AIR QUALITY IMPACT ANALYSIS

Sage Ranch Residential Project
Tehachapi, California

Prepared For:

Crawford and Bowen Planning

Prepared By:

INSIGHT ENVIRONMENTAL / TRINITY CONSULTANTS
5500 Ming Avenue, Suite 140
Bakersfield, CA 93309
661-282-2200

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1

2. INTRODUCTION 2-1
- **2.1. Purpose** 2-1
- **2.2. General Project Description** 2-1

3. SETTING 3-1
- **3.1. Air Quality Standards** 3-1
- **3.2. Existing Air Quality** 3-4
  - *3.2.1. Ozone (O_3)* 3-5
  - *3.2.2. Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)* 3-6
  - *3.2.3. Carbon Monoxide (CO)* 3-6
  - *3.2.4. Nitrogen Dioxide (NO_2) and Hydrocarbons* 3-6
  - *3.2.5. Sulfur Dioxide (SO_2)* 3-7
  - *3.2.6. Lead (Pb) and Suspended Sulfate* 3-7
- **3.3. Climate** 3-7
- **3.4. Climate Change and Greenhouse Gases** 3-8
  - *3.4.1. Global Climate Change* 3-8
  - *3.4.2. Effects of Global Climate Change* 3-10
  - *3.4.3. Global Climate Change Regulatory Issues* 3-11

4. IMPACT ASSESSMENT 4-1
- **4.1. Significance Criteria** 4-1
  - *4.1.1. Thresholds Adopted for the Evaluation of Air Quality Impacts under CEQA* 4-1
  - *4.1.2. Threshold for Ambient Air Quality Impacts* 4-2
  - *4.1.3. Thresholds for Hazardous Air Pollutants* 4-2
  - *4.1.4. Global Climate Change Thresholds of Significance* 4-3
- **4.2. Project Related Emissions** 4-3
  - *4.2.1. Short-Term Emissions* 4-3
  - *4.2.2. Long-Term Operational Emissions* 4-5
    - 4.2.2.1. Fugitive Dust Emissions 4-5
    - 4.2.2.2. Exhaust Emissions 4-5
    - 4.2.2.3. Projected Emissions 4-5
- **4.3. Potential Impacts on Sensitive Receptors** 4-6
- **4.4. Potential Impacts to Visibility to Nearby Class 1 Areas** 4-7
- **4.5. Potential Impacts from Carbon Monoxide** 4-7
- **4.6. Predicted Health Risk Impacts** 4-8
- **4.7. Odor Impacts** 4-8
- **4.8. Impacts to Ambient Air Quality** 4-8
- **4.9. Impacts to Greenhouse Gases and Climate Change** 4-10
  - *4.9.1. Feasible and Reasonable Mitigation Relative to Global Warming* 4-11

5. CUMULATIVE IMPACTS 5-1
- **5.1. Cumulative Regional Air Quality Impacts** 5-1
- **5.2. Cumulative Local Air Quality Impacts** 5-3
- **5.3. Cumulative Hazardous Air Pollutants** 5-3
- **5.4. Cumulative Carbon Monoxide (CO) – Mobile Sources** 5-3

6. CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN 6-1
6.1. Required Evaluation Guidelines 6-1
6.2. Consistency with the Kern Council of Government's Regional Conformity Analysis 6-2

7. MITIGATION AND OTHER RECOMMENDED MEASURES 7-1
7.1. Applicable PM_{10} Reduction Measures 7-1
7.1.1. Land Preparation, Excavation and/or Demolition 7-1
7.1.2. Building (structure) Construction 7-1
7.1.3. Vehicular Activities 7-2
7.1.3.1. Dust 7-2
7.1.3.2. Tailpipe Emissions 7-2
7.2. Recommended Measures to Reduce Equipment Exhaust 7-2

8. LEVEL OF SIGNIFICANCE AFTER MITIGATION 8-1

9. REFERENCES 9-1

APPENDIX A: EXISITING AIR QUALITY MONITORING DATA A-1

APPENDIX B: PROJECT EMISSION CALCULATIONS B-1

APPENDIX C: CARB 2015 AND 2020 ESTIMATED EMISSION INVENTORIES C-1

APPENDIX D: AMBIENT AIR QUALITY ASSESSMENT (ELECTRONIC FILES) D-1

LIST OF FIGURES

Figure 2-1. Regional Location 2-1

Figure 2-2. Project Location 2-2

Figure 2-3. Preliminary Project Design 2-2

Figure 2-4. Project Site Topography 2-3

Figure 3-1. CARB Monitoring Network 3-4

Figure 6-1. Kern County Zoning 6-3

Figure 6-2. 1-Mile TAZ Map 6-3

LIST OF TABLES

Table 3-1. Federal & California Standards 3-2

Table 3-2. EKAPCD Attainment Status 3-3

Table 3-3. Existing Air Quality Monitoring Data in Project Area 3-5

Table 3-4. Tehachapi, California Weather Data 3-8

Table 4-1. EKAPCD CEQA Thresholds of Significance 4-2

Table 4-2. Measures of Significance - Toxic Air Contaminants 4-2

Table 4-3. Short-Term Project Emissions 4-4

Table 4-4. Post-Project (Operational) Emissions 4-6

Table 4-5. Post-Project (Indirect Mobile Only Operational) Emissions 4-6

Table 4-6. Non-Residential Sensitive Receptors 4-7

Table 4-7. Predicted Ambient Air Quality Impacts 4-9

Table 4-8. Comparison of Maximum Modeled Project Impact with Significance Thresholds 4-10

Table 4-9. Estimated Annual GHG Emissions (MT/Year) 4-10

Table 4-10. Select CARB GHG Emission Reduction Strategies 4-11

Table 5-1. Comparative Analysis Based on MDAB 2015 Inventory 5-2

Table 5-2. Emission Inventory MDAB 2020 Project - Tons per Year 5-2

Table 5-3. Emission Inventory MDAB - Kern County Portion 2020 Estimate Projection – Tons per Year 5-2

Table 5-4. 2020 Emission Projects - Proposed Project, Kern County, and MDAB 5-3

Table 6-1. TAZ Analysis Area Projected Growth Analysis 6-4

Table 6-2. Percent Increase/Decrease on TAZ Analysis Area 6-4

1. EXECUTIVE SUMMARY

Insight Environmental Consultants, Inc., a Trinity Consultants Company, has completed an Air Quality Impact Analysis (AQIA) for the Sage Ranch Residential Project (Project). The Project would be located in Tehachapi, California, bounded by Valley Boulevard to the north, Pinon Street to the south, and Tehachapi High School to the east.

The proposed Project's construction and operations would include the following criteria pollutant emissions: reactive organic gases (ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Project operations would generate air pollutant emissions from mobile sources (automobile activity from quarterly facility maintenance). Project construction and operational activities would also generate greenhouse gas (GHG) emissions. Criteria and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (California Air Pollution Control Officers Association (CAPCOA) 2017), which is the most current version of the model approved for use by the Eastern Kern Air Pollution Control District (EKAPCD).

Table 4-3 presents the Project's construction emissions and provides substantial evidence to support a *less than significant* air quality impact on the Mojave Desert Air Basin (MDAB). **Tables 4-4a and 4-4b** presents the Project's operations emissions and provides substantial evidence to support a *less than significant* air quality impact on the MDAB.

A records search of the Kern County GIS Geocortex IMP Map Viewer and information from Kern County identified other projects within a six-mile radius of the proposed Project. A six-mile radius is established in practice as the geographical requirement for cumulative analyses in Kern County. To date, there are no established, or even suggested, thresholds of significance for cumulative projects. Therefore, evaluation of the cumulative emissions supports a finding that the Project's contribution would not be cumulatively considerable because the proposed Project's incremental emissions would be less than significant.

2.1. PURPOSE

This AQIA was prepared pursuant to the EKAPCD's Rule 210.1 New and Modified Stationary Source Review (NSR) (EKACPD 2000), EKAPCD's Guidelines for Implementation of the California Environmental Quality Act of 1970, EKAPCD Policy, "Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving As Lead CEQA Agency" (EKAPCD 2012), the Kern County Planning Department's Air Quality Preparation Guidelines (2006), the California Environmental Quality Act (CEQA) (Public Resources Code 21000 to 21177) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 15387).

2.2. GENERAL PROJECT DESCRIPTION

The Sage Ranch Residential Project (Project) will be a residential community with a mix of single family and multi-family housing units. The Project would be located in Tehachapi, California, bounded by Valley Boulevard to the north, Pinon Street to the south, and Tehachapi High School to the east. **Figure 2-1** depicts the regional location, and **Figure 2-2** depicts a localized Project location. The preliminary Project design showing the basic layout of the facility is shown in **Figure 2-3**.

