0.0090	0.000167695	0.02646	0.000493025
Riverside	2022	Annual	HHDT	GAS	Aggregated	65	7.255	0.0000	1.3133427	0.00000638	0.4733274	0.00000230	0.0009568	0.00000000	0.0200	0.00000010	0.06174	0.000000300	0.0006797	0.000000004	0.0050	0.000000024	0.02646	0.000000129
Riverside	2022	Annual	HHDT	NG	Aggregated	65	316.985	0.0002	3.8379601	0.00081482	1.4151560	0.00030045	0.0043544	0.00000092	0.0200	0.00000425	0.06174	0.000013108	0.0041660	0.000000884	0.0050	0.000001062	0.02646	0.000005618
Riverside	2022	Annual	OBUS	DSL	Aggregated	65	351.644	0.0002	0.1813420	0.00004271	2.2159239	0.00052189	0.0420193	0.00000990	0.0120	0.00000283	0.13034	0.000030698	0.0402015	0.000009468	0.0030	0.00000707	0.05586	0.000013156
Riverside	2022	Annual	OBUS	GAS	Aggregated	65	588.343	0.0004	1.1275205	0.00044430	0.4305041	0.00016964	0.0007495	0.00000030	0.0120	0.00000473	0.13034	0.000051361	0.0006892	0.000000272	0.0030	0.000001182	0.05586	0.000022012
Riverside	2022	Annual	SBUS	DSL	Aggregated	65	1154.013	0.0008	5.6847891	0.00493989	6.3563008	0.00491292	0.0303655	0.00002347	0.0120	0.00000928	0.74480	0.000575671	0.0290519	0.000022455	0.0030	0.000002319	0.3192	0.000246716
Riverside	2022	Annual	SBUS	GAS	Aggregated	65	490.882	0.0003	0.6638093	0.00021825	0.2677076	0.00008802	0.0004085	0.00000013	0.0080	0.00000263	0.74480	0.000244873	0.0003756	0.000000123	0.0020	0.000000658	0.31920	0.000104946
Riverside	2022	Annual	UBUS	DSL	Aggregated	65	1.106	0.0000	0.0182046	0.00000001	0.0135842	0.00000001	0.0135842	0.00000001	0.0120	0.000000001	0.13035	0.000000097	0.0129966	0.000000010	0.0030	0.000000002	0.05587	0.000000041
Riverside	2022	Annual	UBUS	GAS	Aggregated	65	164.455	0.0001	0.0901314	0.00000093	0.0759323	0.00000836	0.00007943	0.00000009	0.0095	0.000000105	0.10510	0.0000011577	0.0007303	0.000000080	0.0024	0.000000063	0.04504	0.000004961
Riverside	2022	Annual	UBUS	ELEC	Aggregated	65	5.058	0.0000	0.0000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.0095	0.000000000	0.000000	0.000000000	0.00000000	0.000000000	0.0000	0.000000000	0.00000	0.000000000
Riverside	2022	Annual	UBUS	NG	Aggregated	65	308.478	0.0002	21.3585672	0.00441287	0.1952836	0.00004035	0.0051217	0.00000106	0.0095	0.00000197	0.10510	0.000021715	0.0049001	0.000001012	0.0024	0.000000493	0.04504	0.00009306
							1493054	1.0		1.191	0.221		0.0036		0.008	0.040		0.0034		0.002		0.017		

EMFAC2017
Worksheet
(65 mph)

EMFAC2017 Emission Rates
Region Type: County
Region: Riverside (SC)
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: TOG GAS

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	TOG_RUNEX (gms/mile)	TOG_RUNEX AVE (gms/mile)
Riverside	2022	Annual	LDA	GAS	Aggregated	65	772785.866	0.5572	0.0114327	0.0064
Riverside	2022	Annual	LDT1	GAS	Aggregated	65	82772.070	0.0597	0.0402512	0.0024
Riverside	2022	Annual	LDT2	GAS	Aggregated	65	25298.013	0.1824	0.0205177	0.0037
Riverside	2022	Annual	LHDT1	GAS	Aggregated	65	20620.883	0.0149	0.0414682	0.0006
Riverside	2022	Annual	LHDT2	GAS	Aggregated	65	3286.375	0.0024	0.0251380	0.0001
Riverside	2022	Annual	MCV	GAS	Aggregated	65	36240.661	0.0261	2.7713100	0.0724
Riverside	2022	Annual	MDV	GAS	Aggregated	65	208995.205	0.1507	0.0282720	0.0043
Riverside	2022	Annual	MH	GAS	Aggregated	65	6006.899	0.0043	0.0772430	0.0003
Riverside	2022	Annual	MHDT	GAS	Aggregated	65	2027.159	0.0015	0.0844137	0.0001
Riverside	2022	Annual	HHDT	GAS	Aggregated	65	7.255	0.0000	0.6228095	0.0000
Riverside	2022	Annual	OBUS	GAS	Aggregated	65	588.343	0.0004	0.0727389	0.0000
Riverside	2022	Annual	SBUS	GAS	Aggregated	65	490.882	0.0004	0.0000000	0.0000
Riverside	2022	Annual	UBUS	GAS	Aggregated	65	164.455	0.0001	0.0070590	0.0000
							1386984	1.0	0.090	

EMFAC2017 Emission Rates
Region Type: County
Region: Riverside (SC)
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: TOG DSL

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	TOG_RUNEX (gms/mile)	TOG_RUNEX AVE (gms/mile)
Riverside	2022	Annual	LDA	DSL	Aggregated	65	7300.591	0.0824	0.0111967	0.0009
Riverside	2022	Annual	LDT1	DSL	Aggregated	65	39.180	0.0004	0.2570578	0.0001
Riverside	2022	Annual	LDT2	DSL	Aggregated	65	1463.535	0.0165	0.0113185	0.0002
Riverside	2022	Annual	LHDT1	DSL	Aggregated	65	20161.772	0.2275	0.0998925	0.0227
Riverside	2022	Annual	LHDT2	DSL	Aggregated	65	7795.761	0.0880	0.0841316	0.0074
Riverside	2022	Annual	MDV	DSL	Aggregated	65	4324.736	0.0488	0.0082200	0.0004
Riverside	2022	Annual	MH	DSL	Aggregated	65	2591.606	0.0292	0.0774660	0.0023
Riverside	2022	Annual	MHDT	DSL	Aggregated	65	15610.045	0.1762	0.0525548	0.0093
Riverside	2022	Annual	HHDT	DSL	Aggregated	65	27819.820	0.3139	0.0424097	0.0133
Riverside	2022	Annual	OBUS	DSL	Aggregated	65	351.644	0.0040	0.0563933	0.0002
Riverside	2022	Annual	SBUS	DSL	Aggregated	65	1154.013	0.0130	0.0566417	0.0007
Riverside	2022	Annual	UBUS	DSL	Aggregated	65	1.106	0.0000	0.0166242	0.0000
							88614	1.0	0.058	

EMFAC2017 Emission Rates
Region Type: County
Region: Riverside (SC)
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: DSL Particulate

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	PM10_RUNEX (gms/mile)	PM10_RUNEX AVE (gms/mile)
Riverside	2022	Annual	LDA	DSL	Aggregated	65	7300.591	0.0824	0.0064704	0.0005
Riverside	2022	Annual	LDT1	DSL	Aggregated	65	39.180	0.0004	0.1753101	0.0001
Riverside	2022	Annual	LDT2	DSL	Aggregated	65	1463.535	0.0165	0.0053842	0.0001
Riverside	2022	Annual	LHDT1	DSL	Aggregated	65	20161.772	0.2275	0.0206163	0.0047
Riverside	2022	Annual	LHDT2	DSL	Aggregated	65	7795.761	0.0880	0.0190892	0.0017
Riverside	2022	Annual	MDV	DSL	Aggregated	65	4324.736	0.0488	0.0044330	0.0002
Riverside	2022	Annual	MH	DSL	Aggregated	65	2591.606	0.0292	0.1710975	0.0050
Riverside	2022	Annual	MHDT	DSL	Aggregated	65	15610.045	0.1762	0.0585680	0.0103
Riverside	2022	Annual	HHDT	DSL	Aggregated	65	27819.820	0.3139	0.0422517	0.0133
Riverside	2022	Annual	OBUS	DSL	Aggregated	65	351.644	0.0040	0.0420193	0.0002
Riverside	2022	Annual	SBUS	DSL	Aggregated	65	1154.013	0.0130	0.0303655	0.0004
Riverside	2022	Annual	UBUS	DSL	Aggregated	65	1.106	0.0000	0.0135842	0.0000
							88614	1.0	0.036	

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

CO Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	7792
Pollutant Mass Emission Rate (gr/mi)	1.191

$Emission\ Rate\ (gr/sec) = ((Mass\ Emission\ Rate \times Volume/Baseline)/(1609.3\ m/mile) \times (3600\ sec/hr)) \times (Link\ Length)$

Pollutant Emission Rate (gr/sec)	2.03473
Pollutant Emission Rate (gr/sec/source)	5.81E-02

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

NOx Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	7792
Pollutant Mass Emission Rate (gr/mi)	0.221

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	0.37822
Pollutant Emission Rate (gr/sec/source)	1.08E-02

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

PM10 Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	7792
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2017 Emissions Run (g/mi)	0.0055
Emfac2017 Emissions TW/BW (g/mi)	0.047
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.122

*For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x
(Road Surface Silt Loading)^{0.91} x (Gross Vehicle Weight)^{1.02}) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)*

PM10 Reentrainment Emission Rate (gr/sec)	0.208325
PM10 Reentrainment Emission Rate (gr/sec/source)	5.95E-03

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

PM2.5 Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	7792
Particle Size Multiplier (g/mi)	0.25
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2017 Emissions Run (g/mi)	0.0052
Emfac2017 Emissions TW/BW (g/mi)	0.019
PM2.5 Reentrainment Mass Emission Rate (gr/mi)	0.042

*For PM2.5 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM2.5 Base Emission Factor) x
(Road Surface Silt Loading)^{0.91} x (Gross Vehicle Weight)^{1.02}) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)*

PM2.5 Reentrainment Emission Rate (gr/sec)	0.070995
PM2.5 Reentrainment Emission Rate (gr/sec/source)	2.03E-03

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

TOG GAS Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	7486
Pollutant Mass Emission Rate (gr/mi)	0.003863

$$Emission\ Rate\ (gr/sec) = ((Mass\ Emission\ Rate \times Volume/Baseline)/(1609.3\ m/mile) \times (3600\ sec/hr)) \times (Link\ Length)$$

Pollutant Emission Rate (gr/sec)	0.00634
Pollutant Emission Rate (gr/sec/source)	1.81E-04

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

TOG DSL Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	306
Pollutant Mass Emission Rate (gr/mi)	0.014069

$$Emission\ Rate\ (gr/sec) = ((Mass\ Emission\ Rate \times Volume/Baseline)/(1609.3\ m/mile) \times (3600\ sec/hr)) \times (Link\ Length)$$

Pollutant Emission Rate (gr/sec)	0.00094
Pollutant Emission Rate (gr/sec/source)	2.69E-05

On-Road Mobile Sources
Emission Rate Computation

I-215/SR-60 Freeway

DSL Particulate Emissions

Number of Sources	35
Link Length (meters)	1270
Volume/Baseline (VPH)	306
Pollutant Mass Emission Rate (gr/mi)	0.036

$$Emission\ Rate\ (gr/sec) = ((Mass\ Emission\ Rate \times Volume/Baseline)/(1609.3\ m/mile) \times (3600\ sec/hr)) \times (Link\ Length)$$

Pollutant Emission Rate (gr/sec)	0.00244
Pollutant Emission Rate (gr/sec/source)	6.97E-05

All
DSL

1492740
58533

Diesel Fleet Mix (weight fraction)

0.0392

Link Counts

AADT

VPH
all

VPH
gas

VPH
diesel

I-215/SR-60 Freeway

187000

7792

7486

306

APPENDIX 3.2:

RISK CALCULATION WORKSHEETS

This page intentionally left blank

Table A1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
30 Year Exposure Scenario / Maximum Residential Receptor

Source	Concentration		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Hazards / Toxicological Endpoints*									
	(ug/m3)	(mg/m3)			URF (ug/m3)	CPF (mg/kg/day)	RISK	REL (ug/m3)	RfD (mg/kg/day)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
Freeway	0.13426	1.3E-04	4.67E-01	Benzene	2.9E-05	1.0E-01	7.5E-07	3.0E+00	8.6E-04			2.0E-02					
			3.28E-01	Formaldehyde	6.0E-06	2.1E-02	1.1E-07	9.0E+00	2.6E-03	4.7E-03							
			1.06E-01	1,3-Butadiene	1.7E-04	6.0E-01	9.9E-07	2.0E+00	5.7E-04							6.8E-03	
			7.40E-02	Acetaldehyde	2.7E-06	1.0E-02	1.2E-08	1.4E+02	4.0E-02	6.8E-05							
			2.50E-02	Acrolein				3.5E-01	1.0E-04	9.2E-03							
	0.01292	1.3E-05	1.00E+00	Diesel Particulates	3.0E-04	1.1E+00	1.6E-06	5.0E+00	1.4E-03	2.5E-03							
Total					3.45E-06			1.6E-02			0.0E+00	2.0E-02	0.0E+00	0.0E+00	0.0E+00	6.8E-03	0.0E+00

* Key to Toxicological Endpoints

RESP Respiratory System
CNS/PNS Central/Peripheral Nervous System
CV/BL Cardiovascular/Blood System
IMMUN Immune System
KIDN Kidney
GI/LV Gastrointestinal System/Liver
REPRO Reproductive System (e.g., teratogenic and developmental effects)
EYES Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	30
inhalation rate (m3/day)	20
average body weight (kg)	70
averaging time _(cancer) (days)	25550
averaging time _(noncancer) (days)	10950

Table A2
Quantification of Noncarcinogenic Acute Hazards
1-Hour Exposure Scenario / Maximum Exposed Receptor

Source	Concentration (ug/m3)	Weight Fraction	Contaminant	Noncarcinogenic Hazards / Toxicological Endpoints*								
				REL (ug/m3) (e)	RESP (f)	CNS/PNS (g)	CV/BL (h)	IMMUN (i)	KIDN (j)	GI/LV (k)	REPRO (l)	EYES (m)
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Freeway TOG	0.46463	4.67E-01	Benzene	2.7E+01	7.3E-05 4.6E-03		8.0E-03	8.0E-03			8.0E-03	2.8E-03
		3.28E-01	Formaldehyde	5.5E+01							7.5E-05	
		1.06E-01	1,3-Butadiene	6.6E+02								
		7.40E-02	Acetaldehyde	4.7E+02							7.3E-05	
		2.50E-02	Acrolein	2.5E+00							4.6E-03	
Freeway Diesel/TOG	0.06883	8.20E-02	Benzene	2.7E+01	4.4E-05		2.1E-04	2.1E-04			2.1E-04	7.6E-04
		6.07E-01	Formaldehyde	5.5E+01							8.3E-07	
		8.00E-03	1,3-Butadiene	6.6E+02								
		3.03E-01	Acetaldehyde	4.7E+02							4.4E-05	
Total					4.8E-03	0.0E+00	8.2E-03	8.2E-03	0.0E+00	0.0E+00	8.3E-03	8.3E-03

* Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g., teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Table A3
Quantification of Noncarcinogenic Acute Hazards
8-Hour Exposure Scenario / Maximum Exposed Receptor

Source	Concentration (ug/m3)	Weight Fraction	Contaminant	Noncarcinogenic Hazards / Toxicological Endpoints*								
				REL (ug/m3)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Freeway TOG	0.34167	3.28E-01	Formaldehyde	9.0E+00	1.2E-02							
		1.06E-01	1,3-Butadiene	9.0E+00						4.0E-03		
		7.40E-02	Acetaldehyde	3.0E+02	8.4E-05							
		2.50E-02	Acrolein	7.0E-01	1.2E-02							
Freeway Diesel/TOG	0.05066	6.07E-01	Formaldehyde	9.0E+00	3.4E-03							
		8.00E-03	1,3-Butadiene	9.0E+00						4.5E-05		
		3.03E-01	Acetaldehyde	3.0E+02	5.1E-05							
Total					2.8E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	4.1E-03	0.0E+00

* Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g., teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

APPENDIX 3.3:

AERMOD MODEL INPUT/OUTPUT FILE

This page intentionally left blank

CO

**

**

** AERMOD INPUT PRODUCED BY:

** AERMOD VIEW VER. 9.7.0

** LAKES ENVIRONMENTAL SOFTWARE INC.

** DATE: 9/17/2019

** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ADI

**

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC

MODELOPT DFAULT CONC

AVERTIME 1 8

URBANOPT 2189641

POLLUTID CO

RUNORNOT RUN

ERRORFIL CO.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

**

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 2.03473

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

CO

```

** 470813.794, 3757852.980, 397.85, 3.49, 16.74
** 470925.656, 3757855.794, 405.26, 3.49, 16.74
** 471025.559, 3757852.277, 411.05, 3.49, 16.74
** 471105.762, 3757833.281, 414.24, 3.49, 16.74
** 471145.160, 3757822.025, 415.90, 3.49, 16.74
** 471200.036, 3757800.215, 417.93, 3.49, 16.74
** 471303.456, 3757745.339, 421.00, 3.49, 16.74
** 471435.018, 3757619.406, 420.70, 3.49, 16.74
** 471617.937, 3757455.482, 426.96, 3.49, 16.74
** 471722.764, 3757300.000, 436.09, 3.49, 16.74

```

```

** -----
LOCATION L0000001    VOLUME  470689.523 3757857.646 392.70
LOCATION L0000002    VOLUME  470725.209 3757852.906 393.32
LOCATION L0000003    VOLUME  470760.896 3757848.167 394.45
LOCATION L0000004    VOLUME  470796.732 3757851.366 396.67
LOCATION L0000005    VOLUME  470832.650 3757853.455 398.77
LOCATION L0000006    VOLUME  470868.639 3757854.360 401.34
LOCATION L0000007    VOLUME  470904.628 3757855.265 403.71
LOCATION L0000008    VOLUME  470940.612 3757855.268 405.71
LOCATION L0000009    VOLUME  470976.589 3757854.001 408.28
LOCATION L0000010    VOLUME  471012.567 3757852.734 410.59
LOCATION L0000011    VOLUME  471047.940 3757846.976 411.26
LOCATION L0000012    VOLUME  471082.971 3757838.679 413.04
LOCATION L0000013    VOLUME  471117.856 3757829.826 415.15
LOCATION L0000014    VOLUME  471152.226 3757819.216 416.69
LOCATION L0000015    VOLUME  471185.681 3757805.920 418.12
LOCATION L0000016    VOLUME  471218.191 3757790.582 418.09
LOCATION L0000017    VOLUME  471249.992 3757773.708 418.04
LOCATION L0000018    VOLUME  471281.792 3757756.834 421.00
LOCATION L0000019    VOLUME  471311.746 3757737.404 421.00
LOCATION L0000020    VOLUME  471337.752 3757712.511 420.97
LOCATION L0000021    VOLUME  471363.758 3757687.617 420.94
LOCATION L0000022    VOLUME  471389.764 3757662.724 420.79
LOCATION L0000023    VOLUME  471415.770 3757637.830 420.12
LOCATION L0000024    VOLUME  471441.985 3757613.162 421.00
LOCATION L0000025    VOLUME  471468.795 3757589.136 421.18
LOCATION L0000026    VOLUME  471495.604 3757565.111 421.89
LOCATION L0000027    VOLUME  471522.414 3757541.085 423.20
LOCATION L0000028    VOLUME  471549.224 3757517.059 424.96
LOCATION L0000029    VOLUME  471576.034 3757493.034 424.62
LOCATION L0000030    VOLUME  471602.844 3757469.008 426.36
LOCATION L0000031    VOLUME  471626.732 3757442.437 427.54
LOCATION L0000032    VOLUME  471646.857 3757412.588 429.93
LOCATION L0000033    VOLUME  471666.982 3757382.738 431.42
LOCATION L0000034    VOLUME  471687.106 3757352.889 433.04
LOCATION L0000035    VOLUME  471707.231 3757323.039 435.04

```

```

** END OF LINE VOLUME SOURCE ID = SLINE1

```

```

** SOURCE PARAMETERS **

```

CO

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM L0000001	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000002	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000003	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000004	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000005	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000006	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000007	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000008	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000009	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000010	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000011	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000012	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000013	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000014	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000015	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000016	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000017	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000018	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000019	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000020	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000021	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000022	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000023	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000024	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000025	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000026	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000027	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000028	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000029	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000030	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000031	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000032	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000033	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000034	0.0581351429	3.49	16.74	3.25
SRCPARAM L0000035	0.0581351429	3.49	16.74	3.25

**

URBANSRC ALL
CONCUNIT 873.2 G/S PPM
SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING

CO

INCLUDED CO.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING

SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC

PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL

SURFDATA 3171 2012

UAIRDATA 3190 2012

PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 1 1ST

RECTABLE 8 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 1 ALL 1ST CO.AD\01H1GALL.PLT 31

PLOTFILE 8 ALL 1ST CO.AD\08H1GALL.PLT 32

SUMMFILE 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 159 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50

CO
ME W187 159 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 1
*** MODELOPTs: RegDFAULT CONC ELEV 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 35 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

CCVR_Sub - Meteorological data includes CCVR substitutions

TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: CO

CO

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

**This Run Includes: 35 Source(s); 1 Source Group(s); and 37 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 35 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 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) = 245.00 ; Decay
Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = G/S ;
Emission Rate Unit Factor = 873.20
Output Units = PPM

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

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: CO.ERR

CO

**File for Summary of Results: CO.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 2

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.	
SOURCE		EMISSION	RATE						
SZ	SOURCE	PART.	(USER	UNITS)	X	Y	ELEV.	HEIGHT	SY
ID		SCALAR	VARY						
(METERS)		CATS.			(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
		BY							
L0000001		0	0.58135E-01	470689.5	3757857.6	392.7	3.49	16.74	
3.25	YES								
L0000002		0	0.58135E-01	470725.2	3757852.9	393.3	3.49	16.74	
3.25	YES								
L0000003		0	0.58135E-01	470760.9	3757848.2	394.4	3.49	16.74	
3.25	YES								
L0000004		0	0.58135E-01	470796.7	3757851.4	396.7	3.49	16.74	
3.25	YES								
L0000005		0	0.58135E-01	470832.6	3757853.5	398.8	3.49	16.74	
3.25	YES								
L0000006		0	0.58135E-01	470868.6	3757854.4	401.3	3.49	16.74	
3.25	YES								
L0000007		0	0.58135E-01	470904.6	3757855.3	403.7	3.49	16.74	
3.25	YES								
L0000008		0	0.58135E-01	470940.6	3757855.3	405.7	3.49	16.74	
3.25	YES								
L0000009		0	0.58135E-01	470976.6	3757854.0	408.3	3.49	16.74	
3.25	YES								
L0000010		0	0.58135E-01	471012.6	3757852.7	410.6	3.49	16.74	
3.25	YES								
L0000011		0	0.58135E-01	471047.9	3757847.0	411.3	3.49	16.74	
3.25	YES								
L0000012		0	0.58135E-01	471083.0	3757838.7	413.0	3.49	16.74	
3.25	YES								
L0000013		0	0.58135E-01	471117.9	3757829.8	415.2	3.49	16.74	

CO

3.25	YES						
L0000014		0	0.58135E-01	471152.2	3757819.2	416.7	16.74
3.25	YES						
L0000015		0	0.58135E-01	471185.7	3757805.9	418.1	16.74
3.25	YES						
L0000016		0	0.58135E-01	471218.2	3757790.6	418.1	16.74
3.25	YES						
L0000017		0	0.58135E-01	471250.0	3757773.7	418.0	16.74
3.25	YES						
L0000018		0	0.58135E-01	471281.8	3757756.8	421.0	16.74
3.25	YES						
L0000019		0	0.58135E-01	471311.7	3757737.4	421.0	16.74
3.25	YES						
L0000020		0	0.58135E-01	471337.8	3757712.5	421.0	16.74
3.25	YES						
L0000021		0	0.58135E-01	471363.8	3757687.6	420.9	16.74
3.25	YES						
L0000022		0	0.58135E-01	471389.8	3757662.7	420.8	16.74
3.25	YES						
L0000023		0	0.58135E-01	471415.8	3757637.8	420.1	16.74
3.25	YES						
L0000024		0	0.58135E-01	471442.0	3757613.2	421.0	16.74
3.25	YES						
L0000025		0	0.58135E-01	471468.8	3757589.1	421.2	16.74
3.25	YES						
L0000026		0	0.58135E-01	471495.6	3757565.1	421.9	16.74
3.25	YES						
L0000027		0	0.58135E-01	471522.4	3757541.1	423.2	16.74
3.25	YES						
L0000028		0	0.58135E-01	471549.2	3757517.1	425.0	16.74
3.25	YES						
L0000029		0	0.58135E-01	471576.0	3757493.0	424.6	16.74
3.25	YES						
L0000030		0	0.58135E-01	471602.8	3757469.0	426.4	16.74
3.25	YES						
L0000031		0	0.58135E-01	471626.7	3757442.4	427.5	16.74
3.25	YES						
L0000032		0	0.58135E-01	471646.9	3757412.6	429.9	16.74
3.25	YES						
L0000033		0	0.58135E-01	471667.0	3757382.7	431.4	16.74
3.25	YES						
L0000034		0	0.58135E-01	471687.1	3757352.9	433.0	16.74
3.25	YES						
L0000035		0	0.58135E-01	471707.2	3757323.0	435.0	16.74

3.25 YES
 *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***

CO
*** 11:02:53

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

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID

SOURCE IDs

ALL L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 ,

L0000014 L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
, L0000015 , L0000016 ,

L0000022 L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
, L0000023 , L0000024 ,

L0000030 L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
, L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 ,
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:02:53

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

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID URBAN POP

SOURCE IDs

2189641. L0000001 , L0000002 , L0000003 , L0000004 ,
L0000005 , L0000006 , L0000007 ,
L0000008 ,

L0000014 L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
, L0000015 , L0000016 ,

CO

L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 ,

L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
L0000030 , L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 ,
▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0); (471080.8,
3757752.9, 427.5, 939.0, 0.0);
(471066.4, 3757749.3, 431.0, 939.0, 0.0); (471066.8,
3757738.5, 429.9, 939.0, 0.0);
(471083.3, 3757744.1, 425.7, 939.0, 0.0); (471100.2,
3757749.7, 420.2, 939.0, 0.0);
(471008.4, 3757750.3, 427.2, 939.0, 0.0); (471023.7,
3757748.1, 428.0, 939.0, 0.0);
(471009.3, 3757741.0, 426.4, 939.0, 0.0); (471026.5,
3757734.1, 426.5, 939.0, 0.0);
(471118.0, 3757733.3, 415.9, 939.0, 0.0); (471144.9,
3757690.2, 412.9, 939.0, 0.0);
(471176.0, 3757636.4, 412.8, 939.0, 0.0); (471182.6,
3757626.8, 410.6, 939.0, 0.0);
(471189.1, 3757614.9, 408.2, 939.0, 0.0); (471195.1,
3757607.1, 407.6, 939.0, 0.0);
(471179.0, 3757583.2, 407.8, 939.0, 0.0); (471161.0,
3757576.6, 407.1, 939.0, 0.0);
(471134.1, 3757579.0, 408.2, 939.0, 0.0); (471064.8,
3757654.3, 408.3, 939.0, 0.0);
(471060.0, 3757663.3, 410.2, 939.0, 0.0); (471085.7,
3757611.3, 406.0, 939.0, 0.0);
(471088.1, 3757588.0, 403.2, 939.0, 0.0); (471097.1,
3757570.6, 401.2, 939.0, 0.0);
(471005.0, 3757599.3, 397.9, 939.0, 0.0); (471006.8,
3757635.8, 402.7, 939.0, 0.0);
(470982.8, 3757698.0, 413.2, 939.0, 0.0); (471031.9,
3757694.4, 418.2, 939.0, 0.0);

```

                                CO
      ( 471009.2, 3757555.7,    396.0,    939.0,    0.0);      ( 471036.1,
3757657.3,    407.4,    939.0,    0.0);
      ( 471053.4, 3757562.8,    397.5,    939.0,    0.0);      ( 471107.2,
3757671.1,    409.3,    939.0,    0.0);
      ( 471017.5, 3757717.1,    423.7,    939.0,    0.0);      ( 471004.4,
3757696.2,    419.4,    939.0,    0.0);
      ( 471129.3, 3757678.8,    410.4,    939.0,    0.0);      ( 471097.1,
3757724.3,    418.7,    939.0,    0.0);
      ( 471075.5, 3757717.1,    424.4,    939.0,    0.0);

```

```

^ *** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
                                ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
                                ***      11:02:53

```

```

                                PAGE 6
*** MODELOPTs:   RegDEFAULT CONC ELEV 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 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 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,

CO

10.80,

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 7

*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL

DATA ***

Surface file: ..\KRAL_V9_ADJU\KRAL_V9.SFC

Met Version: 16216

Profile file: ..\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	
1.00	2.52	77.	10.1	285.9	2.0									
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	
1.00	2.30	80.	10.1	285.4	2.0									
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	
1.00	1.93	79.	10.1	287.0	2.0									
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	
1.00	1.96	77.	10.1	284.2	2.0									
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	
0.53	1.89	77.	10.1	288.1	2.0									
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	
0.31	2.10	81.	10.1	289.2	2.0									

CO													
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40
0.24	1.99	101.			10.1	296.4	2.0						
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40
0.21	3.68	78.			10.1	298.8	2.0						
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40
0.20	2.89	68.			10.1	300.4	2.0						
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40
0.20	2.57	64.			10.1	302.5	2.0						
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40
0.22	3.37	63.			10.1	303.1	2.0						
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40
0.25	3.59	62.			10.1	302.5	2.0						
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40
0.34	3.76	69.			10.1	300.9	2.0						
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40
0.62	3.03	59.			10.1	297.5	2.0						
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.			10.1	295.4	2.0						
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.			10.1	292.0	2.0						
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.			10.1	292.5	2.0						
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.			10.1	290.9	2.0						
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.			10.1	290.4	2.0						
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.			10.1	289.2	2.0						
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.			10.1	288.8	2.0						

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002

CO

, L0000003	, L0000004	, L0000005	, L0000008	, L0000009	, L0000010
	L0000006	, L0000007			
, L0000011	, L0000012	, L0000013			
	L0000014	, L0000015	, L0000016	, L0000017	, L0000018
, L0000019	, L0000020	, L0000021			
	L0000022	, L0000023	, L0000024	, L0000025	, L0000026
, L0000027	, L0000028	, . . .			

*** DISCRETE CARTESIAN RECEPTOR POINTS

		** CONC OF CO		IN PPM	
**					
X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)		X-COORD (M)
Y-COORD (M)	CONC	(YYMMDDHH)			

471098.69	3757757.68	0.13021	(13072706)		471080.76
3757752.90	0.11086	(12060406)			
471066.41	3757749.31	0.09676	(12060406)		471066.77
3757738.46	0.09173	(13051106)			
471083.32	3757744.08	0.10543	(12060406)		471100.17
3757749.70	0.12439	(13072706)			
471008.41	3757750.32	0.09098	(13051106)		471023.70
3757748.14	0.09128	(13051106)			
471009.34	3757740.96	0.08855	(13051106)		471026.51
3757734.09	0.08810	(13051106)			
471117.99	3757733.26	0.11134	(13063022)		471144.90
3757690.21	0.08442	(15080601)			
471175.99	3757636.40	0.06975	(12080621)		471182.57
3757626.83	0.06320	(12080621)			
471189.14	3757614.87	0.05591	(12080624)		471195.12
3757607.10	0.05389	(12080621)			
471178.98	3757583.18	0.04935	(13090421)		471161.04
3757576.60	0.04666	(13090421)			
471134.13	3757578.99	0.04781	(16082823)		471064.77
3757654.33	0.06030	(13090421)			
471059.99	3757663.30	0.06670	(13090421)		471085.70
3757611.28	0.04701	(13090421)			
471088.09	3757587.96	0.03928	(13062606)		471097.06
3757570.62	0.03720	(13062606)			
471004.98	3757599.32	0.03579	(13062606)		471006.77
3757635.80	0.04350	(16061922)			
470982.85	3757697.99	0.07716	(12081622)		471031.88
3757694.40	0.08143	(12072106)			
471009.16	3757555.67	0.03075	(13062606)		471036.07
3757657.32	0.05890	(13090421)			

Page 15

CO

3757690.21	0.06626 (16121208)	
471175.99	3757636.40	0.05290c (13012708) 471182.57
3757626.83	0.04928c (13012708)	
471189.14	3757614.87	0.04600c (12121708) 471195.12
3757607.10	0.04507c (12121708)	
471178.98	3757583.18	0.03940c (12121708) 471161.04
3757576.60	0.03690c (12121708)	
471134.13	3757578.99	0.03586c (13012708) 471064.77
3757654.33	0.04541c (13012708)	
471059.99	3757663.30	0.04859c (13012708) 471085.70
3757611.28	0.03668c (13012708)	
471088.09	3757587.96	0.03334c (12121708) 471097.06
3757570.62	0.03159c (12121708)	
471004.98	3757599.32	0.03040c (12121708) 471006.77
3757635.80	0.03573c (12121708)	
470982.85	3757697.99	0.05136 (16010924) 471031.88
3757694.40	0.05280 (12031708)	
471009.16	3757555.67	0.02612c (12121708) 471036.07
3757657.32	0.04404c (13012708)	
471053.41	3757562.85	0.02846c (12121708) 471107.23
3757671.08	0.05336c (13012708)	
471017.53	3757717.12	0.05776 (16011524) 471004.38
3757696.19	0.05236 (16011524)	
471129.35	3757678.85	0.05760c (13012708) 471097.06
3757724.29	0.07594c (13012708)	
471075.53	3757717.12	0.06329 (16011524)

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:02:53

PAGE 10

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR

RESULTS ***

** CONC OF CO IN PPM

**

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

CO

ALL HIGH 1ST HIGH VALUE IS 0.13021 ON 13072706: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 8-HR

RESULTS ***

** CONC OF CO IN PPM

**

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

ALL HIGH 1ST HIGH VALUE IS 0.09575 ON 16121208: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\CO\CO.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:02:53

PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

CO

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

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

***** WARNING MESSAGES *****
ME W186 159 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
 0.50
ME W187 159 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**

** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.7.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 9/17/2019
** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\NO2\NO2.ADI
**

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING
 TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\NO2\NO2.ISC
 MODELOPT DFAULT CONC ARM2
 AVERTIME 1

CO

URBANOPT 2189641

POLLUTID NO2

RUNORNOT RUN

** NO2 CONVERSION OPTIONS

ARMRATIO 0.500 0.900

ERRORFIL NO2.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

** -----

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 0.37822

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

** 470813.794, 3757852.980, 397.85, 3.49, 16.74

** 470925.656, 3757855.794, 405.26, 3.49, 16.74

** 471025.559, 3757852.277, 411.05, 3.49, 16.74

** 471105.762, 3757833.281, 414.24, 3.49, 16.74

** 471145.160, 3757822.025, 415.90, 3.49, 16.74

** 471200.036, 3757800.215, 417.93, 3.49, 16.74

** 471303.456, 3757745.339, 421.00, 3.49, 16.74

** 471435.018, 3757619.406, 420.70, 3.49, 16.74

** 471617.937, 3757455.482, 426.96, 3.49, 16.74

** 471722.764, 3757300.000, 436.09, 3.49, 16.74

** -----

LOCATION L0000001	VOLUME	470689.523	3757857.646	392.70
LOCATION L0000002	VOLUME	470725.209	3757852.906	393.32
LOCATION L0000003	VOLUME	470760.896	3757848.167	394.45
LOCATION L0000004	VOLUME	470796.732	3757851.366	396.67
LOCATION L0000005	VOLUME	470832.650	3757853.455	398.77
LOCATION L0000006	VOLUME	470868.639	3757854.360	401.34
LOCATION L0000007	VOLUME	470904.628	3757855.265	403.71
LOCATION L0000008	VOLUME	470940.612	3757855.268	405.71

CO

LOCATION L0000009	VOLUME	470976.589	3757854.001	408.28
LOCATION L0000010	VOLUME	471012.567	3757852.734	410.59
LOCATION L0000011	VOLUME	471047.940	3757846.976	411.26
LOCATION L0000012	VOLUME	471082.971	3757838.679	413.04
LOCATION L0000013	VOLUME	471117.856	3757829.826	415.15
LOCATION L0000014	VOLUME	471152.226	3757819.216	416.69
LOCATION L0000015	VOLUME	471185.681	3757805.920	418.12
LOCATION L0000016	VOLUME	471218.191	3757790.582	418.09
LOCATION L0000017	VOLUME	471249.992	3757773.708	418.04
LOCATION L0000018	VOLUME	471281.792	3757756.834	421.00
LOCATION L0000019	VOLUME	471311.746	3757737.404	421.00
LOCATION L0000020	VOLUME	471337.752	3757712.511	420.97
LOCATION L0000021	VOLUME	471363.758	3757687.617	420.94
LOCATION L0000022	VOLUME	471389.764	3757662.724	420.79
LOCATION L0000023	VOLUME	471415.770	3757637.830	420.12
LOCATION L0000024	VOLUME	471441.985	3757613.162	421.00
LOCATION L0000025	VOLUME	471468.795	3757589.136	421.18
LOCATION L0000026	VOLUME	471495.604	3757565.111	421.89
LOCATION L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION L0000035	VOLUME	471707.231	3757323.039	435.04

** END OF LINE VOLUME SOURCE ID = SLINE1

** SOURCE PARAMETERS **

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM L0000001	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000002	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000003	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000004	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000005	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000006	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000007	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000008	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000009	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000010	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000011	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000012	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000013	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000014	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000015	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000016	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000017	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000018	0.0108062857	3.49	16.74	3.25

		CO		
SRCPARAM L0000019	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000020	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000021	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000022	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000023	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000024	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000025	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000026	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000027	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000028	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000029	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000030	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000031	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000032	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000033	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000034	0.0108062857	3.49	16.74	3.25
SRCPARAM L0000035	0.0108062857	3.49	16.74	3.25

**

 URBANSRC ALL
 CONCUNIT 531.5 G/S PPM
 SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING
 INCLUDED NO2.ROU
 RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING
 SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC
 PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL
 SURFDATA 3171 2012
 UAIRDATA 3190 2012
 PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

CO

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 1 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 1 ALL 1ST NO2.AD\01H1GALL.PLT 31

SUMMFILE 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 161 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50

ME W187 161 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\NO2\NO2.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:04:24

PAGE 1

*** MODELOPTs: RegDFAULT CONC ELEV ARM2 URBAN ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY

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

CO

-- 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 35 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. Ambient Ratio Method Ver 2 (ARM2) Used for NO2 Conversion
with a Minimum NO2/NOx Ratio of 0.500
and a Maximum NO2/NOx Ratio of 0.900
7. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:

ADJ_U* - Use ADJ_U* option for SBL in AERMET

CCVR_Sub - Meteorological data includes CCVR substitutions

TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: NO2

**Note that special processing requirements apply for the 1-hour NO2 NAAQS - check available guidance.

Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years modeled.

For annual NO2 NAAQS modeling, the multi-year maximum of PERIOD values can be simulated using the MULTYEAR keyword.

Multi-year PERIOD and 1-hour values should only be done in a single model run using the MULTYEAR option with a
single multi-year meteorological data file using STARTEND keyword.

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

**This Run Includes: 35 Source(s); 1 Source Group(s); and 37
Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)

CO
 and: 35 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 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) = 245.00 ; Decay
 Coef. = 0.000 ; Rot. Angle = 0.0
 Emission Units = G/S ;
 Emission Rate Unit Factor = 531.50
 Output Units = PPM

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

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: NO2.ERR

**File for Summary of Results: NO2.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\NO2\NO2.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:04:24

CO

PAGE 2

*** MODELOPTs: RegDFAULT CONC ELEV ARM2 URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
SOURCE		EMISSION	RATE					
SZ	SOURCE	PART.	(USER	UNITS)	X	Y	ELEV.	HEIGHT
ID		SCALAR	VARY		(METERS)	(METERS)	(METERS)	(METERS)
(METERS)		CATS.	BY					(METERS)
L0000001		0	0.10806E-01	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.10806E-01	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.10806E-01	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.10806E-01	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.10806E-01	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.10806E-01	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							
L0000007		0	0.10806E-01	470904.6	3757855.3	403.7	3.49	16.74
3.25	YES							
L0000008		0	0.10806E-01	470940.6	3757855.3	405.7	3.49	16.74
3.25	YES							
L0000009		0	0.10806E-01	470976.6	3757854.0	408.3	3.49	16.74
3.25	YES							
L0000010		0	0.10806E-01	471012.6	3757852.7	410.6	3.49	16.74
3.25	YES							
L0000011		0	0.10806E-01	471047.9	3757847.0	411.3	3.49	16.74
3.25	YES							
L0000012		0	0.10806E-01	471083.0	3757838.7	413.0	3.49	16.74
3.25	YES							
L0000013		0	0.10806E-01	471117.9	3757829.8	415.2	3.49	16.74
3.25	YES							
L0000014		0	0.10806E-01	471152.2	3757819.2	416.7	3.49	16.74
3.25	YES							
L0000015		0	0.10806E-01	471185.7	3757805.9	418.1	3.49	16.74
3.25	YES							
L0000016		0	0.10806E-01	471218.2	3757790.6	418.1	3.49	16.74
3.25	YES							
L0000017		0	0.10806E-01	471250.0	3757773.7	418.0	3.49	16.74

CO

3.25	YES							
L0000018		0	0.10806E-01	471281.8	3757756.8	421.0	3.49	16.74
3.25	YES							
L0000019		0	0.10806E-01	471311.7	3757737.4	421.0	3.49	16.74
3.25	YES							
L0000020		0	0.10806E-01	471337.8	3757712.5	421.0	3.49	16.74
3.25	YES							
L0000021		0	0.10806E-01	471363.8	3757687.6	420.9	3.49	16.74
3.25	YES							
L0000022		0	0.10806E-01	471389.8	3757662.7	420.8	3.49	16.74
3.25	YES							
L0000023		0	0.10806E-01	471415.8	3757637.8	420.1	3.49	16.74
3.25	YES							
L0000024		0	0.10806E-01	471442.0	3757613.2	421.0	3.49	16.74
3.25	YES							
L0000025		0	0.10806E-01	471468.8	3757589.1	421.2	3.49	16.74
3.25	YES							
L0000026		0	0.10806E-01	471495.6	3757565.1	421.9	3.49	16.74
3.25	YES							
L0000027		0	0.10806E-01	471522.4	3757541.1	423.2	3.49	16.74
3.25	YES							
L0000028		0	0.10806E-01	471549.2	3757517.1	425.0	3.49	16.74
3.25	YES							
L0000029		0	0.10806E-01	471576.0	3757493.0	424.6	3.49	16.74
3.25	YES							
L0000030		0	0.10806E-01	471602.8	3757469.0	426.4	3.49	16.74
3.25	YES							
L0000031		0	0.10806E-01	471626.7	3757442.4	427.5	3.49	16.74
3.25	YES							
L0000032		0	0.10806E-01	471646.9	3757412.6	429.9	3.49	16.74
3.25	YES							
L0000033		0	0.10806E-01	471667.0	3757382.7	431.4	3.49	16.74
3.25	YES							
L0000034		0	0.10806E-01	471687.1	3757352.9	433.0	3.49	16.74
3.25	YES							
L0000035		0	0.10806E-01	471707.2	3757323.0	435.0	3.49	16.74

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:04:24

PAGE 3
 *** MODELOPTs: RegDFAULT CONC ELEV ARM2 URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

CO

SRCGROUP ID

SOURCE IDs

ALL L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 ,

L0000014 L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
 , L0000015 , L0000016 ,

L0000022 L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
 , L0000023 , L0000024 ,

L0000030 L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
 , L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 ,
▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\NO2\NO2.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:04:24

PAGE 4

*** MODELOPTs: RegDFault CONC ELEV ARM2 URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID URBAN POP

SOURCE IDs

L0000005 2189641. L0000001 , L0000002 , L0000003 , L0000004 ,
L0000008 , L0000006 , L0000007 ,
 ,

L0000014 L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
 , L0000015 , L0000016 ,

L0000022 L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
 , L0000023 , L0000024 ,

L0000030 L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
 , L0000031 , L0000032 ,

L0000033 , L0000034 , L0000035 ,

CO
 ▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:04:24

PAGE 5
 *** MODELOPTs: RegDFAULT CONC ELEV ARM2 URBAN ADJ_U*

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8,
3757752.9, 427.5, 939.0, 0.0);	
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8,
3757738.5, 429.9, 939.0, 0.0);	
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2,
3757749.7, 420.2, 939.0, 0.0);	
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7,
3757748.1, 428.0, 939.0, 0.0);	
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5,
3757734.1, 426.5, 939.0, 0.0);	
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9,
3757690.2, 412.9, 939.0, 0.0);	
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6,
3757626.8, 410.6, 939.0, 0.0);	
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1,
3757607.1, 407.6, 939.0, 0.0);	
(471179.0, 3757583.2, 407.8, 939.0, 0.0);	(471161.0,
3757576.6, 407.1, 939.0, 0.0);	
(471134.1, 3757579.0, 408.2, 939.0, 0.0);	(471064.8,
3757654.3, 408.3, 939.0, 0.0);	
(471060.0, 3757663.3, 410.2, 939.0, 0.0);	(471085.7,
3757611.3, 406.0, 939.0, 0.0);	
(471088.1, 3757588.0, 403.2, 939.0, 0.0);	(471097.1,
3757570.6, 401.2, 939.0, 0.0);	
(471005.0, 3757599.3, 397.9, 939.0, 0.0);	(471006.8,
3757635.8, 402.7, 939.0, 0.0);	
(470982.8, 3757698.0, 413.2, 939.0, 0.0);	(471031.9,
3757694.4, 418.2, 939.0, 0.0);	
(471009.2, 3757555.7, 396.0, 939.0, 0.0);	(471036.1,
3757657.3, 407.4, 939.0, 0.0);	
(471053.4, 3757562.8, 397.5, 939.0, 0.0);	(471107.2,
3757671.1, 409.3, 939.0, 0.0);	
(471017.5, 3757717.1, 423.7, 939.0, 0.0);	(471004.4,
3757696.2, 419.4, 939.0, 0.0);	
(471129.3, 3757678.8, 410.4, 939.0, 0.0);	(471097.1,
3757724.3, 418.7, 939.0, 0.0);	

CO