Figure 2-1. Regional Location

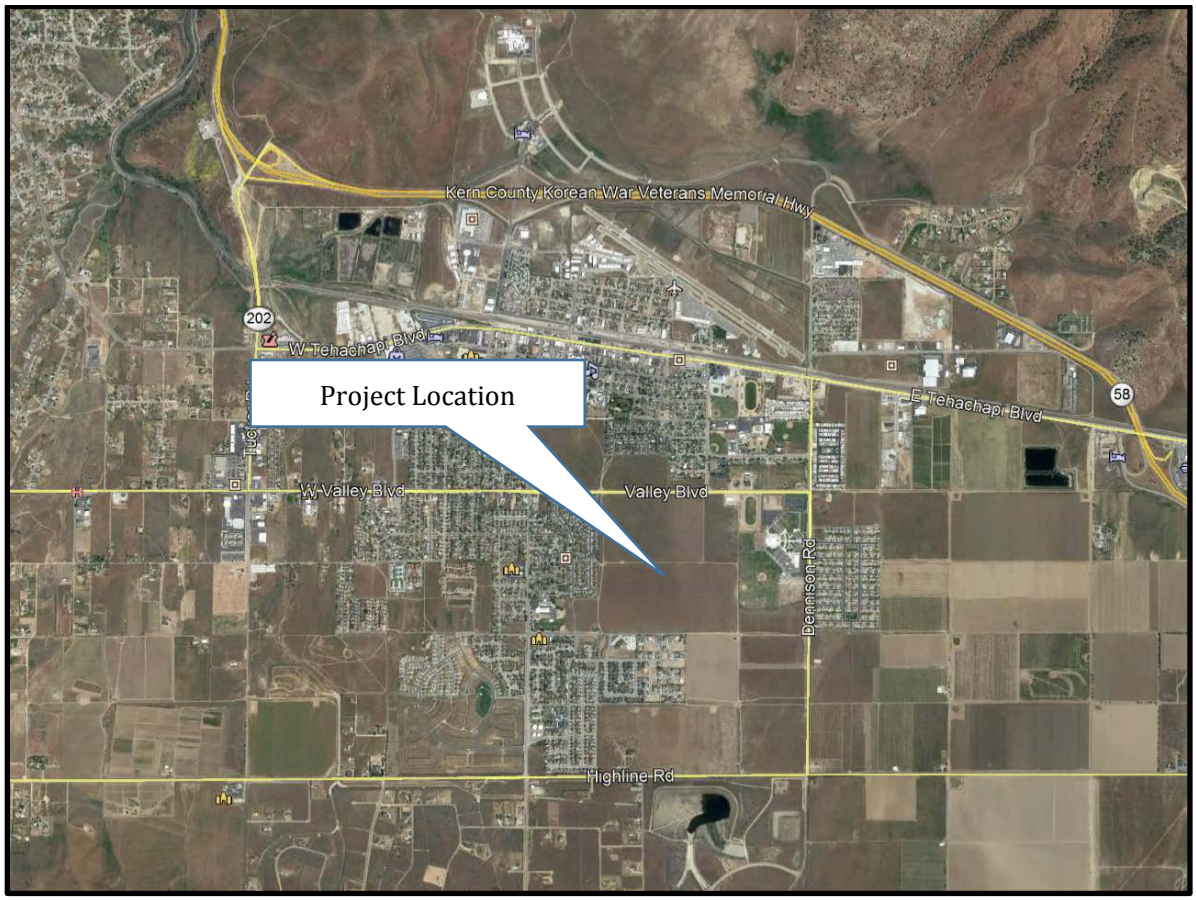


Figure 2-2. Project Location

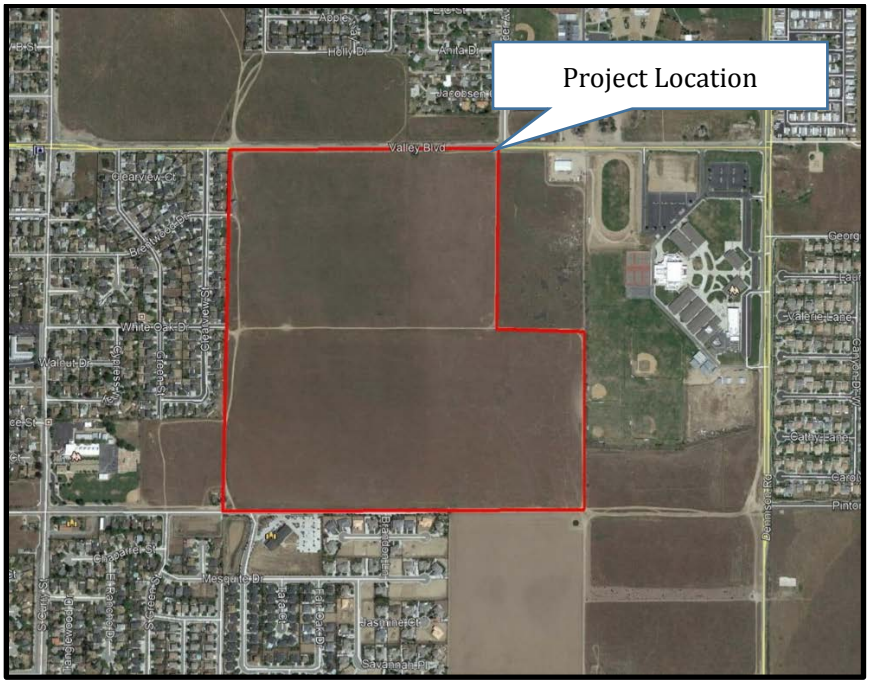


Figure 2-3. Preliminary Project Design

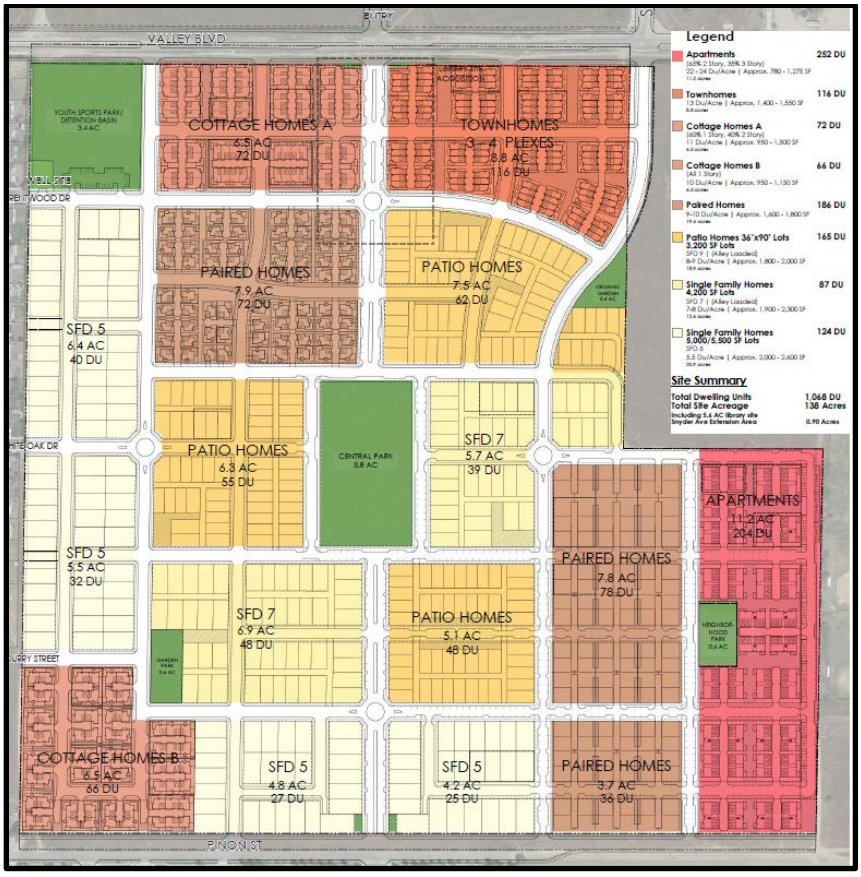
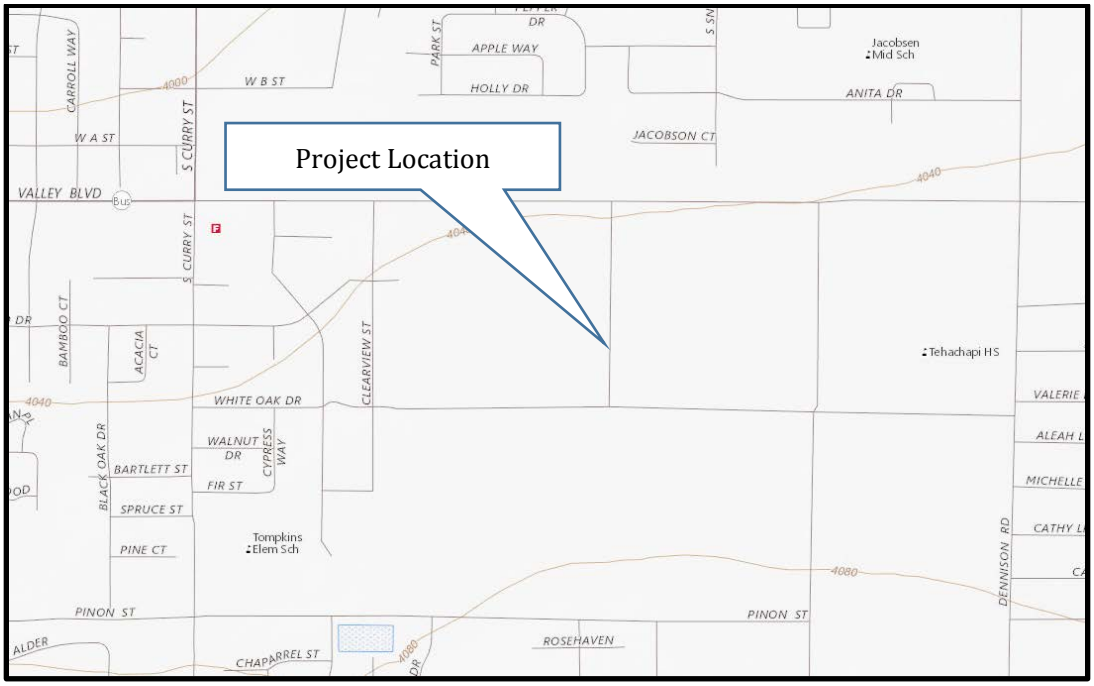


Figure 2-4 depicts the Project site's topography based on United States Geological Survey's (USGS) National Map (USGS 2015). The Project site is located at an elevation of approximately 4060 feet above mean sea level and is within the Kern County, CA boundary.

Figure 2-4. Project Site Topography



3. SETTING

Protection of the public health is maintained through the attainment and maintenance of ambient air quality standards for various atmospheric compounds and the enforcement of emissions limits for individual stationary sources. The Federal Clean Air Act requires that the U.S. Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) to protect the health, safety, and welfare of the public. NAAQS have been established for ozone (O_3), CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$, and lead (Pb). California has also adopted ambient air quality standards (CAAQS) for these "criteria" air pollutants. CAAQS are more stringent than the corresponding NAAQS and include standards for hydrogen sulfide (H_2S), vinyl chloride (chloroethene) and visibility reducing particles. The U.S. Clean Air Act Amendments of 1977 required each state to identify areas that were in non-attainment of the NAAQS and to develop State Implementation Plans (SIP's) containing strategies to bring these non-attainment areas into compliance. NAAQS and CAAQS designation/classification for Kern County are presented in **Section 3.1** below.