```

*** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
***                                ***
                                09/17/19

```

```

*** MODELOPTs:      RegDFAULT  CONC  ELEV  ARM2  URBAN  ADJ_U*

```

```

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

```

[illegible]

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

CATEGORIES ***

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED

(METERS/SEC)

10.80, 1.54, 3.09, 5.14, 8.23,

```

*** AERMOD - VERSION 19191 ***
***
*** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
09/17/19

```

```

*** MODELOPTs:  RegDFAULT  CONC  PAGE 7  ELEV  ARM2  URBAN  ADJ_U*

```

CO

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL

DATA ***

Surface file: ..\KRAL_V9_ADJU\KRAL_V9.SFC

Met Version: 16216

Profile file: ..\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171

Name: UNKNOWN

Upper air station no.: 3190

Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	
1.00	2.52	77.	10.1	285.9	2.0									
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	
1.00	2.30	80.	10.1	285.4	2.0									
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	
1.00	1.93	79.	10.1	287.0	2.0									
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	
1.00	1.96	77.	10.1	284.2	2.0									
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	
0.53	1.89	77.	10.1	288.1	2.0									
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	
0.31	2.10	81.	10.1	289.2	2.0									
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	
0.24	1.99	101.	10.1	296.4	2.0									
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	
0.21	3.68	78.	10.1	298.8	2.0									
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	
0.20	2.89	68.	10.1	300.4	2.0									
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	
0.20	2.57	64.	10.1	302.5	2.0									

CO													
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40
0.22	3.37	63.	10.1	303.1	2.0								
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40
0.25	3.59	62.	10.1	302.5	2.0								
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40
0.34	3.76	69.	10.1	300.9	2.0								
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40
0.62	3.03	59.	10.1	297.5	2.0								
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

```

*** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
***                               ***
*** AERMET - VERSION 16216 ***      ***
***                               ***
                                     11:04:24

```

PAGE 8

*** MODELOPTs: RegDFault CONC ELEV ARM2 URBAN ADJ_U*

```

*** THE 1ST-HIGHEST MAX DAILY 1-HR AVERAGE CONCENTRATION VALUES AVERAGED
OVER 5 YEARS FOR SOURCE GROUP: ALL ***
      INCLUDING SOURCE(S):      L0000001      , L0000002
, L0000003      , L0000004      , L0000005      ,
      L0000006      , L0000007      , L0000008      , L0000009      , L0000010
, L0000011      , L0000012      , L0000013      ,
      L0000014      , L0000015      , L0000016      , L0000017      , L0000018
, L0000019      , L0000020      , L0000021      ,
      L0000022      , L0000023      , L0000024      , L0000025      , L0000026
, L0000027      , L0000028      , . . .      ,

```

CO

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF NO2 IN PPM

**

Y-COORD (M)	X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
471098.69	3757757.68	0.01315	471080.76	
3757752.90	0.01076			
471066.41	3757749.31	0.00938	471066.77	
3757738.46	0.00903			
471083.32	3757744.08	0.01056	471100.17	
3757749.70	0.01251			
471008.41	3757750.32	0.00887	471023.70	
3757748.14	0.00894			
471009.34	3757740.96	0.00859	471026.51	
3757734.09	0.00858			
471117.99	3757733.26	0.01131	471144.90	
3757690.21	0.00856			
471175.99	3757636.40	0.00705	471182.57	
3757626.83	0.00639			
471189.14	3757614.87	0.00566	471195.12	
3757607.10	0.00545			
471178.98	3757583.18	0.00500	471161.04	
3757576.60	0.00472			
471134.13	3757578.99	0.00484	471064.77	
3757654.33	0.00610			
471059.99	3757663.30	0.00675	471085.70	
3757611.28	0.00477			
471088.09	3757587.96	0.00390	471097.06	
3757570.62	0.00355			
471004.98	3757599.32	0.00341	471006.77	
3757635.80	0.00438			
470982.85	3757697.99	0.00776	471031.88	
3757694.40	0.00812			
471009.16	3757555.67	0.00293	471036.07	
3757657.32	0.00598			
471053.41	3757562.85	0.00320	471107.23	
3757671.08	0.00688			
471017.53	3757717.12	0.00814	471004.38	
3757696.19	0.00772			
471129.35	3757678.85	0.00742	471097.06	
3757724.29	0.01055			
471075.53	3757717.12	0.00906		

CO
 ▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:04:24

PAGE 9
 *** MODELOPTs: RegDFAULT CONC ELEV ARM2 URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR
 RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN PPM
 **

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG)	OF TYPE GRID-ID		
ALL	1ST HIGHEST VALUE IS	0.01315 AT (	471098.69, 3757757.68,
421.25,	939.00, 0.00) DC		
	2ND HIGHEST VALUE IS	0.01251 AT (	471100.17, 3757749.70,
420.20,	939.00, 0.00) DC		
	3RD HIGHEST VALUE IS	0.01131 AT (	471117.99, 3757733.26,
415.94,	939.00, 0.00) DC		
	4TH HIGHEST VALUE IS	0.01076 AT (	471080.76, 3757752.90,
427.54,	939.00, 0.00) DC		
	5TH HIGHEST VALUE IS	0.01056 AT (	471083.32, 3757744.08,
425.72,	939.00, 0.00) DC		
	6TH HIGHEST VALUE IS	0.01055 AT (	471097.06, 3757724.29,
418.66,	939.00, 0.00) DC		
	7TH HIGHEST VALUE IS	0.00938 AT (	471066.41, 3757749.31,
431.04,	939.00, 0.00) DC		
	8TH HIGHEST VALUE IS	0.00906 AT (	471075.53, 3757717.12,
424.36,	939.00, 0.00) DC		
	9TH HIGHEST VALUE IS	0.00903 AT (	471066.77, 3757738.46,
429.94,	939.00, 0.00) DC		
	10TH HIGHEST VALUE IS	0.00894 AT (	471023.70, 3757748.14,
427.96,	939.00, 0.00) DC		

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

CO
▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\N02\N02.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:04:24

PAGE 10
*** MODELOPTs: RegDFAULT CONC ELEV ARM2 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

***** WARNING MESSAGES *****
ME W186 161 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 161 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.7.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 9/17/2019
** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\PM10\PM10.ADI
**

CO

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\PM10\PM10.ISC

MODELOPT DFAULT CONC

AVERTIME 24 ANNUAL

URBANOPT 2189641

POLLUTID PM_10

RUNORNOT RUN

ERRORFIL PM10.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

** -----

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 0.208325

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

** 470813.794, 3757852.980, 397.85, 3.49, 16.74

** 470925.656, 3757855.794, 405.26, 3.49, 16.74

** 471025.559, 3757852.277, 411.05, 3.49, 16.74

** 471105.762, 3757833.281, 414.24, 3.49, 16.74

** 471145.160, 3757822.025, 415.90, 3.49, 16.74

** 471200.036, 3757800.215, 417.93, 3.49, 16.74

** 471303.456, 3757745.339, 421.00, 3.49, 16.74

** 471435.018, 3757619.406, 420.70, 3.49, 16.74

** 471617.937, 3757455.482, 426.96, 3.49, 16.74

** 471722.764, 3757300.000, 436.09, 3.49, 16.74

CO

**

LOCATION	VOLUME	470689.523	3757857.646	392.70
LOCATION L0000001	VOLUME	470689.523	3757857.646	392.70
LOCATION L0000002	VOLUME	470725.209	3757852.906	393.32
LOCATION L0000003	VOLUME	470760.896	3757848.167	394.45
LOCATION L0000004	VOLUME	470796.732	3757851.366	396.67
LOCATION L0000005	VOLUME	470832.650	3757853.455	398.77
LOCATION L0000006	VOLUME	470868.639	3757854.360	401.34
LOCATION L0000007	VOLUME	470904.628	3757855.265	403.71
LOCATION L0000008	VOLUME	470940.612	3757855.268	405.71
LOCATION L0000009	VOLUME	470976.589	3757854.001	408.28
LOCATION L0000010	VOLUME	471012.567	3757852.734	410.59
LOCATION L0000011	VOLUME	471047.940	3757846.976	411.26
LOCATION L0000012	VOLUME	471082.971	3757838.679	413.04
LOCATION L0000013	VOLUME	471117.856	3757829.826	415.15
LOCATION L0000014	VOLUME	471152.226	3757819.216	416.69
LOCATION L0000015	VOLUME	471185.681	3757805.920	418.12
LOCATION L0000016	VOLUME	471218.191	3757790.582	418.09
LOCATION L0000017	VOLUME	471249.992	3757773.708	418.04
LOCATION L0000018	VOLUME	471281.792	3757756.834	421.00
LOCATION L0000019	VOLUME	471311.746	3757737.404	421.00
LOCATION L0000020	VOLUME	471337.752	3757712.511	420.97
LOCATION L0000021	VOLUME	471363.758	3757687.617	420.94
LOCATION L0000022	VOLUME	471389.764	3757662.724	420.79
LOCATION L0000023	VOLUME	471415.770	3757637.830	420.12
LOCATION L0000024	VOLUME	471441.985	3757613.162	421.00
LOCATION L0000025	VOLUME	471468.795	3757589.136	421.18
LOCATION L0000026	VOLUME	471495.604	3757565.111	421.89
LOCATION L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION L0000035	VOLUME	471707.231	3757323.039	435.04

** END OF LINE VOLUME SOURCE ID = SLINE1

** SOURCE PARAMETERS **

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000001	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000002	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000003	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000004	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000005	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000006	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000007	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000008	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000009	0.0059521429	3.49	16.74	3.25

		CO		
SRCPARAM L0000010	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000011	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000012	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000013	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000014	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000015	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000016	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000017	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000018	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000019	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000020	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000021	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000022	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000023	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000024	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000025	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000026	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000027	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000028	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000029	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000030	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000031	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000032	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000033	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000034	0.0059521429	3.49	16.74	3.25
SRCPARAM L0000035	0.0059521429	3.49	16.74	3.25

** -----

URBANSRC ALL
SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING
INCLUDED PM10.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING
SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC
PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL

CO

SURFDATA 3171 2012
UAIRDATA 3190 2012
PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 24 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 24 ALL 1ST PM10.AD\24H1GALL.PLT 31

PLOTFILE ANNUAL ALL PM10.AD\AN00GALL.PLT 32

SUMMFILE 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 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM10\PM10.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:08

```

                                CO
                                PAGE 1
*** MODELOPTs:   RegDEFAULT  CONC  ELEV  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    35 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
  CCVR_Sub - Meteorological data includes CCVR substitutions
  TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  PM_10