Responsibility for regulation of air quality in California lies with the California Air Resources Board (CARB) and the 35 local air districts with oversight responsibility held by the EPA. CARB is responsible for regulating mobile source emissions, establishing CAAQS, conducting research, managing regulation development, and providing oversight and coordination of the activities of the 35 air districts. The air districts are primarily responsible for regulating stationary source emissions and monitoring ambient pollutant concentrations. CARB also determines whether air basins, or portions thereof, are “unclassified,” in “attainment” or in “non-attainment” for the NAAQS and CAAQS relying on statewide air quality monitoring data.

3.1. AIR QUALITY STANDARDS

The Project area is located in the northwestern portion of the MDAB for which the EKAPCD has jurisdiction to regulate air pollutant emissions. **Table 3-1** provides the NAAQS and CAAQS.

Table 3-1. Federal & California Standards

		NAAQS	CAAQS
Pollutant	**Averaging Time**	**Concentration**	
O_3	8-Hour	0.070 ppm (137 μg/m³)[a]	0.070 ppm (137 μg/m³)
	1-Hour		0.09 ppm (180 μg/m³)
CO	8-Hour	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)
	1-Hour	35 ppm (40 mg/m³)	20 ppm (23 mg/m³)
NO_2	Annual Average	53 ppb (100 μg/m³)	0.030 ppm (57 μg/m³)
	1-Hour	100 ppb (188.68 μg/m³)	0.18 ppm (339 μg/m³)
SO_2	3-Hour	0.5 ppm (1,300 μg/m³)	
	24 Hour	0.14 ppm (365 μg/m³)	0.04 ppm (105 μg/m³)
	1-Hour	75 ppb (196 μg/m³)	0.25 ppm (655 μg/m³)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 μg/m³
	24-Hour	150 μg/m³	50 μg/m³
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m³	12 μg/m³
	24-Hour	35 μg/m³	
Sulfates	24-Hour		25 μg/m³
Pb [d]	Rolling Three-Month Average	0.15 μg/m³	
	30 Day Average		1.5 μg/m³
H_2S	1-Hour		0.03 ppm (42 μg/m³)
Vinyl Chloride (chloroethene)	24-Hour		0.010 ppm (26 μg/m³)
Visibility Reducing particles	8 Hour (1000 to 1800 PST)		[b]
ppm = parts per million ppb = parts per billion	mg/m³ = milligrams per cubic meter	μg/m³= micrograms per cubic meter	

Source: CARB 2016b
a On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm
b In 1989, the CARB converted both the general statewide 10-mile visibility standards 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.

Under the provisions of the U.S. Clean Air Act, the Kern County portion of the MDAB has been classified as non-attainment, attainment, unclassified/attainment or unclassified under the established NAAQS and CAAQS for various criteria pollutants. **Table 3-2** provides the EKAPCD's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

Table 3-2. EKAPCD Attainment Status

Pollutant	Designation/Classification			
	National Ambient Air Quality Standards (NAAQS)			State Ambient Air Quality Standards
	EKAPCD	Kern River / Cummings Valley[1,2]	Indian Wells Valley[3,4,5]	
Ozone – 1 Hour	Attainment[6,7]	Part of EKAPCD Area	Part of EKAPCD Area	Nonattainment
Ozone – 8 Hour[8]	Serious Nonattainment	Part of EKAPCD Area	Unclassifiable/ Attainment	Nonattainment
PM10	Unclassifiable/ Attainment	Serious Nonattainment	Attainment Maintenance	Nonattainment
PM2.5	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Carbon Monoxide	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Unclassified
Nitrogen Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Sulfur Dioxide	Unclassified	Part of EKAPCD Area	Part of EKAPCD Area	Attainment
Lead Particulates	Unclassifiable/ Attainment	Part of EKAPCD Area	Part of EKAPCD Area	Attainment

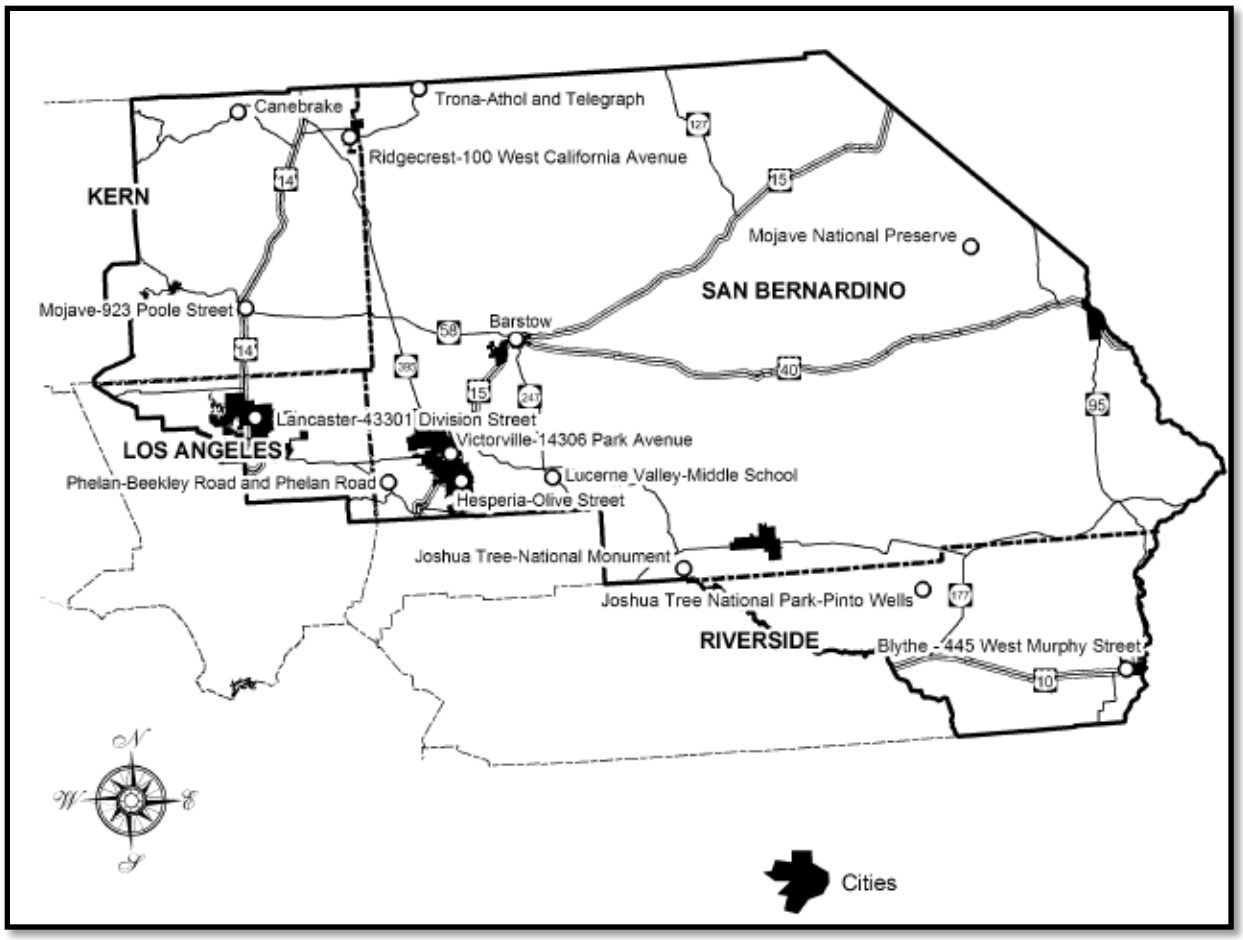
Source: EKAPCD 2018
Notes:
[1] Kern River Valley, Bear Valley, and Cummings Valley were previously included in the federally designated San Joaquin Valley PM10 Serious Nonattainment Area but were made a separate Nonattainment area in 2008.
[2] Kern River Valley, Bear Valley, and Cummings Valley are included in EKAPCD for all NAAQS other than PM10.
[3] Indian Wells Valley is a separate planning area from the rest of EKAPCD for PM10 NAAQS.
[4] Indian Wells Valley is a separate area for the 1997 and 2008 8-hour ozone NAAQS (0.08 & 0.075 ppm).
[5] Indian Wells Valley is included in EKAPCD for all NAAQS other than PM10 and 8-hour ozone.
[6] 1-hour ozone NAAQS was revoked effective June 15, 2004.
[7] EKAPCD was in attainment for 1-hour ozone NAAQS at time of revocation; the proposed Attainment Maintenance designation's effective date was June 21, 20004, therefore it did not become effective
[8] Attainment for 1997 8-hour Ozone NAAQS (0.08 ppm), Serious Nonattainment for 2008 NAAQS (0.075 ppm), and Nonattainment State 8-hour standard (0.070 ppm)

As noted above in **Table 3-2**, the EKAPCD has been designated as unclassifiable/attainment for the NAAQS for CO, PM_{10}, $PM_{2.5}$, and Lead, serious nonattainment for the O_3 eight-hour average standard, attainment for the O_3 one-hour average standard and unclassified for NO_X and SO_X. A federal designation for hydrogen sulfide (H_2S) has not been made.

The EKAPCD has been designated as nonattainment for the state one-hour and eight-hour standards for O_3, and PM_{10}, unclassified $PM_{2.5}$ and CO, and attainment for NO_X, SO_X and Lead. A state designation for hydrogen sulfide (H_2S) has not been made.

The EKACPD along with CARB operates an air quality monitoring network that provides average concentrations of those pollutants for which state or federal agencies have established ambient air quality standards. Information from the various monitoring stations is available from the corresponding agency's websites. A map of the monitoring stations in the MDAB is provided in **Figure 3-1** below.

Figure 3-1. CARB Monitoring Network



3.2. EXISTING AIR QUALITY

For the purposes of background data and this air quality assessment, this analysis relied on data collected in the last three years for the CARB monitoring stations that are located in the closest proximity to the Project site. **Table 3-3** provides the background concentrations for O_3, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), CO, NO_2, and H_2S as of 2018 and for Pb as of 2017. Information is provided for the Mojave – Poole Street, Lancaster – Division Street, Trona – Athol and Telegraph, and Victorville – Park Avenue monitoring stations for 2016 through 2018 and for the Bakersfield – California Avenue monitoring station for 2015 through 2017. No data is available for SO_2, Vinyl Chloride, or other toxic air contaminants in the MDAB.