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

**This Run Includes:    35 Source(s);          1 Source Group(s); and    37
Receptor(s)

      with:    0 POINT(s), including
               0 POINTCAP(s) and          0 POINTHOR(s)
      and:    35 VOLUME source(s)
      and:    0 AREA type source(s)
      and:    0 LINE source(s)

```

CO
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 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 ANNUAL Averages by Receptor

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) = 245.00 ; 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: PM10.ERR

**File for Summary of Results: PM10.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM10\PM10.ISC *** 09/17/19
*** AERMET - VERSION 16216 ***
*** 11:05:08

*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

CO

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
SOURCE		EMISSION	RATE					
SZ	SOURCE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	SY
ID		SCALAR	VARY			(METERS)	(METERS)	(METERS)
(METERS)		CATS.	BY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
L0000001		0	0.59521E-02	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.59521E-02	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.59521E-02	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.59521E-02	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.59521E-02	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.59521E-02	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							
L0000007		0	0.59521E-02	470904.6	3757855.3	403.7	3.49	16.74
3.25	YES							
L0000008		0	0.59521E-02	470940.6	3757855.3	405.7	3.49	16.74
3.25	YES							
L0000009		0	0.59521E-02	470976.6	3757854.0	408.3	3.49	16.74
3.25	YES							
L0000010		0	0.59521E-02	471012.6	3757852.7	410.6	3.49	16.74
3.25	YES							
L0000011		0	0.59521E-02	471047.9	3757847.0	411.3	3.49	16.74
3.25	YES							
L0000012		0	0.59521E-02	471083.0	3757838.7	413.0	3.49	16.74
3.25	YES							
L0000013		0	0.59521E-02	471117.9	3757829.8	415.2	3.49	16.74
3.25	YES							
L0000014		0	0.59521E-02	471152.2	3757819.2	416.7	3.49	16.74
3.25	YES							
L0000015		0	0.59521E-02	471185.7	3757805.9	418.1	3.49	16.74
3.25	YES							
L0000016		0	0.59521E-02	471218.2	3757790.6	418.1	3.49	16.74
3.25	YES							
L0000017		0	0.59521E-02	471250.0	3757773.7	418.0	3.49	16.74
3.25	YES							
L0000018		0	0.59521E-02	471281.8	3757756.8	421.0	3.49	16.74

CO

3.25	YES							
L0000019		0	0.59521E-02	471311.7	3757737.4	421.0	3.49	16.74
3.25	YES							
L0000020		0	0.59521E-02	471337.8	3757712.5	421.0	3.49	16.74
3.25	YES							
L0000021		0	0.59521E-02	471363.8	3757687.6	420.9	3.49	16.74
3.25	YES							
L0000022		0	0.59521E-02	471389.8	3757662.7	420.8	3.49	16.74
3.25	YES							
L0000023		0	0.59521E-02	471415.8	3757637.8	420.1	3.49	16.74
3.25	YES							
L0000024		0	0.59521E-02	471442.0	3757613.2	421.0	3.49	16.74
3.25	YES							
L0000025		0	0.59521E-02	471468.8	3757589.1	421.2	3.49	16.74
3.25	YES							
L0000026		0	0.59521E-02	471495.6	3757565.1	421.9	3.49	16.74
3.25	YES							
L0000027		0	0.59521E-02	471522.4	3757541.1	423.2	3.49	16.74
3.25	YES							
L0000028		0	0.59521E-02	471549.2	3757517.1	425.0	3.49	16.74
3.25	YES							
L0000029		0	0.59521E-02	471576.0	3757493.0	424.6	3.49	16.74
3.25	YES							
L0000030		0	0.59521E-02	471602.8	3757469.0	426.4	3.49	16.74
3.25	YES							
L0000031		0	0.59521E-02	471626.7	3757442.4	427.5	3.49	16.74
3.25	YES							
L0000032		0	0.59521E-02	471646.9	3757412.6	429.9	3.49	16.74
3.25	YES							
L0000033		0	0.59521E-02	471667.0	3757382.7	431.4	3.49	16.74
3.25	YES							
L0000034		0	0.59521E-02	471687.1	3757352.9	433.0	3.49	16.74
3.25	YES							
L0000035		0	0.59521E-02	471707.2	3757323.0	435.0	3.49	16.74

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM10\PM10.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:08

PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID

SOURCE IDs

CO

```
-----  
ALL      L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,  
L0000006 , L0000007 , L0000008 ,  
  
L0000014 L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,  
      , L0000015 , L0000016 ,  
  
L0000022 L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,  
      , L0000023 , L0000024 ,  
  
L0000030 L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,  
      , L0000031 , L0000032 ,
```

```
      L0000033 , L0000034 , L0000035 ,  
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585  
HRA\PM10\PM10.ISC *** 09/17/19  
*** AERMET - VERSION 16216 *** ***  
*** 11:05:08
```

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

*** SOURCE IDs DEFINED AS URBAN SOURCES

```
URBAN ID      URBAN POP      SOURCE IDs  
-----  
  
L0000005      2189641. L0000001 , L0000002 , L0000003 , L0000004 ,  
L0000008      , L0000006 , L0000007 ,  
      ,  
  
L0000014      L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,  
      , L0000015 , L0000016 ,  
  
L0000022      L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,  
      , L0000023 , L0000024 ,  
  
L0000030      L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,  
      , L0000031 , L0000032 ,  
  
      L0000033 , L0000034 , L0000035 ,  
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585  
HRA\PM10\PM10.ISC *** 09/17/19
```

CO
*** AERMET - VERSION 16216 ***
*** 11:05:08

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

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8,
3757752.9, 427.5, 939.0, 0.0);	
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8,
3757738.5, 429.9, 939.0, 0.0);	
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2,
3757749.7, 420.2, 939.0, 0.0);	
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7,
3757748.1, 428.0, 939.0, 0.0);	
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5,
3757734.1, 426.5, 939.0, 0.0);	
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9,
3757690.2, 412.9, 939.0, 0.0);	
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6,
3757626.8, 410.6, 939.0, 0.0);	
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1,
3757607.1, 407.6, 939.0, 0.0);	
(471179.0, 3757583.2, 407.8, 939.0, 0.0);	(471161.0,
3757576.6, 407.1, 939.0, 0.0);	
(471134.1, 3757579.0, 408.2, 939.0, 0.0);	(471064.8,
3757654.3, 408.3, 939.0, 0.0);	
(471060.0, 3757663.3, 410.2, 939.0, 0.0);	(471085.7,
3757611.3, 406.0, 939.0, 0.0);	
(471088.1, 3757588.0, 403.2, 939.0, 0.0);	(471097.1,
3757570.6, 401.2, 939.0, 0.0);	
(471005.0, 3757599.3, 397.9, 939.0, 0.0);	(471006.8,
3757635.8, 402.7, 939.0, 0.0);	
(470982.8, 3757698.0, 413.2, 939.0, 0.0);	(471031.9,
3757694.4, 418.2, 939.0, 0.0);	
(471009.2, 3757555.7, 396.0, 939.0, 0.0);	(471036.1,
3757657.3, 407.4, 939.0, 0.0);	
(471053.4, 3757562.8, 397.5, 939.0, 0.0);	(471107.2,
3757671.1, 409.3, 939.0, 0.0);	
(471017.5, 3757717.1, 423.7, 939.0, 0.0);	(471004.4,
3757696.2, 419.4, 939.0, 0.0);	
(471129.3, 3757678.8, 410.4, 939.0, 0.0);	(471097.1,
3757724.3, 418.7, 939.0, 0.0);	
(471075.5, 3757717.1, 424.4, 939.0, 0.0);	

CO

PAGE 6

*** METEOROLOGICAL DAYS SELECTED FOR

(1=YES; 0=NO)

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED

(METERS/SEC)

10.80,

PAGE 7

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL

CO

DATA ***

Surface file: ..\KRAL_V9_ADJU\KRAL_V9.SFC

Met Version: 16216

Profile file: ..\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171

Name: UNKNOWN

Upper air station no.: 3190

Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	
1.00	2.52	77.	10.1	285.9	2.0									
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	
1.00	2.30	80.	10.1	285.4	2.0									
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	
1.00	1.93	79.	10.1	287.0	2.0									
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	
1.00	1.96	77.	10.1	284.2	2.0									
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	
0.53	1.89	77.	10.1	288.1	2.0									
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	
0.31	2.10	81.	10.1	289.2	2.0									
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	
0.24	1.99	101.	10.1	296.4	2.0									
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	
0.21	3.68	78.	10.1	298.8	2.0									
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	
0.20	2.89	68.	10.1	300.4	2.0									
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	
0.20	2.57	64.	10.1	302.5	2.0									
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40	
0.22	3.37	63.	10.1	303.1	2.0									

CO													
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40
0.25	3.59	62.	10.1	302.5	2.0								
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40
0.34	3.76	69.	10.1	300.9	2.0								
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40
0.62	3.03	59.	10.1	297.5	2.0								
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

```

*** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585
HRA\PM10\PM10.ISC                  ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
***                               ***      11:05:08

```

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

```

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5
YEARS FOR SOURCE GROUP: ALL ***
      INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
      L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
      L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 , L0000020 , L0000021 ,
      L0000022 , L0000023 , L0000024 , L0000025 , L0000026
, L0000027 , L0000028 , . . . ,

```

*** DISCRETE CARTESIAN RECEPTOR POINTS

CO

** CONC OF PM₁₀ IN MICROGRAMS/M**3

**

Y-COORD (M)	X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
471098.69	3757757.68	4.41170	471080.76	
3757752.90	3.29750	2.76465	471066.77	
471066.41	3757749.31	3.27210	471100.17	
3757738.46	2.64646	2.64884	471023.70	
471083.32	3757744.08	2.53672	471026.51	
3757749.70	4.21767	4.21288	471144.90	
471008.41	3757750.32	2.54534	471182.57	
3757748.14	2.65961	2.28956	471195.12	
471009.34	3757740.96	1.94889	471161.04	
3757734.09	2.53112	1.75341	471064.77	
471117.99	3757733.26	2.23362	471085.70	
3757690.21	3.21430	1.62731	471097.06	
471175.99	3757636.40	1.48017	471006.77	
3757626.83	2.42940	2.30691	471031.88	
471189.14	3757614.87	1.26837	471036.07	
3757607.10	2.23417	1.38152	471107.23	
471178.98	3757583.18	2.35129	471004.38	
3757576.60	1.81751	2.82139	471097.06	
471134.13	3757578.99	2.72656		
3757654.33	2.14000			
471059.99	3757663.30			
3757611.28	1.80302			
471088.09	3757587.96			
3757570.62	1.53542			
471004.98	3757599.32			
3757635.80	1.75352			
470982.85	3757697.99			
3757694.40	2.31751			
471009.16	3757555.67			
3757657.32	2.05920			
471053.41	3757562.85			
3757671.08	2.54630			
471017.53	3757717.12			
3757696.19	2.12755			
471129.35	3757678.85			
3757724.29	3.47652			
471075.53	3757717.12			

▲ *** AERMOD - VERSION 19191 ***
HRA\PM10\PM10.ISC

*** C:\LAKES\AERMOD VIEW\12585
*** 09/17/19

CO

*** AERMET - VERSION 16216 ***
*** 11:05:08

PAGE 9

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026
, L0000027 , L0000028 , . . . ,

*** 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)		
471098.69	3757757.68	8.70267b	(16120624)	471080.76
3757752.90	6.53442b	(16120624)		
471066.41	3757749.31	5.66487b	(16120624)	471066.77
3757738.46	5.36410b	(16120624)		
471083.32	3757744.08	6.31473b	(16120624)	471100.17
3757749.70	8.37076b	(16120624)		
471008.41	3757750.32	5.17600b	(16120624)	471023.70
3757748.14	5.25004b	(16120624)		
471009.34	3757740.96	4.89109b	(16120624)	471026.51
3757734.09	4.89001b	(16120624)		
471117.99	3757733.26	7.98509b	(16120624)	471144.90
3757690.21	6.09089b	(16120624)		
471175.99	3757636.40	4.82974b	(16120624)	471182.57
3757626.83	4.56449b	(16120624)		
471189.14	3757614.87	4.25135b	(16120624)	471195.12
3757607.10	4.13604b	(16120624)		
471178.98	3757583.18	3.60313b	(16120624)	471161.04
3757576.60	3.36134b	(16120624)		
471134.13	3757578.99	3.26129b	(16120624)	471064.77
3757654.33	4.09380b	(16120624)		
471059.99	3757663.30	4.34413b	(16120624)	471085.70

CO

3757611.28	3.36729b (16120624)	
471088.09	3757587.96	2.98161b (16120624) 471097.06
3757570.62	2.76951b (16120624)	
471004.98	3757599.32	2.62055b (16120624) 471006.77
3757635.80	3.26855b (16120624)	
470982.85	3757697.99	4.65488b (16120624) 471031.88
3757694.40	4.70316b (16120624)	
471009.16	3757555.67	2.20316b (16120624) 471036.07
3757657.32	3.96505b (16120624)	
471053.41	3757562.85	2.41602b (16120624) 471107.23
3757671.08	4.86873b (16120624)	
471017.53	3757717.12	4.45357b (16120624) 471004.38
3757696.19	4.24223b (16120624)	
471129.35	3757678.85	5.34970b (16120624) 471097.06
3757724.29	7.00326b (16120624)	
471075.53	3757717.12	5.26525b (16120624)

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM10\PM10.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:08

PAGE 10

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS

AVERAGED OVER 5 YEARS ***

** CONC OF PM_10 IN MICROGRAMS/M**3

**

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

ALL	1ST HIGHEST VALUE IS		4.41170 AT (	471098.69, 3757757.68,
421.25,	939.00, 0.00) DC			
	2ND HIGHEST VALUE IS		4.21767 AT (	471100.17, 3757749.70,
420.20,	939.00, 0.00) DC			
	3RD HIGHEST VALUE IS		4.21288 AT (	471117.99, 3757733.26,
415.94,	939.00, 0.00) DC			
	4TH HIGHEST VALUE IS		3.47652 AT (	471097.06, 3757724.29,
418.66,	939.00, 0.00) DC			
	5TH HIGHEST VALUE IS		3.29750 AT (	471080.76, 3757752.90,

C0

427.54,	939.00,	0.00)	DC	
	6TH HIGHEST VALUE IS			3.27210 AT (471083.32, 3757744.08,
425.72,	939.00,	0.00)	DC	
	7TH HIGHEST VALUE IS			3.21430 AT (471144.90, 3757690.21,
412.94,	939.00,	0.00)	DC	
	8TH HIGHEST VALUE IS			2.82139 AT (471129.35, 3757678.85,
410.41,	939.00,	0.00)	DC	
	9TH HIGHEST VALUE IS			2.76465 AT (471066.41, 3757749.31,
431.04,	939.00,	0.00)	DC	
	10TH HIGHEST VALUE IS			2.72656 AT (471075.53, 3757717.12,
424.36,	939.00,	0.00)	DC	

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\PM10\PM10.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:05:08

PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 24-HR

RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3

**

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

ALL HIGH 1ST HIGH VALUE IS 8.70267b ON 16120624: AT (471098.69,
 3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585

HRA\PM10\PM10.ISC CO
*** 09/17/19
*** AERMET - VERSION 16216 ***
*** 11:05:08

PAGE 12
*** MODELOPTs: RegDFAULT CONC ELEV 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

***** WARNING MESSAGES *****
ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**

** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.7.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 9/17/2019
** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\PM25\PM25.ADI
**

**

**

CO

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\PM25\PM25.ISC

MODELOPT DFAULT CONC

AVERTIME 24

URBANOPT 2189641

POLLUTID PM_2.5

RUNORNOT RUN

ERRORFIL PM25.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

** -----

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 0.070995

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

** 470813.794, 3757852.980, 397.85, 3.49, 16.74

** 470925.656, 3757855.794, 405.26, 3.49, 16.74

** 471025.559, 3757852.277, 411.05, 3.49, 16.74

** 471105.762, 3757833.281, 414.24, 3.49, 16.74

** 471145.160, 3757822.025, 415.90, 3.49, 16.74

** 471200.036, 3757800.215, 417.93, 3.49, 16.74

** 471303.456, 3757745.339, 421.00, 3.49, 16.74

** 471435.018, 3757619.406, 420.70, 3.49, 16.74

** 471617.937, 3757455.482, 426.96, 3.49, 16.74

** 471722.764, 3757300.000, 436.09, 3.49, 16.74

** -----

LOCATION L0000001 VOLUME 470689.523 3757857.646 392.70

LOCATION L0000002 VOLUME 470725.209 3757852.906 393.32

CO

LOCATION	L0000003	VOLUME	470760.896	3757848.167	394.45
LOCATION	L0000004	VOLUME	470796.732	3757851.366	396.67
LOCATION	L0000005	VOLUME	470832.650	3757853.455	398.77
LOCATION	L0000006	VOLUME	470868.639	3757854.360	401.34
LOCATION	L0000007	VOLUME	470904.628	3757855.265	403.71
LOCATION	L0000008	VOLUME	470940.612	3757855.268	405.71
LOCATION	L0000009	VOLUME	470976.589	3757854.001	408.28
LOCATION	L0000010	VOLUME	471012.567	3757852.734	410.59
LOCATION	L0000011	VOLUME	471047.940	3757846.976	411.26
LOCATION	L0000012	VOLUME	471082.971	3757838.679	413.04
LOCATION	L0000013	VOLUME	471117.856	3757829.826	415.15
LOCATION	L0000014	VOLUME	471152.226	3757819.216	416.69
LOCATION	L0000015	VOLUME	471185.681	3757805.920	418.12
LOCATION	L0000016	VOLUME	471218.191	3757790.582	418.09
LOCATION	L0000017	VOLUME	471249.992	3757773.708	418.04
LOCATION	L0000018	VOLUME	471281.792	3757756.834	421.00
LOCATION	L0000019	VOLUME	471311.746	3757737.404	421.00
LOCATION	L0000020	VOLUME	471337.752	3757712.511	420.97
LOCATION	L0000021	VOLUME	471363.758	3757687.617	420.94
LOCATION	L0000022	VOLUME	471389.764	3757662.724	420.79
LOCATION	L0000023	VOLUME	471415.770	3757637.830	420.12
LOCATION	L0000024	VOLUME	471441.985	3757613.162	421.00
LOCATION	L0000025	VOLUME	471468.795	3757589.136	421.18
LOCATION	L0000026	VOLUME	471495.604	3757565.111	421.89
LOCATION	L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION	L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION	L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION	L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION	L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION	L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION	L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION	L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION	L0000035	VOLUME	471707.231	3757323.039	435.04

** END OF LINE VOLUME SOURCE ID = SLINE1

** SOURCE PARAMETERS **

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM	L0000001	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000002	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000003	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000004	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000005	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000006	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000007	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000008	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000009	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000010	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000011	0.0020284286	3.49	16.74	3.25
SRCPARAM	L0000012	0.0020284286	3.49	16.74	3.25

CO

SRCPARAM L0000013	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000014	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000015	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000016	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000017	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000018	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000019	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000020	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000021	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000022	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000023	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000024	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000025	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000026	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000027	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000028	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000029	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000030	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000031	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000032	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000033	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000034	0.0020284286	3.49	16.74	3.25
SRCPARAM L0000035	0.0020284286	3.49	16.74	3.25

** -----

URBANSRC ALL

SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING

INCLUDED PM25.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING

SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC

PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL

SURFDATA 3171 2012

UAIRDATA 3190 2012

PROFBASE 245.0 METERS

CO

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 24 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 24 ALL 1ST PM25.AD\24H1GALL.PLT 31

SUMMFILE PM25.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 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:53

PAGE 1
*** MODELOPTs: RegDFAULT CONC ELEV 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 35 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

CCVR_Sub - Meteorological data includes CCVR substitutions

TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No 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: 35 Source(s); 1 Source Group(s); and 37
 Receptor(s)

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)
 and: 35 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 0 line(s)

CO

**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) = 245.00 ; 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: PM25.ERR

**File for Summary of Results: PM25.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:53

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

*** VOLUME SOURCE DATA ***

	NUMBER	EMISSION	RATE	BASE	RELEASE	INIT.
INIT.	URBAN	EMISSION	RATE			

SOURCE		PART.	(GRAMS/SEC)	CO		ELEV.	HEIGHT	SY
SZ	SOURCE	SCALAR	VARY	X	Y	(METERS)	(METERS)	(METERS)
ID		CATS.	BY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
(METERS)								

L0000001		0	0.20284E-02	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.20284E-02	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.20284E-02	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.20284E-02	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.20284E-02	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.20284E-02	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							
L0000007		0	0.20284E-02	470904.6	3757855.3	403.7	3.49	16.74
3.25	YES							
L0000008		0	0.20284E-02	470940.6	3757855.3	405.7	3.49	16.74
3.25	YES							
L0000009		0	0.20284E-02	470976.6	3757854.0	408.3	3.49	16.74
3.25	YES							
L0000010		0	0.20284E-02	471012.6	3757852.7	410.6	3.49	16.74
3.25	YES							
L0000011		0	0.20284E-02	471047.9	3757847.0	411.3	3.49	16.74
3.25	YES							
L0000012		0	0.20284E-02	471083.0	3757838.7	413.0	3.49	16.74
3.25	YES							
L0000013		0	0.20284E-02	471117.9	3757829.8	415.2	3.49	16.74
3.25	YES							
L0000014		0	0.20284E-02	471152.2	3757819.2	416.7	3.49	16.74
3.25	YES							
L0000015		0	0.20284E-02	471185.7	3757805.9	418.1	3.49	16.74
3.25	YES							
L0000016		0	0.20284E-02	471218.2	3757790.6	418.1	3.49	16.74
3.25	YES							
L0000017		0	0.20284E-02	471250.0	3757773.7	418.0	3.49	16.74
3.25	YES							
L0000018		0	0.20284E-02	471281.8	3757756.8	421.0	3.49	16.74
3.25	YES							
L0000019		0	0.20284E-02	471311.7	3757737.4	421.0	3.49	16.74
3.25	YES							
L0000020		0	0.20284E-02	471337.8	3757712.5	421.0	3.49	16.74
3.25	YES							
L0000021		0	0.20284E-02	471363.8	3757687.6	420.9	3.49	16.74

C0

3.25	YES							
L0000022		0	0.20284E-02	471389.8	3757662.7	420.8	3.49	16.74
3.25	YES							
L0000023		0	0.20284E-02	471415.8	3757637.8	420.1	3.49	16.74
3.25	YES							
L0000024		0	0.20284E-02	471442.0	3757613.2	421.0	3.49	16.74
3.25	YES							
L0000025		0	0.20284E-02	471468.8	3757589.1	421.2	3.49	16.74
3.25	YES							
L0000026		0	0.20284E-02	471495.6	3757565.1	421.9	3.49	16.74
3.25	YES							
L0000027		0	0.20284E-02	471522.4	3757541.1	423.2	3.49	16.74
3.25	YES							
L0000028		0	0.20284E-02	471549.2	3757517.1	425.0	3.49	16.74
3.25	YES							
L0000029		0	0.20284E-02	471576.0	3757493.0	424.6	3.49	16.74
3.25	YES							
L0000030		0	0.20284E-02	471602.8	3757469.0	426.4	3.49	16.74
3.25	YES							
L0000031		0	0.20284E-02	471626.7	3757442.4	427.5	3.49	16.74
3.25	YES							
L0000032		0	0.20284E-02	471646.9	3757412.6	429.9	3.49	16.74
3.25	YES							
L0000033		0	0.20284E-02	471667.0	3757382.7	431.4	3.49	16.74
3.25	YES							
L0000034		0	0.20284E-02	471687.1	3757352.9	433.0	3.49	16.74
3.25	YES							
L0000035		0	0.20284E-02	471707.2	3757323.0	435.0	3.49	16.74

3.25 YES
▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:53

PAGE 3

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID

SOURCE IDs

ALL L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 ,

```

CO
L0000014      L0000009      , L0000010      , L0000011      , L0000012      , L0000013      ,
, L0000015      , L0000016      ,

L0000022      L0000017      , L0000018      , L0000019      , L0000020      , L0000021      ,
, L0000023      , L0000024      ,

L0000030      L0000025      , L0000026      , L0000027      , L0000028      , L0000029      ,
, L0000031      , L0000032      ,

L0000033      , L0000034      , L0000035      ,
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:53

```

```

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

```

```

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

```

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000005	2189641.	L0000001 , L0000002 , L0000003 , L0000004 ,
L0000008	, L0000006	, L0000007 ,
L0000014	, L0000009	, L0000010 , L0000011 , L0000012 , L0000013 ,
	, L0000015	, L0000016 ,
L0000022	L0000017	, L0000018 , L0000019 , L0000020 , L0000021 ,
	, L0000023	, L0000024 ,
L0000030	L0000025	, L0000026 , L0000027 , L0000028 , L0000029 ,
	, L0000031	, L0000032 ,
	L0000033	, L0000034 , L0000035 ,
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585		
HRA\PM25\PM25.ISC *** 09/17/19		
*** AERMET - VERSION 16216 *** ***		
*** 11:05:53		

```

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

```

CO

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8,
3757752.9, 427.5, 939.0, 0.0);	
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8,
3757738.5, 429.9, 939.0, 0.0);	
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2,
3757749.7, 420.2, 939.0, 0.0);	
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7,
3757748.1, 428.0, 939.0, 0.0);	
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5,
3757734.1, 426.5, 939.0, 0.0);	
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9,
3757690.2, 412.9, 939.0, 0.0);	
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6,
3757626.8, 410.6, 939.0, 0.0);	
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1,
3757607.1, 407.6, 939.0, 0.0);	
(471179.0, 3757583.2, 407.8, 939.0, 0.0);	(471161.0,
3757576.6, 407.1, 939.0, 0.0);	
(471134.1, 3757579.0, 408.2, 939.0, 0.0);	(471064.8,
3757654.3, 408.3, 939.0, 0.0);	
(471060.0, 3757663.3, 410.2, 939.0, 0.0);	(471085.7,
3757611.3, 406.0, 939.0, 0.0);	
(471088.1, 3757588.0, 403.2, 939.0, 0.0);	(471097.1,
3757570.6, 401.2, 939.0, 0.0);	
(471005.0, 3757599.3, 397.9, 939.0, 0.0);	(471006.8,
3757635.8, 402.7, 939.0, 0.0);	
(470982.8, 3757698.0, 413.2, 939.0, 0.0);	(471031.9,
3757694.4, 418.2, 939.0, 0.0);	
(471009.2, 3757555.7, 396.0, 939.0, 0.0);	(471036.1,
3757657.3, 407.4, 939.0, 0.0);	
(471053.4, 3757562.8, 397.5, 939.0, 0.0);	(471107.2,
3757671.1, 409.3, 939.0, 0.0);	
(471017.5, 3757717.1, 423.7, 939.0, 0.0);	(471004.4,
3757696.2, 419.4, 939.0, 0.0);	
(471129.3, 3757678.8, 410.4, 939.0, 0.0);	(471097.1,
3757724.3, 418.7, 939.0, 0.0);	
(471075.5, 3757717.1, 424.4, 939.0, 0.0);	

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:05:53

PAGE 6

Page 62

CO

Surface format: FREE

Profile format: FREE

Surface station no.: 3171
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	
1.00	2.52	77.	10.1	285.9	2.0									
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	
1.00	2.30	80.	10.1	285.4	2.0									
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	
1.00	1.93	79.	10.1	287.0	2.0									
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	
1.00	1.96	77.	10.1	284.2	2.0									
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	
0.53	1.89	77.	10.1	288.1	2.0									
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	
0.31	2.10	81.	10.1	289.2	2.0									
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	
0.24	1.99	101.	10.1	296.4	2.0									
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	
0.21	3.68	78.	10.1	298.8	2.0									
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	
0.20	2.89	68.	10.1	300.4	2.0									
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	
0.20	2.57	64.	10.1	302.5	2.0									
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40	
0.22	3.37	63.	10.1	303.1	2.0									
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40	
0.25	3.59	62.	10.1	302.5	2.0									
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40	
0.34	3.76	69.	10.1	300.9	2.0									
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40	
0.62	3.03	59.	10.1	297.5	2.0									

CO

12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

▲ *** AERMOD - VERSION 19191 *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19

*** AERMET - VERSION 16216 ***
*** 11:05:53

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
, L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
, L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 , L0000020 , L0000021 ,
, L0000022 , L0000023 , L0000024 , L0000025 , L0000026
, L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF PM_{2.5} IN MICROGRAMS/M³

**

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

CO

471098.69	3757757.68	2.96578b (16120624)	471080.76
3757752.90	2.22686b (16120624)		
471066.41	3757749.31	1.93053b (16120624)	471066.77
3757738.46	1.82803b (16120624)		
471083.32	3757744.08	2.15200b (16120624)	471100.17
3757749.70	2.85267b (16120624)		
471008.41	3757750.32	1.76393b (16120624)	471023.70
3757748.14	1.78916b (16120624)		
471009.34	3757740.96	1.66683b (16120624)	471026.51
3757734.09	1.66647b (16120624)		
471117.99	3757733.26	2.72124b (16120624)	471144.90
3757690.21	2.07571b (16120624)		
471175.99	3757636.40	1.64592b (16120624)	471182.57
3757626.83	1.55553b (16120624)		
471189.14	3757614.87	1.44882b (16120624)	471195.12
3757607.10	1.40952b (16120624)		
471178.98	3757583.18	1.22791b (16120624)	471161.04
3757576.60	1.14551b (16120624)		
471134.13	3757578.99	1.11141b (16120624)	471064.77
3757654.33	1.39512b (16120624)		
471059.99	3757663.30	1.48044b (16120624)	471085.70
3757611.28	1.14754b (16120624)		
471088.09	3757587.96	1.01610b (16120624)	471097.06
3757570.62	0.94382b (16120624)		
471004.98	3757599.32	0.89306b (16120624)	471006.77
3757635.80	1.11389b (16120624)		
470982.85	3757697.99	1.58633b (16120624)	471031.88
3757694.40	1.60279b (16120624)		
471009.16	3757555.67	0.75081b (16120624)	471036.07
3757657.32	1.35125b (16120624)		
471053.41	3757562.85	0.82335b (16120624)	471107.23
3757671.08	1.65921b (16120624)		
471017.53	3757717.12	1.51773b (16120624)	471004.38
3757696.19	1.44571b (16120624)		
471129.35	3757678.85	1.82312b (16120624)	471097.06
3757724.29	2.38664b (16120624)		
471075.53	3757717.12	1.79434b (16120624)	

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\PM25\PM25.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:05:53

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

CO

*** THE SUMMARY OF HIGHEST 24-HR

RESULTS ***

** CONC OF PM_{2.5} IN MICROGRAMS/M³

**

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

ALL HIGH 1ST HIGH VALUE IS 2.96578b ON 16120624: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\PM25\PM25.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:05:53

PAGE 10

*** MODELOPTs: RegDFAULT CONC ELEV 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

CO

***** WARNING MESSAGES *****

ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50

ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**

** AERMOD INPUT PRODUCED BY:

** AERMOD VIEW VER. 9.7.0

** LAKES ENVIRONMENTAL SOFTWARE INC.

** DATE: 9/17/2019

** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\TOGGAS\TOGGAS.ADI

**

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\TOGGAS\TOGGAS.ISC

MODELOPT DFAULT CONC

AVERTIME 1 8 ANNUAL

URBANOPT 2189641

POLLUTID TOGGAS

RUNORNOT RUN

ERRORFIL TOGGAS.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

**

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

CO

```
** LINE VOLUME SOURCE ID = SLINE1
** DESCRSRC FREEWAY
** PREFIX
** LENGTH OF SIDE = 36.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.00634
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 12
** 470671.679, 3757860.016, 392.27, 3.49, 16.74
** 470761.732, 3757848.056, 394.95, 3.49, 16.74
** 470813.794, 3757852.980, 397.85, 3.49, 16.74
** 470925.656, 3757855.794, 405.26, 3.49, 16.74
** 471025.559, 3757852.277, 411.05, 3.49, 16.74
** 471105.762, 3757833.281, 414.24, 3.49, 16.74
** 471145.160, 3757822.025, 415.90, 3.49, 16.74
** 471200.036, 3757800.215, 417.93, 3.49, 16.74
** 471303.456, 3757745.339, 421.00, 3.49, 16.74
** 471435.018, 3757619.406, 420.70, 3.49, 16.74
** 471617.937, 3757455.482, 426.96, 3.49, 16.74
** 471722.764, 3757300.000, 436.09, 3.49, 16.74
```

```
** -----
LOCATION L0000001    VOLUME  470689.523 3757857.646 392.70
LOCATION L0000002    VOLUME  470725.209 3757852.906 393.32
LOCATION L0000003    VOLUME  470760.896 3757848.167 394.45
LOCATION L0000004    VOLUME  470796.732 3757851.366 396.67
LOCATION L0000005    VOLUME  470832.650 3757853.455 398.77
LOCATION L0000006    VOLUME  470868.639 3757854.360 401.34
LOCATION L0000007    VOLUME  470904.628 3757855.265 403.71
LOCATION L0000008    VOLUME  470940.612 3757855.268 405.71
LOCATION L0000009    VOLUME  470976.589 3757854.001 408.28
LOCATION L0000010    VOLUME  471012.567 3757852.734 410.59
LOCATION L0000011    VOLUME  471047.940 3757846.976 411.26
LOCATION L0000012    VOLUME  471082.971 3757838.679 413.04
LOCATION L0000013    VOLUME  471117.856 3757829.826 415.15
LOCATION L0000014    VOLUME  471152.226 3757819.216 416.69
LOCATION L0000015    VOLUME  471185.681 3757805.920 418.12
LOCATION L0000016    VOLUME  471218.191 3757790.582 418.09
LOCATION L0000017    VOLUME  471249.992 3757773.708 418.04
LOCATION L0000018    VOLUME  471281.792 3757756.834 421.00
LOCATION L0000019    VOLUME  471311.746 3757737.404 421.00
LOCATION L0000020    VOLUME  471337.752 3757712.511 420.97
LOCATION L0000021    VOLUME  471363.758 3757687.617 420.94
LOCATION L0000022    VOLUME  471389.764 3757662.724 420.79
LOCATION L0000023    VOLUME  471415.770 3757637.830 420.12
LOCATION L0000024    VOLUME  471441.985 3757613.162 421.00
LOCATION L0000025    VOLUME  471468.795 3757589.136 421.18
LOCATION L0000026    VOLUME  471495.604 3757565.111 421.89
```

		CO			
LOCATION	L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION	L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION	L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION	L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION	L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION	L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION	L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION	L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION	L0000035	VOLUME	471707.231	3757323.039	435.04
** END OF LINE VOLUME SOURCE ID = SLINE1					
** SOURCE PARAMETERS **					
** LINE VOLUME SOURCE ID = SLINE1					
SRCPARAM	L0000001	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000002	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000003	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000004	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000005	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000006	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000007	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000008	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000009	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000010	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000011	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000012	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000013	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000014	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000015	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000016	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000017	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000018	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000019	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000020	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000021	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000022	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000023	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000024	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000025	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000026	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000027	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000028	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000029	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000030	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000031	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000032	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000033	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000034	0.0001811429	3.49	16.74	3.25
SRCPARAM	L0000035	0.0001811429	3.49	16.74	3.25

** -----

CO

URBANSRC ALL
SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING

INCLUDED TOGGAS.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING

SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC

PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL

SURFDATA 3171 2012

UAIRDATA 3190 2012

PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 1 1ST

RECTABLE 8 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 1 ALL 1ST TOGGAS.AD\01H1GALL.PLT 31

PLOTFILE 8 ALL 1ST TOGGAS.AD\08H1GALL.PLT 32

PLOTFILE ANNUAL ALL TOGGAS.AD\AN00GALL.PLT 33

SUMMFILE TOGGAS.SUM

OU FINISHED

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

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

A Total of 0 Fatal Error Message(s)

CO
A Total of 2 Warning Message(s)
A Total of 0 Informational Message(s)

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

***** WARNING MESSAGES *****
ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:07:22

PAGE 1
*** MODELOPTs: RegDEFAULT CONC ELEV 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 35 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.

CO

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

CCVR_Sub - Meteorological data includes CCVR substitutions

TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: TOGGAS

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

**This Run Includes: 35 Source(s); 1 Source Group(s); and 37
Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 35 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 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 ANNUAL Averages by Receptor

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) = 245.00 ; 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: TOGGAS.ERR

**File for Summary of Results: TOGGAS.SUM

*** AERMOD - VERSION 19191 *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 ***
 *** 11:07:22

PAGE 2
 *** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
INIT.	SOURCE	EMISSION	RATE			ELEV.	HEIGHT	SY
SZ	SOURCE	SCALAR	VARY	X	Y	(METERS)	(METERS)	(METERS)
ID		CATS.	BY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
L0000001		0	0.18114E-03	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.18114E-03	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.18114E-03	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.18114E-03	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.18114E-03	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.18114E-03	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							

				CO			
L0000007	0	0.18114E-03	470904.6	3757855.3	403.7	3.49	16.74
3.25 YES							
L0000008	0	0.18114E-03	470940.6	3757855.3	405.7	3.49	16.74
3.25 YES							
L0000009	0	0.18114E-03	470976.6	3757854.0	408.3	3.49	16.74
3.25 YES							
L0000010	0	0.18114E-03	471012.6	3757852.7	410.6	3.49	16.74
3.25 YES							
L0000011	0	0.18114E-03	471047.9	3757847.0	411.3	3.49	16.74
3.25 YES							
L0000012	0	0.18114E-03	471083.0	3757838.7	413.0	3.49	16.74
3.25 YES							
L0000013	0	0.18114E-03	471117.9	3757829.8	415.2	3.49	16.74
3.25 YES							
L0000014	0	0.18114E-03	471152.2	3757819.2	416.7	3.49	16.74
3.25 YES							
L0000015	0	0.18114E-03	471185.7	3757805.9	418.1	3.49	16.74
3.25 YES							
L0000016	0	0.18114E-03	471218.2	3757790.6	418.1	3.49	16.74
3.25 YES							
L0000017	0	0.18114E-03	471250.0	3757773.7	418.0	3.49	16.74
3.25 YES							
L0000018	0	0.18114E-03	471281.8	3757756.8	421.0	3.49	16.74
3.25 YES							
L0000019	0	0.18114E-03	471311.7	3757737.4	421.0	3.49	16.74
3.25 YES							
L0000020	0	0.18114E-03	471337.8	3757712.5	421.0	3.49	16.74
3.25 YES							
L0000021	0	0.18114E-03	471363.8	3757687.6	420.9	3.49	16.74
3.25 YES							
L0000022	0	0.18114E-03	471389.8	3757662.7	420.8	3.49	16.74
3.25 YES							
L0000023	0	0.18114E-03	471415.8	3757637.8	420.1	3.49	16.74
3.25 YES							
L0000024	0	0.18114E-03	471442.0	3757613.2	421.0	3.49	16.74
3.25 YES							
L0000025	0	0.18114E-03	471468.8	3757589.1	421.2	3.49	16.74
3.25 YES							
L0000026	0	0.18114E-03	471495.6	3757565.1	421.9	3.49	16.74
3.25 YES							
L0000027	0	0.18114E-03	471522.4	3757541.1	423.2	3.49	16.74
3.25 YES							
L0000028	0	0.18114E-03	471549.2	3757517.1	425.0	3.49	16.74
3.25 YES							
L0000029	0	0.18114E-03	471576.0	3757493.0	424.6	3.49	16.74
3.25 YES							
L0000030	0	0.18114E-03	471602.8	3757469.0	426.4	3.49	16.74
3.25 YES							

				CO				
L0000031	0	0.18114E-03	471626.7	3757442.4	427.5	3.49	16.74	
3.25 YES								
L0000032	0	0.18114E-03	471646.9	3757412.6	429.9	3.49	16.74	
3.25 YES								
L0000033	0	0.18114E-03	471667.0	3757382.7	431.4	3.49	16.74	
3.25 YES								
L0000034	0	0.18114E-03	471687.1	3757352.9	433.0	3.49	16.74	
3.25 YES								
L0000035	0	0.18114E-03	471707.2	3757323.0	435.0	3.49	16.74	
3.25 YES								

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID	SOURCE IDs
-----	-----
ALL	L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006	, L0000007 , L0000008 ,
	L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014	, L0000015 , L0000016 ,
	L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022	, L0000023 , L0000024 ,
	L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
L0000030	, L0000031 , L0000032 ,
	L0000033 , L0000034 , L0000035 ,

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

CO

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000005	2189641.	L0000001 , L0000002 , L0000003 , L0000004 ,
L0000008	, L0000006	, L0000007 ,
	,	
L0000014	L0000009	, L0000010 , L0000011 , L0000012 , L0000013 ,
	, L0000015	, L0000016 ,
L0000022	L0000017	, L0000018 , L0000019 , L0000020 , L0000021 ,
	, L0000023	, L0000024 ,
L0000030	L0000025	, L0000026 , L0000027 , L0000028 , L0000029 ,
	, L0000031	, L0000032 ,
	L0000033	, L0000034 , L0000035 ,
▲ *** AERMOD - VERSION	19191 ***	*** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC		*** 09/17/19
*** AERMET - VERSION	16216 ***	***
	***	11:07:22

PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8,
3757752.9, 427.5, 939.0, 0.0);	
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8,
3757738.5, 429.9, 939.0, 0.0);	
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2,
3757749.7, 420.2, 939.0, 0.0);	
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7,
3757748.1, 428.0, 939.0, 0.0);	
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5,
3757734.1, 426.5, 939.0, 0.0);	
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9,
3757690.2, 412.9, 939.0, 0.0);	
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6,
3757626.8, 410.6, 939.0, 0.0);	
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1,