Table 3-3. Existing Air Quality Monitoring Data in Project Area

Pollutant and CARB Monitoring Station Location	Maximum Concentration			Days Exceeding Standard		
	2016	2017	2018	2016	2017	2018
O_3 – 1-hour CAAQS (0.09 ppm)						
Mojave – 923 Poole Street	0.104	0.097	0.111	2	1	8
Lancaster – 43301 Division Street	0.108	0.109	0.125	3	10	5
O_3 – 8-hour CAAQS (0.07 ppm)						
Mojave – 923 Poole Street	0.093	0.086	0.095	60	37	56
Lancaster – 43301 Division Street	0.093	0.085	0.094	52	35	53
O_3 – 8-hour NAAQS (0.07 ppm)						
Mojave – 923 Poole Street	0.084	0.093	0.085	31	52	35
Lancaster – 43301 Division Street	0.090	0.087	0.104	60	43	48
PM_{10} – 24-hour CAAQS (50 µg/m3)						
Mojave – 923 Poole Street	130.3	85.7	86.5	18	10	19
Lancaster – 43301 Division Street	*	*	*	*	*	*
PM_{10} – 24-hour NAAQS (150 µg/m^3)						
Mojave – 923 Poole Street	139.2	93.4	93.1	0	0	0
Lancaster – 43301 Division Street	145.0	82.4	89.3	0	0	0
$PM_{2.5}$ - 24-hour NAAQS (35 µg/m3)						
Mojave – 923 Poole St.	25.7	26.9	39.0	0	0	2
Lancaster – 43301 Division Street	64.8	26.6	40.4	2	0	1
CO - 8-Hour CAAQS & NAAQS (9.0 ppm)						
No data collected	*	*	*	*	*	*
NO_2 - 1-Hour CAAQS (0.18 ppm)						
Lancaster – 43301 Division Street	0.048	0.046	0.047	0	0	0
Victorville – 14306 Park Avenue	0.097	0.057	0.051	0	0	0
NO_2 - 1-Hour NAAQS (0.10 ppm)						
Lancaster – 43301 Division Street	0.0488	0.0465	0.0476	0	0	0
Victorville – 14306 Park Avenue	0.0972	0.0573	0.0514	0	0	0
SO_2 – 24-hour Concentration - CAAQS (0.04 ppm) & NAAQS (0.14 ppm)						
No data collected	*	*	*	*	*	*
H_2S – 1-Hour CAAQS (0.03ppm)						
Trona – Athol and Telegraph	0.083	0.164	0.104	48	63	120
	2015	**2016**	**2017**	**2015**	**2016**	**2017**
Pb - Maximum 30-Day Concentration CAAQS (1500 ng/m3)						
Bakersfield – 5558 California Ave.	9.5	19.8	12.6	*	*	*

Source: CARB 2019a.
Notes: ppm= parts per million, * There was insufficient (or no) data available to determine the value.

The following is a description of criteria air pollutants, typical sources and health effects and the recently documented pollutant levels in the Project vicinity.

3.2.1. Ozone (O_3)

The MDAB has high concentrations of O_3 and these high levels are known to cause eye irritation and impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not directly emitted into the atmosphere; it is a secondary pollutant produced from a photochemical interaction between hydrocarbons and nitrogen oxides (NOx). One to three hours of strong sunlight in a stable atmosphere creates O_3. The "O_3 season" therefore typically spans from April through October. O_3 is a regional pollutant; wind transports and diffuses the precursors while activating the photochemical reaction process. The data presented in Table 3-3 shows that the Mojave and Lancaster area monitoring stations exceeded the 1-hour average ambient O_3 CAAQS and the 8-hour average ambient O_3 NAAQS and CAAQS between 2016 through 2018.

3.2.2. Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

Both NAAQS and CAAQS now apply to particulates under 10 microns (PM_{10}). Since the smaller diameter fraction of total suspended particulates are documented to represent the greatest health hazard, EPA has established NAAQS for particulates under 2.5 microns ($PM_{2.5}$). The Project area is classified as unclassifiable/attainment for PM_{10} and $PM_{2.5}$ for NAAQS.

Dust and fumes from industrial and agricultural operations generate particulate matter. Natural activities, such as wind-raised dust, fires and ocean spray, also increase the level of particulates in the atmosphere. The largest source of PM_{10} and $PM_{2.5}$ in Kern County is vehicle movement over paved and unpaved roads from demolition and construction activities and farming operations. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. Very small particulates may contain absorbed gases that produce injury to the respiratory tract. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also damage a wide range of materials. **Table 3-3** shows that PM_{10} levels exceeded the CAAQS and $PM_{2.5}$ exceeded the NAAQS in 2016 and 2018. Similar levels can be expected to occur in the vicinity of the Project site.

3.2.3. Carbon Monoxide (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the San Joaquin valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravate cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility or materials. **Table 3-3** reports insufficient data for the CO monitoring at any monitoring stations during the three-year period from 2016 through 2018.

3.2.4. Nitrogen Dioxide (NO_2) and Hydrocarbons

Eastern Kern County has been designated as an unclassified area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources account for nearly all of the county's NOx emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries and other industrial operations are the primary sources in the air basin. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NO_x is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by

inhibiting growth and by causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants. **Table 3-3** shows that the NO_2 NAAQS and CAAQS were not exceeded over the three-year period of 2016 through 2018. Hydrocarbons are not currently monitored.

3.2.5. Sulfur Dioxide (SO_2)

Eastern Kern County has been designated as an unclassified area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur, or sulfur containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

At high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when respirated in combination with particulates, SO_2 can result in greater harm by injuring lung tissues. Sulfur oxides (SOx), in combination with moisture and oxygen, results in the formation of sulfuric acid, which can yellow the leaves of plants, dissolve marble, and oxidize iron and steel. SOx can also react to produce sulfates that reduce visibility and sunlight. **Table 3-3** shows no data has been reported over the three-year period.

3.2.6. Lead (Pb) and Suspended Sulfate

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Bakersfield (the closest monitoring station to the Project) are well below the ambient standard and are expected to continue to decline; the data reported in **Table 3-3** only shows the highest concentration as the number of days exceeding standards are not reported. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year.

3.3. CLIMATE

Climate of the project area is a continentally modified Mediterranean type, characterized by cool, wet winters and hot, dry summers. Temperatures during the summer drop to the mid to lower 50s and rise to the upper 80s. In winter, the average high temperatures reach into the upper 50s, and the average low temperatures drop into the mid- 30s. The mean annual precipitation in Tehachapi, California is 12.87 inches, the bulk of which falls during the period November through March. Snowfall commonly occurs from December through March.

Meteorological data for various monitoring stations is maintained by the Western Regional Climate Center. Meteorological data for the Project site is expected to be similar to the data recorded at the Tehachapi, California monitoring station. **Table 3-4** presents average precipitation data recorded at the Tehachapi, California monitoring station from August 1997 through June 2016 (the most recent data available).

Table 3-4. Tehachapi, California Weather Data

Period of Record Monthly Climate Summary for the Period 08/01/1997 to 6/8/2016													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Maximum Temp (F)	52.5	52.1	56.1	61.2	71.5	79.2	87.6	86.5	81.7	69.9	59.1	51.3	67.4
Average Minimum Temp (F)	31.8	31.4	33.8	36.3	44.3	51.7	58.2	55.3	50.7	42.2	36.5	30.5	41.9
Average Total Precip.(in.)	2.10	2.93	1.74	0.95	0.46	0.08	0.25	0.11	0.21	0.53	1.36	2.15	12.87
Average Snowfall (in.)	4.3	6.0	4.9	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.7	20.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent of possible observations for period of record: Max. Temp.: 100% Min. Temp.: 99% Precipitation: 99.7% Snowfall: 99.9% Snow Depth: 94.6%													

Source: Western Regional Climate Center, 2019.

3.4. CLIMATE CHANGE AND GREENHOUSE GASES

3.4.1. Global Climate Change

"Global climate change" refers to change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred by some scientists and policy makers to "global warming" because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur. Climate change may result from the following influences:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation); and/or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, and desertification).

As determined from worldwide meteorological measurements between 1990 and 2005, the primary observed effect of global climate change has been a rise in the average global tropospheric temperature of 0.36 degree Fahrenheit (°F) per decade. Climate change modeling shows that further warming could occur, which could induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather (e.g., droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones). Specific effects from climate change in California may include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta.

Human activities, including fossil fuel combustion and land use changes, release carbon dioxide (CO_2) and other compounds cumulatively termed greenhouse gases. GHGs are effective at trapping radiation that would otherwise escape the atmosphere. This trapped radiation warms the atmosphere, the oceans, and the earth's surface (USGCRP, 2014). Many scientists believe that most of the warming observed over the last 50 years is attributable to human activities (IPCC, 2019). The increased amount of CO_2 and other GHGs in the atmosphere is the alleged primary cause of human-induced warming.

GHGs are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO_2, methane (CH_4), nitrous oxide (N_2O), and O_3. In the last 200 years, substantial quantities of GHGs have been released into the atmosphere, primarily from fossil fuel combustion. These human-induced emissions are increasing GHG concentrations in the atmosphere, therefore enhancing the natural greenhouse effect. The GHGs resulting from human activity are believed to be causing global climate change. While human-made GHGs include CO_2, CH_4, and N_2O, some (like chlorofluorocarbons [CFCs]) are completely new to the atmosphere. GHGs vary considerably in terms of Global Warming Potential (GWP), the comparative ability of each GHG to trap heat in the atmosphere. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

Natural sources of CO_2 include the respiration (breathing) of humans and animals and evaporation from the oceans. Together, these natural sources release approximately 150 billion metric tons of CO_2 each year, far outweighing the 7 billion metric tons of GHG emissions from fossil fuel burning, waste incineration, deforestation, cement manufacturing, and other human activity. Nevertheless, natural GHG removal processes such as photosynthesis cannot keep pace with the additional output of CO_2 from human activities. Consequently, GHGs are building up in the atmosphere (Enviropedia, 2019).

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 production include wetlands, termites, and oceans. Human activity accounts for the majority of the approximately 500 million metric tons of CH_4 emitted annually. These anthropogenic sources include the mining and burning of fossil fuels; digestive processes in ruminant livestock such as cattle; rice cultivation; and the decomposition of waste in landfills. The major removal process for atmospheric CH_4, the chemical breakdown in the atmosphere, cannot keep pace with source emissions; therefore, CH_4 concentrations in the atmosphere are rising.

Worldwide emissions of GHGs in 2008 were 30.1 billion metric tons of CO_2e and have increased considerably since that time (United Nations, 2011). It is important to note that the global emissions inventory data are not all from the same year and may vary depending on the source of the data (U.S. EPA, 2019). Emissions from China, the United States, and the European Union accounted for approximately 54% of total global GHG emissions in 2014. The United States was the number two producer of GHG emissions, behind China. The primary GHG emitted by human activities was CO_2, representing approximately 76% of total global GHG emissions (U.S. EPA, 2019).

In 2017, the United States emitted approximately 6.5 million metric tons of CO_2e. Of the six major sectors nationwide (electric power industry, transportation, industry, agriculture, commercial, and residential), the electric power industry and transportation sectors combined account for approximately 57% of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Between 1990 and 2017, total United States GHG emissions rose approximately 1.3% (U.S. EPA, 2019).

Worldwide, energy-related CO_2 emissions are expected to increase at an average rate of 0.6% annually between 2018 and 2050, compared with the average growth rate of 1.8% per year from 1990 to 2018. Much of the increase in these emissions is expected to occur in the developing world where emerging economies, such as China and India, fuel economic development with fossil fuel energy. Developing countries' emissions are expected to grow above the world average at a rate of approximately 1% annually between 2018 and 2050 and surpass emissions of industrialized countries by 2025 (U.S. EIA, 2019).

CARB is responsible for developing and maintaining the California GHG emissions inventory. This inventory estimates the amount of GHGs emitted into and removed from the atmosphere by human activities within the state of California and supports the Assembly Bill (AB) 32 Climate Change Program. CARB's current GHG emission inventory covers the years 2000 through 2017 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

IN 2017, emissions from statewide emitting activities were 424 million metric tons of CO_2 equivalent (MMT CO_2e), which is 5 MMT CO_2e lower than 2016 levels. 2017 emissions have decreased by 14% since peak levels in 2004 and are 7 MMT Co2e below the 1990 emissions level and the State's 2020 GHG Limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 tonnes per person to 10.7 tonnes per person in 2017, a 24% decrease (CARB 2019b).

CARB estimates that transportation was the source of approximately 40% of California's GHG emissions in 2017, followed by electricity generation at 15%. Other sources of GHG emissions were industrial sources at 21%, residential plus commercial activities at 10%, and agriculture at 8% (CARB 2019b).

CARB has projected the estimated statewide GHG emissions for the year 2020, which represent the emissions that would be expected to occur with reductions anticipated from Pavley I and the Renewables Electricity Standard (30 MMT CO_2e total), will be 509 MMT of CO_2e (CARB 2014). GHG emissions from the transportation and electricity sectors as a whole are expected to increase at approximately 36% and 20% of total CO_2e emissions, respectively, as compared to 2009. The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions is projected to be 18% of total CO_2e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 6%, residential and commercial activities at 10%, agriculture at 7%, and recycling and waste at 2%.

3.4.2. Effects of Global Climate Change

Changes in the global climate are assessed using historical records of temperature changes that have occurred in the past. Climate change scientists use this temperature data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from past climate changes in rate and magnitude.

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fifth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, could range from 1.1 degree Celsius (°C) to 6.4 °C (8 to 10.4 °Fahrenheit) (IPCC, 2013). Global average temperatures and sea levels are expected to rise under all scenarios (IPCC, 2014). The IPCC concluded that global climate change was largely the result of human activity, mainly the burning of fossil fuels. However, the scientific literature is not consistent regarding many of the aspects of climate change, the actual temperature changes during the 20th century, and contributions from human versus non-human activities.

Effects from global climate change may arise from temperature increases, climate sensitive diseases, extreme weather events, and degradation of air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke, drought, etc. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

According to the 2006 California Climate Action Team (CAT) Report, several climate change effects can be expected in California over the course of the next century (CalEPA, 2006). These are based on trends established by the IPCC and are summarized below.

- A diminishing Sierra snowpack declining by 70% to 90%, threatening the state's water supply.
- A rise in sea levels, resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Sea level rises of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. (Note: This condition would not affect the Proposed Project area as it is a significant distance away from coastal areas.)
- An increase in temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- Increased risk of large wildfires if rain increases as temperatures rise. Wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30% toward the end of the 21st century because more winter rain will stimulate the growth of more plant fuel available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90% more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- Increasing temperatures from 8 to 10.4 °F under the higher emission scenarios, leading to a 25% to 35% increase in the number of days that ozone pollution levels are exceeded in most urban areas (see below).
- Increased vulnerability of forests due to forest fires, pest infestation, and increased temperatures.
- Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85% more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- A decrease in the health and productivity of California's forests. Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.
- Increased electricity demand, particularly in the hot summer months.
- Increased ground-level ozone formation due to higher reaction rates of ozone precursors.

3.4.3. Global Climate Change Regulatory Issues

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete O_3 in the stratosphere (chlorofluorocarbons [CFCs], halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

On September 27, 2006, Assembly Bill 32 (AB32), the California Global Warming Solutions Act of 2006 (the Act) was enacted by the State of California. The legislature stated, "Global warming poses a serious threat to the

economic well-being, public health, natural resources, and the environment of California." The Act caps California's GHG emissions at 1990 levels by 2020. The Act defines GHG emissions as all of the following gases: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 charges CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. CARB has defined the 1990 baseline emissions for California and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand, and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, *Center for Biological v. California Department of Fish and Wildlife* (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

1. Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals,
2. Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant, and
3. Lead agencies could also demonstrate compliance with locally adopted climate plans or could apply specific numerical thresholds developed by some local agencies.

As discussed in Section 4.1, Significance Criteria, the EKAPCD, a CEQA Commenting Agency for this Project, has developed a specific numerical threshold to determine significance of a proposed project. According to the Court's ruling, this numerical threshold can be used to demonstrate compliance. This threshold is applied to the subject Project in order to determine significance.

4.1. SIGNIFICANCE CRITERIA

To determine whether a proposed Project could create a potential CEQA impact, local, state, and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA.
- Regulations established by air districts, CARB, and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate, and other permit program requirements (e.g., New Source Review).
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits.
- Regulations applied in areas where severe air quality problems exist.

Summary tables of these emission-based and concentration-based thresholds of significance for each pollutant are provided below along with a discussion of their applicability.

4.1.1. Thresholds Adopted for the Evaluation of Air Quality Impacts under CEQA

In order to maintain consistency with CEQA, the EKACPD adopted guidelines to assist applicants in complying with the various requirements. According to the EKAPCD's Guidelines (EKAPCD 1999), a proposed project does not have significant air quality impacts on the environment, if operation of the project will:

- Emit (from all projects sources subject to EKAPCD Rule 201) less than offsets trigger levels set forth in Subsection III.B.3 of EKAPCD's Rule 210.1 (New and Modified Source Review Rule);
- Emit less than 137 pounds per day (25 tons per year) of NOx or Reactive Organic Compounds from motor vehicle trips (indirect sources only);
- Not cause or contribute to exceeding any California or National Ambient Air Quality Standard;
- Not exceed the District health risk public notification thresholds adopted by the EKAPCD Board; or
- Be consistent with adopted Federal and State Air Quality Attainment Plans.

The guideline thresholds are designed to implement the general criteria for air quality emissions as required in the State CEQA Guidelines, Appendix G, Paragraph III and CEQA (State of California CEQA Guidelines, §15064.7). As such, EKAPCD thresholds provide a means by which the general standards set forth by Appendix G may be used to quantitatively measure the air quality impacts of a specific project. According to the EKAPCD Guidelines and Thresholds of Significance, which apply to a project located within the proposed project area would result in a significant impact if it exceeds any of the thresholds are presented in **Table 4-1**.

Table 4-1. EKAPCD CEQA Thresholds of Significance

Criteria Pollutant	Significance Level	
	Daily (Indirect Mobile Only)	Annual
NOx	137 lbs/day	25 tons/yr
ROG	137 lbs/day	25 tons/yr
SOx	-	27 tons/yr
PM10	-	15 tons/yr
PM2.5	-	15 tons/yr

Source: EKAPCD 1999 and EKAPCD 2000.

4.1.2. Threshold for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation*" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in Table **3-1**) when added to existing ambient concentrations.

The EPA has established the federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the Project would not include modification to the stationary source under New Source Review (NSR), it would not be subject to either PSD or NSR review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the project would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation.*" Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts on both a project and cumulative CEQA impact analysis. The MDAB is classified as non-attainment/marginal for the 8-hour O_3 NAAQS and, as such, is subject to non-attainment NSR. PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

4.1.3. Thresholds for Hazardous Air Pollutants

The EKAPCD's Guidelines state, that a project result in a significant impact if it exceeds that District's health risk notification thresholds presented in **Table 4-2**.

Table 4-2. Measures of Significance - Toxic Air Contaminants

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
EKAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 1 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 0.2 for the Maximally Exposed Individual.
		Chronic: Hazard Index **equals or exceeds** 0.2 for the Maximally Exposed Individual.
Source: EKAPCD 1996		

4.1.4. Global Climate Change Thresholds of Significance

On March 8, 2012, the EKAPCD adopted *Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving as Lead CEQA Agency*; which outlined the EKAPCD's Project-Specific CEQA significance thresholds for GHG emissions (EKAPCD 2012):

- If project is exempt from CEQA due to either a statutory or categorical exemption, no further analysis under CEQA is required.
- Project-Specific GHG Emissions must be quantified if the project is not exempt from CEQA.
- Project is considered to have a less than significant impact or not have a cumulatively considerable impact on GHG emissions if it meets one of the following conditions:
  1. Project-Specific GHG emissions are less than 25,000 tons per year (tpy);
  2. Project demonstrates to EKAPCD that it is in compliance with state GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than state plan;
  3. Project GHG emissions will be mitigated to a less than significant impact if GHGs can be reduced by at least 20% below Business-As-Usual (BAU) through implementation of one or more of the following strategies:
     a. Compliance with a Best Performance Standard (BPS) as set forth in Section VI of this Policy;
     b. Compliance with GHG Offset as detailed in Section VI of this Policy;
     c. Compliance with an Alternative GHG Reduction Strategy as discussed in Section VII of this Policy.
- If none of the above is met the project will be deemed significant and an Environmental Impact Report (EIR) will be required.