```

*** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC                ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
***                                  11:07:22

```

*** METEOROLOGICAL DAYS SELECTED FOR

(1=YES; 0=NO)

Page 78

CO
 1 1 1 1 1 1 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 19191 *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 ***
 *** 11:07:22

PAGE 7
 *** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

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

Surface file: ..\KRAL_V9_ADJU\KRAL_V9.SFC
 Met Version: 16216
 Profile file: ..\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
 Name: UNKNOWN Name: UNKNOWN
 Year: 2012 Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	

CO

1.00	2.45	74.	10.1	284.2	2.0								
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40
1.00	2.52	77.	10.1	285.9	2.0								
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40
1.00	2.30	80.	10.1	285.4	2.0								
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40
1.00	1.93	79.	10.1	287.0	2.0								
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40
1.00	1.96	77.	10.1	284.2	2.0								
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40
0.53	1.89	77.	10.1	288.1	2.0								
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40
0.31	2.10	81.	10.1	289.2	2.0								
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40
0.24	1.99	101.	10.1	296.4	2.0								
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40
0.21	3.68	78.	10.1	298.8	2.0								
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40
0.20	2.89	68.	10.1	300.4	2.0								
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40
0.20	2.57	64.	10.1	302.5	2.0								
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40
0.22	3.37	63.	10.1	303.1	2.0								
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40
0.25	3.59	62.	10.1	302.5	2.0								
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40
0.34	3.76	69.	10.1	300.9	2.0								
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40
0.62	3.03	59.	10.1	297.5	2.0								
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

C0

F indicates top of profile (=1) or below (=0)

▲ *** AERMOD - VERSION 19191 *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC *** 09/17/19

*** AERMET - VERSION 16216 ***
*** 11:07:22

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5
YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026
, L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

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

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
Y-COORD (M)	CONC		
471098.69	3757757.68	0.13426	471080.76
3757752.90	0.10035		
471066.41	3757749.31	0.08414	471066.77
3757738.46	0.08054		
471083.32	3757744.08	0.09958	471100.17
3757749.70	0.12836		
471008.41	3757750.32	0.08061	471023.70
3757748.14	0.08094		
471009.34	3757740.96	0.07720	471026.51
3757734.09	0.07703		
471117.99	3757733.26	0.12821	471144.90
3757690.21	0.09782		
471175.99	3757636.40	0.07746	471182.57
3757626.83	0.07393		
471189.14	3757614.87	0.06968	471195.12
3757607.10	0.06799		
471178.98	3757583.18	0.05931	471161.04

				CO	
3757576.60	0.05531				
471134.13	3757578.99	0.05336		471064.77	
3757654.33	0.06513				
471059.99	3757663.30	0.06798		471085.70	
3757611.28	0.05487				
471088.09	3757587.96	0.04952		471097.06	
3757570.62	0.04673				
471004.98	3757599.32	0.04505		471006.77	
3757635.80	0.05337				
470982.85	3757697.99	0.07021		471031.88	
3757694.40	0.07053				
471009.16	3757555.67	0.03860		471036.07	
3757657.32	0.06267				
471053.41	3757562.85	0.04204		471107.23	
3757671.08	0.07749				
471017.53	3757717.12	0.07156		471004.38	
3757696.19	0.06475				
471129.35	3757678.85	0.08586		471097.06	
3757724.29	0.10580				
471075.53	3757717.12	0.08298			

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

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

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION
 VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000001 , L0000002
 , L0000003 , L0000004 , L0000005 ,
 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010
 , L0000011 , L0000012 , L0000013 ,
 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018
 , L0000019 , L0000020 , L0000021 ,
 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026
 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF TOGGAS IN MICROGRAMS/M**3
 **
 X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M)
 Y-COORD (M) CONC (YYMMDDHH)

CO

```

- - - - -
471098.69  3757757.68      0.46463  (13072706)      471080.76
3757752.90      0.39557  (12060406)
471066.41  3757749.31      0.34528  (12060406)      471066.77
3757738.46      0.32734  (13051106)
471083.32  3757744.08      0.37621  (12060406)      471100.17
3757749.70      0.44387  (13072706)
471008.41  3757750.32      0.32463  (13051106)      471023.70
3757748.14      0.32571  (13051106)
471009.34  3757740.96      0.31597  (13051106)      471026.51
3757734.09      0.31437  (13051106)
471117.99  3757733.26      0.39732  (13063022)      471144.90
3757690.21      0.30123  (15080601)
471175.99  3757636.40      0.24889  (12080621)      471182.57
3757626.83      0.22553  (12080621)
471189.14  3757614.87      0.19950  (12080624)      471195.12
3757607.10      0.19230  (12080621)
471178.98  3757583.18      0.17611  (13090421)      471161.04
3757576.60      0.16650  (13090421)
471134.13  3757578.99      0.17061  (16082823)      471064.77
3757654.33      0.21517  (13090421)
471059.99  3757663.30      0.23801  (13090421)      471085.70
3757611.28      0.16774  (13090421)
471088.09  3757587.96      0.14016  (13062606)      471097.06
3757570.62      0.13276  (13062606)
471004.98  3757599.32      0.12772  (13062606)      471006.77
3757635.80      0.15522  (16061922)
470982.85  3757697.99      0.27533  (12081622)      471031.88
3757694.40      0.29056  (12072106)
471009.16  3757555.67      0.10973  (13062606)      471036.07
3757657.32      0.21018  (13090421)
471053.41  3757562.85      0.11960  (13062606)      471107.23
3757671.08      0.24198  (12080621)
471017.53  3757717.12      0.29259  (13051106)      471004.38
3757696.19      0.27659  (12072106)
471129.35  3757678.85      0.26082  (12081422)      471097.06
3757724.29      0.37488  (13072706)
471075.53  3757717.12      0.32006  (12072106)

```

```

^ *** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC      ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
***      11:07:22

```

PAGE 10

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

CO
 *** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION

VALUES FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): L0000001 , L0000002

, L0000003	, L0000004	, L0000005	, L0000006	, L0000007	, L0000008	, L0000009	, L0000010
, L0000011	, L0000012	, L0000013	, L0000014	, L0000015	, L0000016	, L0000017	, L0000018
, L0000019	, L0000020	, L0000021	, L0000022	, L0000023	, L0000024	, L0000025	, L0000026
, L0000027	, L0000028	, . . .					

*** DISCRETE CARTESIAN RECEPTOR POINTS

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

X-COORD (M) Y-COORD (M)	Y-COORD (M) CONC (YYMMDDHH)	CONC (YYMMDDHH)	X-COORD (M)
471098.69	3757757.68	0.34167 (16121208)	471080.76
3757752.90	0.26177 (16011524)		
471066.41	3757749.31	0.22704 (12113008)	471066.77
3757738.46	0.22189 (16011524)		
471083.32	3757744.08	0.25998 (16011524)	471100.17
3757749.70	0.32529 (16121208)		
471008.41	3757750.32	0.21979 (16011524)	471023.70
3757748.14	0.22047 (16011524)		
471009.34	3757740.96	0.21563 (16011524)	471026.51
3757734.09	0.21643 (16011524)		
471117.99	3757733.26	0.31425 (16121208)	471144.90
3757690.21	0.23643 (16121208)		
471175.99	3757636.40	0.18877c (13012708)	471182.57
3757626.83	0.17586c (13012708)		
471189.14	3757614.87	0.16413c (12121708)	471195.12
3757607.10	0.16081c (12121708)		
471178.98	3757583.18	0.14061c (12121708)	471161.04
3757576.60	0.13168c (12121708)		
471134.13	3757578.99	0.12797c (13012708)	471064.77
3757654.33	0.16203c (13012708)		
471059.99	3757663.30	0.17337c (13012708)	471085.70
3757611.28	0.13089c (13012708)		
471088.09	3757587.96	0.11896c (12121708)	471097.06
3757570.62	0.11274c (12121708)		
471004.98	3757599.32	0.10849c (12121708)	471006.77
3757635.80	0.12748c (12121708)		
470982.85	3757697.99	0.18329 (16010924)	471031.88

			CO	
3757694.40	0.18841	(12031708)		
471009.16	3757555.67	0.09320c	(12121708)	471036.07
3757657.32	0.15714c	(13012708)		
471053.41	3757562.85	0.10157c	(12121708)	471107.23
3757671.08	0.19040c	(13012708)		
471017.53	3757717.12	0.20611	(16011524)	471004.38
3757696.19	0.18685	(16011524)		
471129.35	3757678.85	0.20553c	(13012708)	471097.06
3757724.29	0.27099c	(13012708)		
471075.53	3757717.12	0.22582	(16011524)	

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS

AVERAGED OVER 5 YEARS ***

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

**

GROUP ID		NETWORK	AVERAGE CONC	RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG)		OF TYPE GRID-ID		
- - - - -				
ALL	1ST HIGHEST VALUE IS		0.13426 AT (	471098.69, 3757757.68,
421.25,	939.00, 0.00) DC			
	2ND HIGHEST VALUE IS		0.12836 AT (	471100.17, 3757749.70,
420.20,	939.00, 0.00) DC			
	3RD HIGHEST VALUE IS		0.12821 AT (	471117.99, 3757733.26,
415.94,	939.00, 0.00) DC			
	4TH HIGHEST VALUE IS		0.10580 AT (	471097.06, 3757724.29,
418.66,	939.00, 0.00) DC			
	5TH HIGHEST VALUE IS		0.10035 AT (	471080.76, 3757752.90,
427.54,	939.00, 0.00) DC			
	6TH HIGHEST VALUE IS		0.09958 AT (	471083.32, 3757744.08,
425.72,	939.00, 0.00) DC			
	7TH HIGHEST VALUE IS		0.09782 AT (	471144.90, 3757690.21,
412.94,	939.00, 0.00) DC			
	8TH HIGHEST VALUE IS		0.08586 AT (	471129.35, 3757678.85,

CO

410.41, 939.00, 0.00) DC
 9TH HIGHEST VALUE IS 0.08414 AT (471066.41, 3757749.31,
 431.04, 939.00, 0.00) DC
 10TH HIGHEST VALUE IS 0.08298 AT (471075.53, 3757717.12,
 424.36, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR

RESULTS ***

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

**

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

ALL HIGH 1ST HIGH VALUE IS 0.46463 ON 13072706: AT (471098.69,
 3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:07:22

PAGE 13

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

CO

*** THE SUMMARY OF HIGHEST 8-HR

RESULTS ***

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

**

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

ALL HIGH 1ST HIGH VALUE IS 0.34167 ON 16121208: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGGAS\TOGGAS.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:07:22

PAGE 14

*** MODELOPTs: RegDFAULT CONC ELEV 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

CO

***** WARNING MESSAGES *****

ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50

ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**

** AERMOD INPUT PRODUCED BY:

** AERMOD VIEW VER. 9.7.0

** LAKES ENVIRONMENTAL SOFTWARE INC.

** DATE: 9/17/2019

** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\TOGDSL\TOGDSL.ADI

**

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\TOGDSL\TOGDSL.ISC

MODELOPT DFAULT CONC

AVERTIME 1 8

URBANOPT 2189641

POLLUTID TOGDSL

RUNORNOT RUN

ERRORFIL TOGDSL.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

**

CO

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 0.00094

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

** 470813.794, 3757852.980, 397.85, 3.49, 16.74

** 470925.656, 3757855.794, 405.26, 3.49, 16.74

** 471025.559, 3757852.277, 411.05, 3.49, 16.74

** 471105.762, 3757833.281, 414.24, 3.49, 16.74

** 471145.160, 3757822.025, 415.90, 3.49, 16.74

** 471200.036, 3757800.215, 417.93, 3.49, 16.74

** 471303.456, 3757745.339, 421.00, 3.49, 16.74

** 471435.018, 3757619.406, 420.70, 3.49, 16.74

** 471617.937, 3757455.482, 426.96, 3.49, 16.74

** 471722.764, 3757300.000, 436.09, 3.49, 16.74

** -----

LOCATION L0000001	VOLUME	470689.523	3757857.646	392.70
LOCATION L0000002	VOLUME	470725.209	3757852.906	393.32
LOCATION L0000003	VOLUME	470760.896	3757848.167	394.45
LOCATION L0000004	VOLUME	470796.732	3757851.366	396.67
LOCATION L0000005	VOLUME	470832.650	3757853.455	398.77
LOCATION L0000006	VOLUME	470868.639	3757854.360	401.34
LOCATION L0000007	VOLUME	470904.628	3757855.265	403.71
LOCATION L0000008	VOLUME	470940.612	3757855.268	405.71
LOCATION L0000009	VOLUME	470976.589	3757854.001	408.28
LOCATION L0000010	VOLUME	471012.567	3757852.734	410.59
LOCATION L0000011	VOLUME	471047.940	3757846.976	411.26
LOCATION L0000012	VOLUME	471082.971	3757838.679	413.04
LOCATION L0000013	VOLUME	471117.856	3757829.826	415.15
LOCATION L0000014	VOLUME	471152.226	3757819.216	416.69
LOCATION L0000015	VOLUME	471185.681	3757805.920	418.12
LOCATION L0000016	VOLUME	471218.191	3757790.582	418.09
LOCATION L0000017	VOLUME	471249.992	3757773.708	418.04
LOCATION L0000018	VOLUME	471281.792	3757756.834	421.00
LOCATION L0000019	VOLUME	471311.746	3757737.404	421.00
LOCATION L0000020	VOLUME	471337.752	3757712.511	420.97
LOCATION L0000021	VOLUME	471363.758	3757687.617	420.94
LOCATION L0000022	VOLUME	471389.764	3757662.724	420.79
LOCATION L0000023	VOLUME	471415.770	3757637.830	420.12
LOCATION L0000024	VOLUME	471441.985	3757613.162	421.00
LOCATION L0000025	VOLUME	471468.795	3757589.136	421.18

CO

LOCATION L0000026	VOLUME	471495.604	3757565.111	421.89
LOCATION L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION L0000035	VOLUME	471707.231	3757323.039	435.04

** END OF LINE VOLUME SOURCE ID = SLINE1

** SOURCE PARAMETERS **

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM L0000001	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000002	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000003	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000004	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000005	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000006	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000007	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000008	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000009	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000010	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000011	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000012	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000013	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000014	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000015	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000016	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000017	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000018	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000019	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000020	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000021	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000022	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000023	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000024	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000025	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000026	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000027	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000028	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000029	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000030	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000031	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000032	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000033	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000034	0.0000268571	3.49	16.74	3.25
SRCPARAM L0000035	0.0000268571	3.49	16.74	3.25

CO

** -----

URBANSRC ALL

SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING

INCLUDED TOGDSL.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING

SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC

PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL

SURFDATA 3171 2012

UAIRDATA 3190 2012

PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

RECTABLE ALLAVE 1ST

RECTABLE 1 1ST

RECTABLE 8 1ST

** AUTO-GENERATED PLOTFILES

PLOTFILE 1 ALL 1ST TOGDSL.AD\01H1GALL.PLT 31

PLOTFILE 8 ALL 1ST TOGDSL.AD\08H1GALL.PLT 32

SUMMFILE TOGDSL.SUM

OU FINISHED

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

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

A Total of 0 Fatal Error Message(s)

CO
A Total of 2 Warning Message(s)
A Total of 0 Informational Message(s)

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

***** WARNING MESSAGES *****
ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:06:37

PAGE 1
*** MODELOPTs: RegDEFAULT CONC ELEV 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 35 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.

CO

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

CCVR_Sub - Meteorological data includes CCVR substitutions

TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: TOGDSL

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

**This Run Includes: 35 Source(s); 1 Source Group(s); and 37
Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 35 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 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) = 245.00 ; Decay
Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;

CO
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: TOGDSL.ERR

**File for Summary of Results: TOGDSL.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:06:37

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

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
INIT.	SOURCE	EMISSION	RATE			ELEV.	HEIGHT	SY
SZ	SOURCE	SCALAR	VARY			(METERS)	(METERS)	(METERS)
ID		CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
(METERS)		BY						
L0000001		0	0.26857E-04	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.26857E-04	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.26857E-04	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.26857E-04	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.26857E-04	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.26857E-04	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							
L0000007		0	0.26857E-04	470904.6	3757855.3	403.7	3.49	16.74
3.25	YES							

				CO			
L0000008	0	0.26857E-04	470940.6	3757855.3	405.7	3.49	16.74
3.25 YES							
L0000009	0	0.26857E-04	470976.6	3757854.0	408.3	3.49	16.74
3.25 YES							
L0000010	0	0.26857E-04	471012.6	3757852.7	410.6	3.49	16.74
3.25 YES							
L0000011	0	0.26857E-04	471047.9	3757847.0	411.3	3.49	16.74
3.25 YES							
L0000012	0	0.26857E-04	471083.0	3757838.7	413.0	3.49	16.74
3.25 YES							
L0000013	0	0.26857E-04	471117.9	3757829.8	415.2	3.49	16.74
3.25 YES							
L0000014	0	0.26857E-04	471152.2	3757819.2	416.7	3.49	16.74
3.25 YES							
L0000015	0	0.26857E-04	471185.7	3757805.9	418.1	3.49	16.74
3.25 YES							
L0000016	0	0.26857E-04	471218.2	3757790.6	418.1	3.49	16.74
3.25 YES							
L0000017	0	0.26857E-04	471250.0	3757773.7	418.0	3.49	16.74
3.25 YES							
L0000018	0	0.26857E-04	471281.8	3757756.8	421.0	3.49	16.74
3.25 YES							
L0000019	0	0.26857E-04	471311.7	3757737.4	421.0	3.49	16.74
3.25 YES							
L0000020	0	0.26857E-04	471337.8	3757712.5	421.0	3.49	16.74
3.25 YES							
L0000021	0	0.26857E-04	471363.8	3757687.6	420.9	3.49	16.74
3.25 YES							
L0000022	0	0.26857E-04	471389.8	3757662.7	420.8	3.49	16.74
3.25 YES							
L0000023	0	0.26857E-04	471415.8	3757637.8	420.1	3.49	16.74
3.25 YES							
L0000024	0	0.26857E-04	471442.0	3757613.2	421.0	3.49	16.74
3.25 YES							
L0000025	0	0.26857E-04	471468.8	3757589.1	421.2	3.49	16.74
3.25 YES							
L0000026	0	0.26857E-04	471495.6	3757565.1	421.9	3.49	16.74
3.25 YES							
L0000027	0	0.26857E-04	471522.4	3757541.1	423.2	3.49	16.74
3.25 YES							
L0000028	0	0.26857E-04	471549.2	3757517.1	425.0	3.49	16.74
3.25 YES							
L0000029	0	0.26857E-04	471576.0	3757493.0	424.6	3.49	16.74
3.25 YES							
L0000030	0	0.26857E-04	471602.8	3757469.0	426.4	3.49	16.74
3.25 YES							
L0000031	0	0.26857E-04	471626.7	3757442.4	427.5	3.49	16.74
3.25 YES							

CO

L0000032	0	0.26857E-04	471646.9	3757412.6	429.9	3.49	16.74
3.25 YES							
L0000033	0	0.26857E-04	471667.0	3757382.7	431.4	3.49	16.74
3.25 YES							
L0000034	0	0.26857E-04	471687.1	3757352.9	433.0	3.49	16.74
3.25 YES							
L0000035	0	0.26857E-04	471707.2	3757323.0	435.0	3.49	16.74
3.25 YES							

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:06:37

PAGE 3

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID	SOURCE IDs
-----	-----
ALL	L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006	, L0000007 , L0000008 ,
	L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014	, L0000015 , L0000016 ,
	L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022	, L0000023 , L0000024 ,
	L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
L0000030	, L0000031 , L0000032 ,
	L0000033 , L0000034 , L0000035 ,

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:06:37

PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

CO

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000005	2189641.	L0000001 , L0000002 , L0000003 , L0000004 ,
L0000008	, L0000006 ,	, L0000007 ,
L0000014	L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,	
	, L0000015 , L0000016 ,	
L0000022	L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,	
	, L0000023 , L0000024 ,	
L0000030	L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,	
	, L0000031 , L0000032 ,	
	L0000033 , L0000034 , L0000035 ,	
▲ *** AERMOD - VERSION 19191 *** C:\LAKES\AERMOD VIEW\12585		
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19		
*** AERMET - VERSION 16216 ***		
*** 11:06:37		

PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8, 3757752.9, 427.5, 939.0, 0.0);
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8, 3757738.5, 429.9, 939.0, 0.0);
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2, 3757749.7, 420.2, 939.0, 0.0);
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7, 3757748.1, 428.0, 939.0, 0.0);
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5, 3757734.1, 426.5, 939.0, 0.0);
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9, 3757690.2, 412.9, 939.0, 0.0);
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6, 3757626.8, 410.6, 939.0, 0.0);
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1, 3757607.1, 407.6, 939.0, 0.0);
(471179.0, 3757583.2, 407.8, 939.0, 0.0);	(471161.0, 3757583.2, 407.8, 939.0, 0.0);