4.2. PROJECT RELATED EMISSIONS

This document was prepared pursuant to the EKAPCD's *Guidelines for Implementation of the California Environmental Quality Act, July 1, 1999 Revision.* The guidelines do not necessarily require a quantification of construction emissions for all projects. Construction emissions quantification is typically required only at the request of the lead agency. The EKAPCD generally assumes that implementation of any construction-related mitigation measures will result in construction emissions impacts that are *less than significant*.

Project emissions were estimated separately for each emission source. EMFAC model version 2014 and California Emissions Estimator Model (CalEEMod) were used to estimate emissions for both short-term, construction-related, sources as well as long-term, operations-related, sources.

Project emissions were estimated for the following development stages:

- Short-term (Construction and Demolition) – Construction emissions of the proposed Project were estimated in CalEEMod using applicant assumptions for construction schedule for the development of the Project in seven phases.
- Long-term (Operations) – Long term emissions were also estimated using CalEEMod for operations of a residential community with a mix of single family and multi-family housing units using both default and non-default input.

4.2.1. Short-Term Emissions

Short-term emissions are primarily from the construction phase of a project and would have temporary impacts on air quality.

The Project applicant did not provide a list of specific construction equipment; the construction emissions were therefore based on the default CalEEMod equipment list accordingly for the proposed Project's land use type and development intensity. Applying model defaults as well as a conservative analysis approach, construction emissions were estimated as if each phase would occur over the span of one year (e.g. Phase 1 construction will occur throughout 2020). The dates entered into the CalEEMod program may not represent the actual dates the equipment will operate; however, the total construction time is accurate, and therefore, all estimated emission totals are conservative and a reasonable and legally sufficient estimate of potential impacts. All construction equipment activity levels were the defaults CalEEMod specifies for type and number of equipment, hours per day, and horsepower.

Adjustment to the CalEEMod default values were as follows:

- Land use lot acreage was adjusted to match the Project description;
- Demolition construction phase was removed as the Project Location is open land;
- The construction schedule was adjusted to match the anticipated schedule for the Project;
- Water exposed area 2 times per day[1]; and
- Reduce vehicle speed to less than 15 miles per hour per EKAPDC Rule 402.

Table 4-3 presents the Project's short-term emissions based on the anticipated construction period.

Table 4-3. Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated						
2020	3.52	3.09	2.60	0.01	0.42	0.25
2021	3.48	2.82	2.52	0.01	0.40	0.23
2022	3.45	2.48	2.43	0.01	0.38	0.21
2023	3.20	2.23	2.39	0.01	0.36	0.19
2024	3.41	2.11	2.37	0.01	0.36	0.18
2025	3.40	1.94	2.32	0.01	0.34	0.17
2026	3.39	1.93	2.30	0.01	0.34	0.17
Maximum Annual Emission	**3.52**	**3.09**	**2.60**	**0.01**	**0.42**	**0.25**
Mitigated						
2020	3.52	3.09	2.60	0.01	0.33	0.21
2021	3.48	2.82	2.52	0.01	0.31	0.19
2022	3.45	2.48	2.43	0.01	0.29	0.16
2023	3.20	2.23	2.39	0.01	0.27	0.15
2024	3.41	2.11	2.37	0.01	0.26	0.14
2025	3.40	1.94	2.32	0.01	0.25	0.13
2026	3.39	1.93	2.30	0.01	0.25	0.13
Maximum Annual Emission	**3.52**	**3.09**	**2.60**	**0.01**	**0.33**	**0.21**
Significance Threshold	25	25	NA	27	15	15
Is Threshold Exceeded for a Single Year After Mitigation?	No	No	No	No	No	No
Source: Insight Environmental Consultants 2019						

[1] Per EKAPCD's "Suggested Air Pollutant Mitigation Measures for Construction Sites for Eastern Kern APCD".

As calculated with CalEEMod, the estimated short-term construction-related emissions would not exceed EKAPCD significance threshold levels during a given year and would therefore be less than significant.

4.2.2. Long-Term Operational Emissions

Long-term emissions are caused by operational mobile, area, and stationary sources. Long-term emissions would consist of the following components.

4.2.2.1. Fugitive Dust Emissions

Operation of the Project site at full build-out is not expected to present a substantial source of fugitive dust (PM_{10}) emissions. The main source of PM_{10} emissions would be from vehicular traffic associated with the Project site. PM_{10} generated as a part of fugitive dust emissions pose a potentially serious health hazard, alone or in combination with other pollutants. EKAPCD under Rule 402 implements required control measures to assist in further minimizing these emissions.

The Project would comply with applicable EKAPCD Rules and Regulations and the local zoning codes required in this analysis to reduce PM_{10} fugitive dust emissions even further to ensure that the project's emissions remain at a "*less than significant*" level.

4.2.2.2. Exhaust Emissions

Project-related transportation activities from residents, deliveries, and maintenance would generate mobile source ROG, NOx, SOx, CO, PM_{10}, and $PM_{2.5}$ exhaust emissions. Exhaust emissions would vary substantially from day to day but would average out over the course of an operational year. The variables factored into estimating total Project emissions include level of activity, site characteristics, and weather conditions. As the Project is not expected to generate an adverse change in current activity levels, substantial emissions are not anticipated.

4.2.2.3. Projected Emissions

The proposed project is expected to have long-term air quality impacts as shown in **Table 4-4**. Emission calculations are available in Appendix B. The following mitigation measures were selected in CalEEMod per the project details.

- Improve Walkability Design;
- Improve Destination Accessibility;
- Improve Pedestrian Network;
- 3% Electric Landscape Equipment;
- On-site Renewable Energy (installation of solar panels)

Table 4-4. Post-Project (Operational) Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated Emissions						
Phase 1 (Operational Year 2021)	1.52	1.56	5.43	0.02	1.33	0.38
Phase 2 (Operational Year 2022)	1.49	1.45	5.07	0.02	1.33	0.37
Phase 3 (Operational Year 2023)	1.46	1.22	4.75	0.01	1.32	0.37
Phase 4 (Operational Year 2024)	1.44	1.15	4.50	0.01	1.32	0.37
Phase 5 (Operational Year 2025)	1.43	1.10	4.27	0.01	1.32	0.37
Phase 6 (Operational Year 2026)	1.41	1.05	4.07	0.01	1.32	0.37
Phase 7 (Operational Year 2027)	1.40	1.01	3.90	0.01	1.32	0.37
Total	**10.16**	**8.54**	**31.98**	**0.10**	**9.26**	**2.61**
Mitigated Emissions						
Phase 1 (Operational Year 2021)	1.52	1.51	5.19	0.01	1.24	0.35
Phase 2 (Operational Year 2022)	1.49	1.40	4.85	0.01	1.24	0.35
Phase 3 (Operational Year 2023)	1.46	1.18	4.54	0.01	1.23	0.35
Phase 4 (Operational Year 2024)	1.44	1.12	4.31	0.01	1.23	0.35
Phase 5 (Operational Year 2025)	1.42	1.07	4.09	0.01	1.23	0.35
Phase 6 (Operational Year 2026)	1.40	1.02	3.90	0.01	1.23	0.35
Phase 7 (Operational Year 2027)	1.39	0.98	3.74	0.01	1.23	0.35
Total	**10.11**	**8.27**	**30.62**	**0.09**	**8.63**	**2.44**
EKAPCD Threshold	25	25	NA	27	15	15
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No

Source: Insight Environmental Consultants, 2019

Table 4-5. Post-Project (Indirect Mobile Only Operational) Emissions

Emissions Source	Pollutant (lbs/day)	
	ROG	NO_x
Mitigated Emissions		
Phase 1 (Operational Year 2021)	1.96	7.46
Phase 2 (Operational Year 2022)	1.80	6.88
Phase 3 (Operational Year 2023)	1.64	5.68
Phase 4 (Operational Year 2024)	1.53	5.33
Phase 5 (Operational Year 2025)	1.44	5.06
Phase 6 (Operational Year 2026)	1.35	4.79
Phase 7 (Operational Year 2027)	1.27	4.56
Total	**10.98**	**39.75**
EKAPCD Threshold	137	137
Is Threshold Exceeded After Mitigation?	No	No

Source: Insight Environmental Consultants, 2019

As shown in **Table 4-4** and **Table 4-5**, operations-related emissions, as calculated in Appendix B, would be less than the EKAPCD significant threshold levels. Therefore, the proposed Project would have a less than significant impact during Project operations.

4.3. POTENTIAL IMPACTS ON SENSITIVE RECEPTORS

Sensitive receptors are defined as locations where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside, such as schools, hospitals, nursing homes, and daycare centers. The Project is surrounded by a high school to the east and residential to the north, south, and west. There

are seven known non-residential sensitive receptors within 2 miles of the Project site. **Table 4-6** summarizes the location of the non-residential sensitive receptors.

Table 4-6. Non-Residential Sensitive Receptors

Sensitive Receptor Name	Address	Distance from Project
Tehachapi High School	801 South Dennison Rd, Tehachapi, CA	0.25 miles E
Tompkins Elementary School	1120 S Curry St, Tehachapi, CA	0.40 miles SW
Jacobsen Middle School	711 Anita Dr, Tehachapi, CA	0.52 miles NE
Monroe High School	126 S Synder Ave, Tehachapi, CA	0.57 miles NE
Tehachapi Senior Center	500 E F St, Tehachapi, CA	0.65 miles N
Guild of Tehachapi Hospital	101 W E St, Tehachapi, CA	0.78 miles NW
Adventist Health Tehachapi Valley	1100 Magellan Dr, Tehachapi, CA	1.98 miles NW

4.4. POTENTIAL IMPACTS TO VISIBILITY TO NEARBY CLASS 1 AREAS

Visibility impact analyses are intended for stationary sources of emissions which are subject to the PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources. Because the Project's PM10 emissions increase are predicted to be less than the PSD threshold levels, an impact at any Class 1 area or military/airspace operation within 100 kilometers of the Project (including Edwards Air Force Base, China Lake Naval Weapons Station and the entire R-2508 Airspace Complex, and Death Valley National Monument) is extremely unlikely. Therefore, based on the Project's predicted less-than significant PM_{10} emissions, the Project would be expected to have a *less than significant* impact to visibility at any Class 1 area or military/airspace operation.