```

                                CO
3757576.6,      407.1,      939.0,      0.0);
      ( 471134.1, 3757579.0,      408.2,      939.0,      0.0);      ( 471064.8,
3757654.3,      408.3,      939.0,      0.0);
      ( 471060.0, 3757663.3,      410.2,      939.0,      0.0);      ( 471085.7,
3757611.3,      406.0,      939.0,      0.0);
      ( 471088.1, 3757588.0,      403.2,      939.0,      0.0);      ( 471097.1,
3757570.6,      401.2,      939.0,      0.0);
      ( 471005.0, 3757599.3,      397.9,      939.0,      0.0);      ( 471006.8,
3757635.8,      402.7,      939.0,      0.0);
      ( 470982.8, 3757698.0,      413.2,      939.0,      0.0);      ( 471031.9,
3757694.4,      418.2,      939.0,      0.0);
      ( 471009.2, 3757555.7,      396.0,      939.0,      0.0);      ( 471036.1,
3757657.3,      407.4,      939.0,      0.0);
      ( 471053.4, 3757562.8,      397.5,      939.0,      0.0);      ( 471107.2,
3757671.1,      409.3,      939.0,      0.0);
      ( 471017.5, 3757717.1,      423.7,      939.0,      0.0);      ( 471004.4,
3757696.2,      419.4,      939.0,      0.0);
      ( 471129.3, 3757678.8,      410.4,      939.0,      0.0);      ( 471097.1,
3757724.3,      418.7,      939.0,      0.0);
      ( 471075.5, 3757717.1,      424.4,      939.0,      0.0);

```

```

^ *** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC      ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
***      11:06:37

```

```

                                PAGE 6
*** MODELOPTs:      RegDFAULT  CONC  ELEV  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 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

```

CO

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 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
*** AERMET - VERSION 16216 ***
*** 11:06:37

PAGE 7
*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

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

Surface file: ..\KRAL_V9_ADJU\KRAL_V9.SFC
Met Version: 16216
Profile file: ..\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	

CO

1.00	2.52	77.	10.1	285.9	2.0								
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40
1.00	2.30	80.	10.1	285.4	2.0								
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40
1.00	1.93	79.	10.1	287.0	2.0								
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40
1.00	1.96	77.	10.1	284.2	2.0								
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40
0.53	1.89	77.	10.1	288.1	2.0								
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40
0.31	2.10	81.	10.1	289.2	2.0								
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40
0.24	1.99	101.	10.1	296.4	2.0								
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40
0.21	3.68	78.	10.1	298.8	2.0								
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40
0.20	2.89	68.	10.1	300.4	2.0								
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40
0.20	2.57	64.	10.1	302.5	2.0								
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40
0.22	3.37	63.	10.1	303.1	2.0								
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40
0.25	3.59	62.	10.1	302.5	2.0								
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40
0.34	3.76	69.	10.1	300.9	2.0								
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40
0.62	3.03	59.	10.1	297.5	2.0								
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

CO
 *** AERMOD - VERSION 19191 *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
 *** AERMET - VERSION 16216 ***
 *** 11:06:37

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

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION
 VALUES FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000001 , L0000002
 , L0000003 , L0000004 , L0000005 ,
 L0000006 , L0000007 , L0000008 , L0000009 , L0000010
 , L0000011 , L0000012 , L0000013 ,
 L0000014 , L0000015 , L0000016 , L0000017 , L0000018
 , L0000019 , L0000020 , L0000021 ,
 L0000022 , L0000023 , L0000024 , L0000025 , L0000026
 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)
Y-COORD (M)	CONC	(YYMMDDHH)		
471098.69	3757757.68	0.06889	(13072706)	471080.76
3757752.90	0.05865	(12060406)		
471066.41	3757749.31	0.05119	(12060406)	471066.77
3757738.46	0.04853	(13051106)		
471083.32	3757744.08	0.05578	(12060406)	471100.17
3757749.70	0.06581	(13072706)		
471008.41	3757750.32	0.04813	(13051106)	471023.70
3757748.14	0.04829	(13051106)		
471009.34	3757740.96	0.04685	(13051106)	471026.51
3757734.09	0.04661	(13051106)		
471117.99	3757733.26	0.05891	(13063022)	471144.90
3757690.21	0.04466	(15080601)		
471175.99	3757636.40	0.03690	(12080621)	471182.57
3757626.83	0.03344	(12080621)		
471189.14	3757614.87	0.02958	(12080624)	471195.12
3757607.10	0.02851	(12080621)		
471178.98	3757583.18	0.02611	(13090421)	471161.04
3757576.60	0.02469	(13090421)		
471134.13	3757578.99	0.02530	(16082823)	471064.77

				CO	
3757654.33	0.03190	(13090421)			
471059.99	3757663.30	0.03529	(13090421)		471085.70
3757611.28	0.02487	(13090421)			
471088.09	3757587.96	0.02078	(13062606)		471097.06
3757570.62	0.01968	(13062606)			
471004.98	3757599.32	0.01894	(13062606)		471006.77
3757635.80	0.02301	(16061922)			
470982.85	3757697.99	0.04082	(12081622)		471031.88
3757694.40	0.04308	(12072106)			
471009.16	3757555.67	0.01627	(13062606)		471036.07
3757657.32	0.03116	(13090421)			
471053.41	3757562.85	0.01773	(13062606)		471107.23
3757671.08	0.03588	(12080621)			
471017.53	3757717.12	0.04338	(13051106)		471004.38
3757696.19	0.04101	(12072106)			
471129.35	3757678.85	0.03867	(12081422)		471097.06
3757724.29	0.05558	(13072706)			
471075.53	3757717.12	0.04745	(12072106)		

^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
 HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:06:37

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

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION

 VALUES FOR SOURCE GROUP: ALL INCLUDING SOURCE(S): L0000001 , L0000002
 , L0000003 , L0000004 , L0000005 ,
 L0000006 , L0000007 , L0000008 , L0000009 , L0000010
 , L0000011 , L0000012 , L0000013 ,
 L0000014 , L0000015 , L0000016 , L0000017 , L0000018
 , L0000019 , L0000020 , L0000021 ,
 L0000022 , L0000023 , L0000024 , L0000025 , L0000026
 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF TOGDSL IN MICROGRAMS/M**3
 **
 X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M)
 Y-COORD (M) CONC (YYMMDDHH)
 - - - - -
 - - - - -

			C0	
471098.69	3757757.68	0.05066	(16121208)	471080.76
3757752.90	0.03881 (16011524)			
471066.41	3757749.31	0.03366	(12113008)	471066.77
3757738.46	0.03290 (16011524)			
471083.32	3757744.08	0.03855	(16011524)	471100.17
3757749.70	0.04823 (16121208)			
471008.41	3757750.32	0.03259	(16011524)	471023.70
3757748.14	0.03269 (16011524)			
471009.34	3757740.96	0.03197	(16011524)	471026.51
3757734.09	0.03209 (16011524)			
471117.99	3757733.26	0.04659	(16121208)	471144.90
3757690.21	0.03505 (16121208)			
471175.99	3757636.40	0.02799c	(13012708)	471182.57
3757626.83	0.02607c (13012708)			
471189.14	3757614.87	0.02434c	(12121708)	471195.12
3757607.10	0.02384c (12121708)			
471178.98	3757583.18	0.02085c	(12121708)	471161.04
3757576.60	0.01952c (12121708)			
471134.13	3757578.99	0.01897c	(13012708)	471064.77
3757654.33	0.02402c (13012708)			
471059.99	3757663.30	0.02571c	(13012708)	471085.70
3757611.28	0.01941c (13012708)			
471088.09	3757587.96	0.01764c	(12121708)	471097.06
3757570.62	0.01672c (12121708)			
471004.98	3757599.32	0.01609c	(12121708)	471006.77
3757635.80	0.01890c (12121708)			
470982.85	3757697.99	0.02717	(16010924)	471031.88
3757694.40	0.02793 (12031708)			
471009.16	3757555.67	0.01382c	(12121708)	471036.07
3757657.32	0.02330c (13012708)			
471053.41	3757562.85	0.01506c	(12121708)	471107.23
3757671.08	0.02823c (13012708)			
471017.53	3757717.12	0.03056	(16011524)	471004.38
3757696.19	0.02770 (16011524)			
471129.35	3757678.85	0.03047c	(13012708)	471097.06
3757724.29	0.04018c (13012708)			
471075.53	3757717.12	0.03348	(16011524)	

```

^ *** AERMOD - VERSION 19191 ***      *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC                  ***      09/17/19
*** AERMET - VERSION 16216 ***      ***
***                                     11:06:37

```

PAGE 10

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ U*

*** THE SUMMARY OF HIGHEST 1-HR

RESULTS ***

CO

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

**

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

ALL HIGH 1ST HIGH VALUE IS 0.06889 ON 13072706: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:06:37

PAGE 11

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 8-HR

RESULTS ***

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

**

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

ALL HIGH 1ST HIGH VALUE IS 0.05066 ON 16121208: AT (471098.69,
3757757.68, 421.25, 939.00, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR

CO

DC = DISCCART

DP = DISCPOLR

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585
HRA\TOGDSL\TOGDSL.ISC *** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:06:37

PAGE 12

*** MODELOPTs: RegDEFAULT CONC ELEV 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

***** FATAL ERROR MESSAGES *****

*** NONE ***

***** WARNING MESSAGES *****

ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50

ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**

**

** AERMOD INPUT PRODUCED BY:

** AERMOD VIEW VER. 9.7.0

** LAKES ENVIRONMENTAL SOFTWARE INC.

** DATE: 9/17/2019

** FILE: C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ADI

**

CO

**

**

** AERMOD CONTROL PATHWAY

**

**

CO STARTING

TITLEONE C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC

MODELOPT DFAULT CONC

AVERTIME ANNUAL

URBANOPT 2189641

POLLUTID DPM

RUNORNOT RUN

ERRORFIL DPM.ERR

CO FINISHED

**

** AERMOD SOURCE PATHWAY

**

**

SO STARTING

** SOURCE LOCATION **

** SOURCE ID - TYPE - X COORD. - Y COORD. **

** -----

** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES

** LINE VOLUME SOURCE ID = SLINE1

** DESCRSRC FREEWAY

** PREFIX

** LENGTH OF SIDE = 36.00

** CONFIGURATION = ADJACENT

** EMISSION RATE = 0.00244

** VERTICAL DIMENSION = 6.99

** SZINIT = 3.25

** NODES = 12

** 470671.679, 3757860.016, 392.27, 3.49, 16.74

** 470761.732, 3757848.056, 394.95, 3.49, 16.74

** 470813.794, 3757852.980, 397.85, 3.49, 16.74

** 470925.656, 3757855.794, 405.26, 3.49, 16.74

** 471025.559, 3757852.277, 411.05, 3.49, 16.74

** 471105.762, 3757833.281, 414.24, 3.49, 16.74

** 471145.160, 3757822.025, 415.90, 3.49, 16.74

** 471200.036, 3757800.215, 417.93, 3.49, 16.74

** 471303.456, 3757745.339, 421.00, 3.49, 16.74

** 471435.018, 3757619.406, 420.70, 3.49, 16.74

** 471617.937, 3757455.482, 426.96, 3.49, 16.74

CO

** 471722.764, 3757300.000, 436.09, 3.49, 16.74

**

LOCATION	L0000001	VOLUME	470689.523	3757857.646	392.70
LOCATION	L0000002	VOLUME	470725.209	3757852.906	393.32
LOCATION	L0000003	VOLUME	470760.896	3757848.167	394.45
LOCATION	L0000004	VOLUME	470796.732	3757851.366	396.67
LOCATION	L0000005	VOLUME	470832.650	3757853.455	398.77
LOCATION	L0000006	VOLUME	470868.639	3757854.360	401.34
LOCATION	L0000007	VOLUME	470904.628	3757855.265	403.71
LOCATION	L0000008	VOLUME	470940.612	3757855.268	405.71
LOCATION	L0000009	VOLUME	470976.589	3757854.001	408.28
LOCATION	L0000010	VOLUME	471012.567	3757852.734	410.59
LOCATION	L0000011	VOLUME	471047.940	3757846.976	411.26
LOCATION	L0000012	VOLUME	471082.971	3757838.679	413.04
LOCATION	L0000013	VOLUME	471117.856	3757829.826	415.15
LOCATION	L0000014	VOLUME	471152.226	3757819.216	416.69
LOCATION	L0000015	VOLUME	471185.681	3757805.920	418.12
LOCATION	L0000016	VOLUME	471218.191	3757790.582	418.09
LOCATION	L0000017	VOLUME	471249.992	3757773.708	418.04
LOCATION	L0000018	VOLUME	471281.792	3757756.834	421.00
LOCATION	L0000019	VOLUME	471311.746	3757737.404	421.00
LOCATION	L0000020	VOLUME	471337.752	3757712.511	420.97
LOCATION	L0000021	VOLUME	471363.758	3757687.617	420.94
LOCATION	L0000022	VOLUME	471389.764	3757662.724	420.79
LOCATION	L0000023	VOLUME	471415.770	3757637.830	420.12
LOCATION	L0000024	VOLUME	471441.985	3757613.162	421.00
LOCATION	L0000025	VOLUME	471468.795	3757589.136	421.18
LOCATION	L0000026	VOLUME	471495.604	3757565.111	421.89
LOCATION	L0000027	VOLUME	471522.414	3757541.085	423.20
LOCATION	L0000028	VOLUME	471549.224	3757517.059	424.96
LOCATION	L0000029	VOLUME	471576.034	3757493.034	424.62
LOCATION	L0000030	VOLUME	471602.844	3757469.008	426.36
LOCATION	L0000031	VOLUME	471626.732	3757442.437	427.54
LOCATION	L0000032	VOLUME	471646.857	3757412.588	429.93
LOCATION	L0000033	VOLUME	471666.982	3757382.738	431.42
LOCATION	L0000034	VOLUME	471687.106	3757352.889	433.04
LOCATION	L0000035	VOLUME	471707.231	3757323.039	435.04

** END OF LINE VOLUME SOURCE ID = SLINE1

** SOURCE PARAMETERS **

** LINE VOLUME SOURCE ID = SLINE1

SRCPARAM	L0000001	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000002	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000003	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000004	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000005	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000006	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000007	0.0000697143	3.49	16.74	3.25
SRCPARAM	L0000008	0.0000697143	3.49	16.74	3.25

		CO		
SRCPARAM L0000009	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000010	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000011	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000012	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000013	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000014	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000015	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000016	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000017	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000018	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000019	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000020	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000021	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000022	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000023	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000024	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000025	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000026	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000027	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000028	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000029	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000030	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000031	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000032	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000033	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000034	0.0000697143	3.49	16.74	3.25
SRCPARAM L0000035	0.0000697143	3.49	16.74	3.25

** -----

URBANSRC ALL

SRCGROUP ALL

SO FINISHED

**

** AERMOD RECEPTOR PATHWAY

**

**

RE STARTING

INCLUDED DPM.ROU

RE FINISHED

**

** AERMOD METEOROLOGY PATHWAY

**

**

ME STARTING

SURFFILE ..\KRAL_V9_ADJU\KRAL_V9.SFC

CO

PROFFILE ..\KRAL_V9_ADJU\KRAL_V9.PFL
SURFDATA 3171 2012
UAIRDATA 3190 2012
PROFBASE 245.0 METERS

ME FINISHED

**

** AERMOD OUTPUT PATHWAY

**

**

OU STARTING

** AUTO-GENERATED PLOTFILES

PLOTFILE ANNUAL ALL DPM.AD\AN00GALL.PLT 31

SUMMFILE DPM.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 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:03:39

PAGE 1
*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

CO

*** 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 35 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
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates ANNUAL Averages Only

**This Run Includes: 35 Source(s); 1 Source Group(s); and 37
Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 35 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 0 line(s)

CO

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

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of ANNUAL Averages by Receptor

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) = 245.00 ; 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: DPM.ERR

**File for Summary of Results: DPM.SUM

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:03:39

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

*** VOLUME SOURCE DATA ***

NUMBER EMISSION RATE BASE RELEASE INIT.

				CO				
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						

L0000001		0	0.69714E-04	470689.5	3757857.6	392.7	3.49	16.74
3.25	YES							
L0000002		0	0.69714E-04	470725.2	3757852.9	393.3	3.49	16.74
3.25	YES							
L0000003		0	0.69714E-04	470760.9	3757848.2	394.4	3.49	16.74
3.25	YES							
L0000004		0	0.69714E-04	470796.7	3757851.4	396.7	3.49	16.74
3.25	YES							
L0000005		0	0.69714E-04	470832.6	3757853.5	398.8	3.49	16.74
3.25	YES							
L0000006		0	0.69714E-04	470868.6	3757854.4	401.3	3.49	16.74
3.25	YES							
L0000007		0	0.69714E-04	470904.6	3757855.3	403.7	3.49	16.74
3.25	YES							
L0000008		0	0.69714E-04	470940.6	3757855.3	405.7	3.49	16.74
3.25	YES							
L0000009		0	0.69714E-04	470976.6	3757854.0	408.3	3.49	16.74
3.25	YES							
L0000010		0	0.69714E-04	471012.6	3757852.7	410.6	3.49	16.74
3.25	YES							
L0000011		0	0.69714E-04	471047.9	3757847.0	411.3	3.49	16.74
3.25	YES							
L0000012		0	0.69714E-04	471083.0	3757838.7	413.0	3.49	16.74
3.25	YES							
L0000013		0	0.69714E-04	471117.9	3757829.8	415.2	3.49	16.74
3.25	YES							
L0000014		0	0.69714E-04	471152.2	3757819.2	416.7	3.49	16.74
3.25	YES							
L0000015		0	0.69714E-04	471185.7	3757805.9	418.1	3.49	16.74
3.25	YES							
L0000016		0	0.69714E-04	471218.2	3757790.6	418.1	3.49	16.74
3.25	YES							
L0000017		0	0.69714E-04	471250.0	3757773.7	418.0	3.49	16.74
3.25	YES							
L0000018		0	0.69714E-04	471281.8	3757756.8	421.0	3.49	16.74
3.25	YES							
L0000019		0	0.69714E-04	471311.7	3757737.4	421.0	3.49	16.74
3.25	YES							
L0000020		0	0.69714E-04	471337.8	3757712.5	421.0	3.49	16.74
3.25	YES							

				CO			
L0000021	0	0.69714E-04	471363.8	3757687.6	420.9	3.49	16.74
3.25 YES							
L0000022	0	0.69714E-04	471389.8	3757662.7	420.8	3.49	16.74
3.25 YES							
L0000023	0	0.69714E-04	471415.8	3757637.8	420.1	3.49	16.74
3.25 YES							
L0000024	0	0.69714E-04	471442.0	3757613.2	421.0	3.49	16.74
3.25 YES							
L0000025	0	0.69714E-04	471468.8	3757589.1	421.2	3.49	16.74
3.25 YES							
L0000026	0	0.69714E-04	471495.6	3757565.1	421.9	3.49	16.74
3.25 YES							
L0000027	0	0.69714E-04	471522.4	3757541.1	423.2	3.49	16.74
3.25 YES							
L0000028	0	0.69714E-04	471549.2	3757517.1	425.0	3.49	16.74
3.25 YES							
L0000029	0	0.69714E-04	471576.0	3757493.0	424.6	3.49	16.74
3.25 YES							
L0000030	0	0.69714E-04	471602.8	3757469.0	426.4	3.49	16.74
3.25 YES							
L0000031	0	0.69714E-04	471626.7	3757442.4	427.5	3.49	16.74
3.25 YES							
L0000032	0	0.69714E-04	471646.9	3757412.6	429.9	3.49	16.74
3.25 YES							
L0000033	0	0.69714E-04	471667.0	3757382.7	431.4	3.49	16.74
3.25 YES							
L0000034	0	0.69714E-04	471687.1	3757352.9	433.0	3.49	16.74
3.25 YES							
L0000035	0	0.69714E-04	471707.2	3757323.0	435.0	3.49	16.74
3.25 YES							

*** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 *** ***
 *** 11:03:39

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

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID

SOURCE IDs

ALL L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
 L0000006 , L0000007 , L0000008 ,

CO