4.5. POTENTIAL IMPACTS FROM CARBON MONOXIDE

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. CO concentrations are also influenced by wind speed and atmospheric mixing. CO concentrations may be more uniformly distributed when inversion conditions are prevalent in the valley. Under certain meteorological conditions, CO concentrations along a congested roadway or intersection may reach unhealthful levels for sensitive receptors, e.g. children, the elderly, hospital patients, etc. This localized impact can result in elevated levels of CO, or "hotspots" even though concentrations at the closest air quality monitoring station may be below NAAQS and CAAQS.

The localized project impacts depend on whether ambient CO levels in the Project vicinity would be above or below NAAQS. If ambient levels are below the standards, a project is considered to have significant impacts if a project's emissions would exceed of one or more of these standards. If ambient levels already exceed a state standard, a project's emissions are considered significant if they would increase one-hour CO concentrations by 10 ppm or more or eight-hour CO concentrations by 0.45 ppm or more.

A traffic generation assessment impact study has been prepared for this project and determined the Project will not reduce any streets or intersections to a LOS E or F and will not substantially worsen any existing LOS F streets or intersections. In addition, all except one intersection will operate at a LOS of C (Peters Engineering Group, 2019). Therefore, CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

4.6. PREDICTED HEALTH RISK IMPACTS

Projects are considered for potential health risks wherein a new or modified source of Hazardous Air Pollutants (HAPs) is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs.

The proposed Project will not result in emissions of HAPs; therefore, an assessment of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed Project is not required.

4.7. ODOR IMPACTS

An evaluation is typically conducted for both of the following situations: 1) a potential source of objectionable odors is proposed for a location near existing sensitive receptors, and 2) sensitive receptors are proposed to be located near an existing source of objectionable odors. The criteria for this evaluation are based on the Lead Agency's determination of the proximity to one another of the proposed project and the sensitive receptors. A sensitive receptor is a location where human populations, especially children, senior citizens and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, i.e. the 24-hour, 8-hour or 1-hour standards. Commercial and industrial sources are not considered sensitive receptors. **Table 4-6** lists seven known sensitive receptors that are in relatively close proximity (within a two-mile radius) to the project area.

The proposed Project is not considered a source of objectionable odors or odorous compounds. Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the project site when it is in operation. As such, the proposed project will not be a source of any odorous compounds nor will it likely be impacted by any odorous source.

4.8. IMPACTS TO AMBIENT AIR QUALITY

An ambient air quality analysis was performed to determine if the proposed Project has the potential to impact ambient air quality through a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. The basis for the analysis is dispersion modeling, and the Project's long-term air quality impacts shown in **Table 4-7**.

The maximum off-site ground level concentration of each pollutant for the 1-hour, 3-hour, 8-hour, 24-hour and annual periods was predicted using the most recent version of EPA's AMS/EPA Regulatory Model (AERMOD) dispersion software under the Lakes Environmental ISC-AERMOD View interface. CARB-approved, AERMET processed meteorological datasets for calendar years 2009 through 2014 was input to AERMOD (CARB 2019d). This was the most recent available dataset available at the time the modeling runs were conducted. All of the regulatory default AERMOD model keyword parameters were employed. Rural dispersion parameters were used for this project, which differs from the urban setting used in the CalEEMod model. The CalEEMod selection criteria is based on trip distances to the project site while the AERMOD selection criteria is based on the majority of the land use surrounding the facility. The majority of the land surrounding the project site is considered "rural" under the Auer land use classification method (Auer 1978).

Emissions were evaluated for each pollutant on a short-term (correlating to pollutant averaging period) and long term (annual) basis, with the exception of CO that was evaluated only for short-term exposures since there are no long-term significance thresholds for CO.

The majority of mobile emissions predicted by CalEEMod will occur beyond the project boundary because of vehicle trips. In order to determine the average on-site vehicle emissions, the following methodology was utilized. An estimated on-site trip distance was determined by calculating the diagonal distance from the center of the project to the furthest corner for each land use. The on-site estimated trip distances for the Project was determined to be 0.37 miles. The on-site estimated trip distance was then divided by the average trip length used in CalEEMod for the Project, 8.92 miles, in order to determine the on-site to off-site mobile emissions ratio for the Project, 4.15%. The total mobile emissions calculated by CalEEMod for the Project were then reduced to estimate the mobile on-site emissions used for ambient air quality modeling.

A fence-line coordinate grid of receptor points was constructed. The grid consisted of a 25-meter fence-line spacing and three receptor tiers. The first tier had 25-meter tier spacing extending a distance of 100 meters with initial receptors starting 25 meters from the facility boundary. The second tier had 50-meter tier spacing extending a distance of 200 meters and the third tier had 100-meter tier spacing extending a distance of 200 meters. Elevated terrain options were employed even though there is not complex terrain in the Project area.

For each pollutant and averaging period modeled, a "total" concentration was estimated by adding the maximum measured background air concentration to the maximum predicted Project impacts. The maximum measured background air concentrations used in this analysis were calculated from measured concentrations at the nearest monitoring stations.

The results of the air dispersion modeling, presented in **Table 4-7**, demonstrate that the maximum impacts attributable to the Project, when considered in addition to the existing background concentrations, are below the applicable ambient air quality standard for NOx, SOx and CO. The electronic AERMOD output files are provided in **Appendix D**.

Table 4-7. Predicted Ambient Air Quality Impacts

Pollutant	Averaging Period	Background (µg/m³)	Project (µg/m³)	Project + Background (µg/m³)	NAAQS (µg/m³)	CAAQS (µg/m³)
NO_2	1-hour	97.20	12.17	109.37	188.68	339
	Annual	17.50	0.50	18.00	100	57
SO_2	1-hour	27.90	0.09	27.99	196	655
	3-hour	25.110	0.07	25.18	1,300	---
	24-hour	7.620	0.03	7.65	365	105
	Annual	3.160	0.004	3.16	---	---
CO	1-hour	1,480.00	80.38	1,560.38	40,000	23,000
	8-hour	1,230.00	52.33	1,282.33	10,000	10,000
PM_{10}	24-hour	92.00	1.55	93.55	150	50
	Annual	49.91	0.18	50.09	---	20
$PM_{2.5}$	24-hour	39.00	0.70	39.70	35	---
	Annual	7.10	0.08	7.18	12	12

Pre-Project concentrations of 24-hour and annual PM_{10} and 24-hour $PM_{2.5}$ exceed their respective ambient air quality standards. EKAPCD does not have a protocol to evaluate pollutants whose background concentrations already exceed the ambient air quality standard (AAQS). Therefore, PM_{10} and $PM_{2.5}$ are evaluated in accordance with the San Joaquin Valley Air Pollution Control District's (SJVAPCD) recommended significant impact level (SIL) for fugitive PM_{10} and $PM_{2.5}$ emissions. It is the SJVAPCD's policy to use significant impact levels to determine whether a proposed new or modified source will cause or contribute significantly to an AAQS violation. If a project's maximum impacts are below the District SIL, the project is judged to not cause or contribute significantly

to an AAQS or PSD increment violation. A comparison of the proposed impact from the Project to the District SIL values is provided in **Table 4-8**.

Table 4-8. Comparison of Maximum Modeled Project Impact with Significance Thresholds

Pollutant	Averaging Period	Predicted Concentration (µg/m³)	SIL (µg/m³)
PM_{10}	24-hour	1.55	10.4
	Annual	0.18	2.08
$PM_{2.5}$	24-hour	0.70	2.5

Because the Project's modelled PM_{10} and $PM_{2.5}$ are below the SJVAPCD's significance levels for 24-hour and annual concentrations, the Project's contribution to potential violations of ambient air quality standards would be *less-than-significant*.

4.9. IMPACTS TO GREENHOUSE GASES AND CLIMATE CHANGE

The proposed Project's construction and operational GHG emissions were estimated using the CalEEMod program (version 2016.3.2), EMFAC2014, and the California Climate Action Registry General Reporting Protocol (Version 3.1). **Table 4-9** presents the Project's annual GHG emissions.

Table 4-9. Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions				
2020 Construction Emissions	470.49	0.09	0.00	472.81
2021 Construction Emissions	465.88	0.09	0.00	468.16
2022 Construction Emissions	460.81	0.09	0.00	463.07
2023 Construction Emissions	457.56	0.09	0.00	459.76
2024 Construction Emissions	456.38	0.09	0.00	458.59
2025 Construction Emissions	451.52	0.09	0.00	453.70
2026 Construction Emissions	448.54	0.09	0.00	450.73
Operational Emissions				
Phases 1-7	8,032.62	12.52	0.06	8,363.31
Annualized Construction Emissions[1]	*107.04*	*0.02*	*0.00*	*107.56*
Project Emissions	**8,139.66**	**12.54**	**0.06**	**8,471.87**
EKAPCD's Significance Threshold	**-**	**-**	**-**	**25,000**
Significance Threshold Exceeded?	**-**	**-**	**-**	**No**
*Note: 0.00 could represent <0.00 1 Per South Coast AQMD's Methodology				

The Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6), the other gases identified as GHG in AB32. The proposed Project will be subject to any regulations developed under AB32 as determined by CARB. As demonstrated in **Table 4-8,** the Project will be significantly less than the EKAPCD's GHG Policy threshold of 25,000 MT of CO_2e per year (EKAPCD 2012). The proposed Project would therefore have a *less than significant* GHG impact.