```

      L0000009      , L0000010      , L0000011      , L0000012      , L0000013      ,
L0000014      , L0000015      , L0000016      ,
      L0000017      , L0000018      , L0000019      , L0000020      , L0000021      ,
L0000022      , L0000023      , L0000024      ,
      L0000025      , L0000026      , L0000027      , L0000028      , L0000029      ,
L0000030      , L0000031      , L0000032      ,
      L0000033      , L0000034      , L0000035      ,
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
      *** 09/17/19
*** AERMET - VERSION 16216 *** ***
      *** 11:03:39
```

PAGE 4

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

```

      URBAN ID      URBAN POP      SOURCE IDs
      -----      -
      2189641.      L0000001      , L0000002      , L0000003      , L0000004      ,
L0000005      , L0000006      , L0000007      ,
L0000008      ,
      L0000009      , L0000010      , L0000011      , L0000012      , L0000013      ,
L0000014      , L0000015      , L0000016      ,
      L0000017      , L0000018      , L0000019      , L0000020      , L0000021      ,
L0000022      , L0000023      , L0000024      ,
      L0000025      , L0000026      , L0000027      , L0000028      , L0000029      ,
L0000030      , L0000031      , L0000032      ,
      L0000033      , L0000034      , L0000035      ,
^ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
      *** 09/17/19
*** AERMET - VERSION 16216 *** ***
      *** 11:03:39
```

PAGE 5

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

CO

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

(471098.7, 3757757.7, 421.2, 939.0, 0.0);	(471080.8,
3757752.9, 427.5, 939.0, 0.0);	
(471066.4, 3757749.3, 431.0, 939.0, 0.0);	(471066.8,
3757738.5, 429.9, 939.0, 0.0);	
(471083.3, 3757744.1, 425.7, 939.0, 0.0);	(471100.2,
3757749.7, 420.2, 939.0, 0.0);	
(471008.4, 3757750.3, 427.2, 939.0, 0.0);	(471023.7,
3757748.1, 428.0, 939.0, 0.0);	
(471009.3, 3757741.0, 426.4, 939.0, 0.0);	(471026.5,
3757734.1, 426.5, 939.0, 0.0);	
(471118.0, 3757733.3, 415.9, 939.0, 0.0);	(471144.9,
3757690.2, 412.9, 939.0, 0.0);	
(471176.0, 3757636.4, 412.8, 939.0, 0.0);	(471182.6,
3757626.8, 410.6, 939.0, 0.0);	
(471189.1, 3757614.9, 408.2, 939.0, 0.0);	(471195.1,
3757607.1, 407.6, 939.0, 0.0);	
(471179.0, 3757583.2, 407.8, 939.0, 0.0);	(471161.0,
3757576.6, 407.1, 939.0, 0.0);	
(471134.1, 3757579.0, 408.2, 939.0, 0.0);	(471064.8,
3757654.3, 408.3, 939.0, 0.0);	
(471060.0, 3757663.3, 410.2, 939.0, 0.0);	(471085.7,
3757611.3, 406.0, 939.0, 0.0);	
(471088.1, 3757588.0, 403.2, 939.0, 0.0);	(471097.1,
3757570.6, 401.2, 939.0, 0.0);	
(471005.0, 3757599.3, 397.9, 939.0, 0.0);	(471006.8,
3757635.8, 402.7, 939.0, 0.0);	
(470982.8, 3757698.0, 413.2, 939.0, 0.0);	(471031.9,
3757694.4, 418.2, 939.0, 0.0);	
(471009.2, 3757555.7, 396.0, 939.0, 0.0);	(471036.1,
3757657.3, 407.4, 939.0, 0.0);	
(471053.4, 3757562.8, 397.5, 939.0, 0.0);	(471107.2,
3757671.1, 409.3, 939.0, 0.0);	
(471017.5, 3757717.1, 423.7, 939.0, 0.0);	(471004.4,
3757696.2, 419.4, 939.0, 0.0);	
(471129.3, 3757678.8, 410.4, 939.0, 0.0);	(471097.1,
3757724.3, 418.7, 939.0, 0.0);	
(471075.5, 3757717.1, 424.4, 939.0, 0.0);	

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
*** 09/17/19
*** AERMET - VERSION 16216 *** ***
*** 11:03:39

CO

Surface format: FREE

Profile format: FREE

Surface station no.: 3171
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2012

Year: 2012

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							
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	
1.00	2.93	55.	10.1	288.1	2.0									
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	
1.00	3.05	55.	10.1	287.0	2.0									
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	
1.00	2.45	74.	10.1	284.2	2.0									
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	
1.00	2.52	77.	10.1	285.9	2.0									
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	
1.00	2.30	80.	10.1	285.4	2.0									
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	
1.00	1.93	79.	10.1	287.0	2.0									
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	
1.00	1.96	77.	10.1	284.2	2.0									
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	
0.53	1.89	77.	10.1	288.1	2.0									
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	
0.31	2.10	81.	10.1	289.2	2.0									
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	
0.24	1.99	101.	10.1	296.4	2.0									
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	
0.21	3.68	78.	10.1	298.8	2.0									
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	
0.20	2.89	68.	10.1	300.4	2.0									
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	
0.20	2.57	64.	10.1	302.5	2.0									
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40	
0.22	3.37	63.	10.1	303.1	2.0									
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40	
0.25	3.59	62.	10.1	302.5	2.0									
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40	
0.34	3.76	69.	10.1	300.9	2.0									
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40	

CO

0.62	3.03	59.	10.1	297.5	2.0								
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40
1.00	2.54	54.	10.1	295.4	2.0								
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40
1.00	2.27	79.	10.1	292.0	2.0								
12	01	01	1	20	-20.7	0.218	-9.000	-9.000	-999.	244.	52.2	0.15	2.40
1.00	2.42	79.	10.1	292.5	2.0								
12	01	01	1	21	-19.7	0.206	-9.000	-9.000	-999.	225.	46.9	0.15	2.40
1.00	2.30	95.	10.1	290.9	2.0								
12	01	01	1	22	-17.6	0.190	-9.000	-9.000	-999.	199.	39.8	0.15	2.40
1.00	2.13	78.	10.1	290.4	2.0								
12	01	01	1	23	-20.3	0.211	-9.000	-9.000	-999.	233.	49.0	0.15	2.40
1.00	2.35	52.	10.1	289.2	2.0								
12	01	01	1	24	-16.4	0.183	-9.000	-9.000	-999.	189.	37.0	0.15	2.40
1.00	2.06	75.	10.1	288.8	2.0								

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.1	1	55.	2.93	288.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 19191 ***
 *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
 *** 09/17/19
 *** AERMET - VERSION 16216 ***
 *** 11:03:39

PAGE 8

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5
 YEARS FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000001 , L0000002
 , L0000003 , L0000004 , L0000005 ,
 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010
 , L0000011 , L0000012 , L0000013 ,
 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018
 , L0000019 , L0000020 , L0000021 ,
 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026
 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

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

**

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

CO

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS

AVERAGED OVER 5 YEARS ***

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

**

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG)	OF TYPE GRID-ID		
ALL	1ST HIGHEST VALUE IS	0.05167 AT (	471098.69, 3757757.68,
421.25,	939.00, 0.00) DC		
	2ND HIGHEST VALUE IS	0.04940 AT (	471100.17, 3757749.70,
420.20,	939.00, 0.00) DC		
	3RD HIGHEST VALUE IS	0.04934 AT (	471117.99, 3757733.26,
415.94,	939.00, 0.00) DC		
	4TH HIGHEST VALUE IS	0.04072 AT (	471097.06, 3757724.29,
418.66,	939.00, 0.00) DC		
	5TH HIGHEST VALUE IS	0.03862 AT (	471080.76, 3757752.90,
427.54,	939.00, 0.00) DC		
	6TH HIGHEST VALUE IS	0.03832 AT (	471083.32, 3757744.08,
425.72,	939.00, 0.00) DC		
	7TH HIGHEST VALUE IS	0.03765 AT (	471144.90, 3757690.21,
412.94,	939.00, 0.00) DC		
	8TH HIGHEST VALUE IS	0.03305 AT (	471129.35, 3757678.85,
410.41,	939.00, 0.00) DC		
	9TH HIGHEST VALUE IS	0.03238 AT (	471066.41, 3757749.31,
431.04,	939.00, 0.00) DC		
	10TH HIGHEST VALUE IS	0.03193 AT (	471075.53, 3757717.12,
424.36,	939.00, 0.00) DC		

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

▲ *** AERMOD - VERSION 19191 *** *** C:\LAKES\AERMOD VIEW\12585 HRA\DPM\DPM.ISC
*** 09/17/19

*** AERMET - VERSION 16216 *** ***
*** 11:03:39

PAGE 10

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

C0

*** 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 1638 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1039 Calm Hours Identified

A Total of 599 Missing Hours Identified (1.37 Percent)

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

***** WARNING MESSAGES *****
ME W186 158 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
 0.50
ME W187 158 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

APPENDIX 3.4:

MERV FILTER EFFICIENCY

This page intentionally left blank

TECH TIPS

Sales and Marketing Information on Airguard Air Filtration Products

ASHRAE Standard 52.2 Explained

ASHRAE Efficiency Ratings Provide New Method Of Measuring Filter Performance

The new ASHRAE Standard 52.2 provides the first industry accepted procedure for measuring filter efficiency by particle size.

The need for a more precise measurement of a filter's ability to remove specific particle sizes has become more critical as concern over indoor air quality, respirable particles, as well as protection of products and processes, has continued to grow.

Standard 52.2 Supplements Standard 52.1

Standard 52.2 is not intended to be a replacement for standard 52.1. Both will continue to be relied upon as the industry accepted measures of filter performance. The arrestance and dust holding capacity data provided by Standard 52.1 will remain as valuable performance characteristics. However, it is anticipated that as the fractional efficiency test (52.2) becomes more widely understood and accepted, the atmospheric dust spot efficiency test (52.1) will no longer be utilized.

Particle Size Ranges

The 52.2 procedure calls for efficiency measurements to be taken on twelve (12) particle size ranges. (See example to right.)

For reporting and rating purposes, these twelve (12) ranges are grouped into three (3) wider ranges:

E₁ - 0.3 - 1.0 Microns

E₂ - 1.0 - 3.0 Microns

E₃ - 3.0 - 10.0 Microns

Standard 52.2 Test Procedure

Efficiency measurements are taken on each of the twelve (12) particle size ranges at six (6) different points during the test:

Clean (after (4) increments of dust loading).

After the final resistance has been reached.

Standard synthetic ASHRAE dust, comprised of 72% SAE standard J726 test dust (fine), 23% powdered carbon, and 5% milled cotton linters is used to load the filter in five (5) equal increments.

The six (6) efficiency measurements for each of the twelve (12) particle size ranges (72 total efficiency measurements) are taken by challenging the filter with potassium chloride (KCl) particles. This test aerosol provides particles over the entire range of 0.3 to 10.0 microns required by the test procedure.

The lowest efficiency value (of the six (6) measurements taken throughout the test) for each of the twelve (12) particle size ranges is recorded. (Note: The six (6) readings for each particle size range are not averaged. The lowest efficiency value is used.)

The twelve (12) readings are grouped into the three (3) wider ranges (E₁, E₂, E₃).

These values are then averaged to provide an average Particle Size Efficiency (PSE) for each range. The PSE values are used to classify the filter into one of the sixteen (16) Minimum Efficiency Reporting Value (MERV) Ratings.

Standard Test Air Flow Rates

Standard 52.2 prescribes that the tests are to be run at one of seven (7) air flow rates:

118 FPM (.60 m/s)

246 FPM (1.25 m/s)

295 FPM (1.50 m/s)

374 FPM (1.90 m/s)

492 FPM (2.50 m/s)

630 FPM (3.20 m/s)

748 FPM (3.80 m/s)

Example: MERV-14 Rating (see back for MERV Rating Schedule.)

Particle Size Range (Microns)	Lowest Efficiency (%) (based on 6 readings over life of test)	Average Particle Size Efficiency (PSE)
.30 - .40	74%	84% (E ₁)
.40 - .55	82%	
.55 - .70	87%	
.70 - 1.0	92%	
1.0 - 1.3	96%	98% (E ₂)
1.3 - 1.6	98%	
1.6 - 2.2	99%	
2.2 - 3.0	100%	
3.0 - 4.0	100%	100% (E ₃)
4.0 - 5.5	100%	
5.5 - 7.0	100%	
7.0 - 10.0	100%	

To determine the MERV Rating, start with the PSE value for E₁, then E₂, then E₃ to arrive at the proper rating:

E₁ is 84%: Therefore the maximum rating would be MERV-14.

E₂ and E₃ both exceed 90%: therefore the filter receives an MERV-14 Rating.



Tech Tips

Sales and Marketing Information on Airguard Air Filtration Products

Minimum Efficiency Reporting Values (MERV) ASHRAE Standard 52.2

Group Number	MERV Rating	E ₁	E ₂	E ₃	Average Arrestance (ASHRAE 52.1)	Minimum Final Resistance (In. W.G.)
		Average Particle Size Efficiency (PSE) 0.3 - 1.0 Microns	Average Particle Size Efficiency (PSE) 1.0 - 3.0 Microns	Average Particle Size Efficiency (PSE) 3.0 - 10.0 Microns		
1	MERV 1	-	-	Less than 20%	Less than 65%	0.3"
	MERV 2	-	-	Less than 20%	65 - 69.9%	0.3"
	MERV 3	-	-	Less than 20%	70 - 74.9%	0.3"
	MERV 4	-	-	Less than 20%	75% or greater	0.3"
2	MERV 5	-	-	20 - 34.9%	-	0.6"
	MERV 6	-	-	35 - 49.9%	-	0.6"
	MERV 7	-	-	50 - 69.9%	-	0.6"
	MERV 8	-	-	70 - 84.9%	-	0.6"
3	MERV 9	-	Less than 50%	85% or greater	-	1.0"
	MERV 10	-	50% - 64.9%	85% or greater	-	1.0"
	MERV 11	-	65% - 79.9%	85% or greater	-	1.0"
	MERV 12	-	80% - 89.9%	90% or greater	-	1.0"
4	MERV 13	Less than 75%	90% or greater	90% or greater	-	1.4"
	MERV 14	75% - 84.9%	90% or greater	90% or greater	-	1.4"
	MERV 15	85% - 94.9%	90% or greater	90% or greater	-	1.4"
	MERV 16	95% or Greater	95% or greater	95% or greater	-	1.4"

Notes:

- ASHRAE Standard 52.2 tests are to be conducted at one of seven (7) air flow rates:

118 FPM (.60 m/s)	492 FPM (2.50 m/s)
246 FPM (1.25 m/s)	630 FPM (3.20 m/s)
295 FPM (1.50 m/s)	748 FPM (3.80 m/s)
374 FPM (1.90 m/s)	
- The air flow rate at which the filter was tested is included in the MERV rating (MERV-10 @2.5 m/s).
- Filters with an E₃ efficiency of less than 20% (MERV-1 through MERV-4) must also be tested for arrestance per ASHRAE Standard 52.1.
- Final resistance must be at least twice the initial resistance at the test air flow rate, or the values shown in the table above, whichever is greater.

A-TT52.2-308



www.airguard.com



CLARCOR Air Filtration Products

P. O. Box 32578 • Louisville, KY 40232

Customer Service Team: 1-866-247-4827 • Fax: 1-800-784-3458

Email: mailbag@airguard.com • www.airguard.com

Distributed by:

© 2008 CLARCOR Air Filtration Products.
CLARCOR Air Filtration Products has a policy of continuous product research and development and reserves the right to change design and specifications without notice. Terms and Conditions of Sale can be accessed in the "LOGIN" section at www.airguard.com