4.9.1. Feasible and Reasonable Mitigation Relative to Global Warming

CEQA requires that all feasible and reasonable mitigation be applied to the project to reduce the impacts from construction and operations on air quality. The SJVAPCD's "Non-Residential On-Site Mitigation Checklist" was applied in preparing the mitigation measures and evaluating the Project's features as a proxy for EKAPCD. These measures include using controls that limit the exhaust from construction equipment and using alternatives to diesel when possible. Additional reductions would be achieved through the air districts and CARB implementing regulations to reduce diesel engine emissions.

While it is not possible to determine whether the Project individually would have a significant impact on global warming or climate change, the Project would potentially contribute to cumulative GHG emissions reductions in California as well as related health effects. The Project operational emissions would only be a very small fraction of the statewide GHG emissions, and these small increases would be offset by reductions in GHGs that would result in reduced need for fossil-fuel generated power sources. However, without the necessary science and analytical tools, it is not possible to assess, with certainty, whether the Project's contribution would be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. CEQA, however, does note that the more severe environmental problems the lower the thresholds for treating a project's contribution to cumulative impacts as significant. Given the position of the legislature in AB32 which states that global warming poses serious detrimental effects, and the requirements of CEQA for the lead agency to determine that a project not have a cumulatively considerable contribution, the effect of the Project's CO_2 contribution/reduction may would not be considered cumulatively considerable and would be considered *less than significant*. This determination is based on the lack of clear scientific evidence or other criteria for determining the significance of the Project's contribution or reduction of GHG to the air quality in the MDAB. The strategies currently being implemented by CARB may help in further reducing the Project's GHG emissions and are summarized in the table below.

Table 4-10. Select CARB GHG Emission Reduction Strategies

Strategy	Description of Strategy
Vehicle Climate Change Standards	AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in Sept. 2004.
Diesel Anti-Idling	In July 2004, CARB adopted a measure to limit diesel-fueled retail motor vehicle idling.
Other Light-Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1% to 4% Biodiesel displacement of California diesel fuel.
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy-duty vehicles and an educational program for the heavy-duty vehicle sector.

Not all of these measures are currently appropriate or applicable to the proposed Project. While future legislation could further reduce the Project's GHG footprint, the analysis of this is speculative and in accordance with CEQA Guidelines Section 15145, will not be further evaluated in this AQIA.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single

project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the Project through design, in accordance with CEQA Section 15130, any further feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB32. The cumulative impacts of the Project to global climate change as demonstrated in **Table 4-9** would be below the GHG thresholds of significance established by the EKAPCD. Therefore, the cumulative impacts to global climate change would be *less than significant.*

5. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The EKAPCD Guidelines for Implementation of CEQA also states that "*Unless otherwise specified in published/adopted thresholds of significance and guidelines, a project's potential contribution to cumulative impacts shall be assessed utilizing the same significance criteria as those for project specific impacts*"[2]. Based on the analysis conducted for this project, it is individually *less than significant*. This AQIA, however, also considered impacts of the proposed project in conjunction with the impacts of other projects previously proposed in the area. The following cumulative impacts were considered:

- Cumulative O_3 Impacts (ROG and NOx) from numerous sources within the region including transport from outside the region. O_3 is formed through chemical reactions of ROG and NOx in the presence of sunlight.
- Cumulative CO Impacts produced primarily by vehicular emissions.
- Cumulative PM_{10} Impacts from within the region and locally from the various projects. Such projects may cumulatively produce a significant amount of PM_{10} if several projects conduct grading or earthmoving activities at the same time; and
- Hazardous Air Pollutant (HAP) Impacts on sensitive receptors from within the recommended screening radius of one mile.

The cumulative analysis is based on a quantitative cumulative analysis of projects located within a one-mile radius of the proposed Project. A one-mile radius is for cumulative project analysis is required within the City of Tehachapi.

The cumulative analysis quantifies operational and area impacts proposed by the project as well as all identified projects within close proximity (one-mile) of the project site. The analysis quantifies operational emissions from these other projects to determine the impacts to the air basin posed by these sources with the increases proposed by the subject project. These emissions are then compared to the proposed growth and anticipated emissions increases included in the various regional growth forecasts to determine 1) if they were included in the forecast; 2) if their inclusion can be considered consistent with the attainment plan for air emissions within the air basin; and 3) if these emissions are in conformance with the State Implementation Plan emission budget or baseline emissions for ROG, NOx, CO and PM_{10}.

5.1. CUMULATIVE REGIONAL AIR QUALITY IMPACTS

The most recent, certified MDAB Emission Inventory data available from the EKAPCD is based on data gathered for the 2015 annual inventory. This data will be used to assist the EKAPCD in demonstrating attainment of Federal 1-hour O_3 Standards. **Table 5-1** provides a comparative look at the impacts proposed by the proposed Project to the MDAB Emissions Inventory.

[2] EKAPCD Guidelines for Implementation of CEQA, Page 22

Table 5-1. Comparative Analysis Based on MDAB 2015 Inventory

Emissions Inventory Source	Pollutant (tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Kern County – 2015[2]	3,796	11,790	20,805	2920	5,767	1,132
MDAB – 2015[2]	22,046	56,356	85,739	4,271	49,531	13,578
Proposed Project	10.11	8.27	30.62	0.09	8.63	2.44
Proposed Project's % of Kern[1]	0.27%	0.07%	0.15%	0.00%	0.15%	0.09%
Proposed Project's % of MDAB[1]	0.05%	0.01%	0.04%	0.00%	0.02%	0.02%

Source: CARB 2019c
Notes: 1) Percentages equaling 0.0000 could represent a percent <0.00005.
2) This is the latest inventory available as of June 2019, excluding Natural Sources.

As shown in **Table 5-1** the proposed Project does not pose a substantial increase to basin emissions, as such basin emissions would be essentially the same if the Project is approved.

Tables 5-2 through **5-4** provide CARB Emissions Inventory projections for the year 2020 for both the MDAB and the Kern County portion of the air basin. Looking at the MDAB Emissions predicted by the CARB year 2020 emissions inventory, the Kern County portion of the air basin is a moderate source of the emissions. The proposed Project produces a small portion of the total emissions in both Kern County and the entire MDAB.

Table 5-2. Emission Inventory MDAB 2020 Project - Tons per Year

	ROG	NO_X	PM_{10}
Total Emissions	20,842	51,246	52,378
Percent Stationary Sources	34.85%	53.85%	42.02%
Percent Area-Wide Sources	26.97%	1.42%	53.17%
Percent Mobile Sources	38.18%	44.73%	4.81%
Total Stationary Source Emissions	7,264	27,594	22,010
Total Area-Wide Source Emissions	5,621	730	27,850
Total Mobile Source Emissions	7,957	22,922	2,519

Source: CARB 2019c
Note: Total may not add due to rounding.

Table 5-3. Emission Inventory MDAB - Kern County Portion 2020 Estimate Projection – Tons per Year

	ROG	NO_X	PM_{10}
Total Emissions	3,577	11,315	5,913
Percent Stationary Sources	13.27%	67.10%	20.37%
Percent Area-Wide Sources	26.53%	1.94%	59.88%
Percent Mobile Sources	60.20%	30.97%	19.75%
Total Stationary Source Emissions	475	7,592	1,205
Total Area-Wide Source Emissions	949	219	3,541
Total Mobile Source Emissions	2,154	3,504	1,168

Source: CARB 2019c
Note: Total may not add due to rounding.

Table 5-4. 2020 Emission Projects - Proposed Project, Kern County, and MDAB

	ROG	NO_X	PM_{10}
Proposed Project	10.11	8.27	8.63
Kern County	3,577	11,315	5,913
MDAB	20,842	51,246	52,378
Proposed Project Percent of Kern County	0.28%	0.07%	0.15%
Proposed Project Percent of MDAB	0.05%	0.02%	0.02%
Kern County Percent of MDAB	17.16%	22.08%	11.29%

As shown above, the proposed Project would pose no impact on regional O_3 and PM_{10} formation. Because the regional contribution to these cumulative impacts would be negligible, the Project would not be considered cumulatively considerable in its contribution to regional O_3 and PM_{10} impacts.

5.2. CUMULATIVE LOCAL AIR QUALITY IMPACTS

A cumulative projects list was not provided for the Sage Ranch Residential Project. There are other planned developments found within a six-mile radius of the Project based on a review of the Kern County GIS database, however, the Kern County GIS database lacks the necessary details to accurately predict the type of developments for these projects. The cumulative projects are typically listed only as geographical reference to demonstrate the construction activity in a six-mile radius from the proposed Project. The number or size of these projects is of no particular significance since no "cumulative" emissions thresholds have been established by the EKAPCD.

As details regarding the various cumulative projects were not readily available, emissions estimates were not calculated. As these projects are either currently under construction or, at a minimum, approved by the planning department for consistency with applicable regulation, for the purposes of this analysis, it is assumed that they are in conformance with the regional AQAP.

There are no cumulative significance thresholds established by the EKAPCD, CARB or other regulatory authority. Because: 1) the cumulative projects are already approved; 2) it is assumed that these projects are in conformance with the regional AQAP and/or the Kern County General Plan; and 3) the Project's incremental contribution is *less-than significant*; therefore, the Project's incremental contribution to a cumulative effect is considered less than significant. (CEQA Guidelines Section 15064(h)(3) (EKAPCD 2015).

5.3. CUMULATIVE HAZARDOUS AIR POLLUTANTS

Combined HAPs emission impacts from the project and other existing and planned projects are considered cumulatively significant when air quality standards are exceeded. Because the Project would not be a significant source of HAPs, the proposed Project would *also not be expected to pose a significant cumulative HAPs impact.*

5.4. CUMULATIVE CARBON MONOXIDE (CO) - MOBILE SOURCES

Traffic increases and added congestion caused by a project can combine to cause a CO "Hotspot". A traffic generation assessment impact study has been prepared for this project and determined the Project will not reduce any streets or intersections to a LOS F. In addition, all except one intersection will operate at a LOS of C (Peters Engineering Group). Therefore, CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

6. CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN

Air quality impacts from proposed projects within the eastern Kern County are controlled through policies and provisions of the EKAPCD and the Kern County General Plan (Kern County 2004). In order to demonstrate that a proposed project would not cause further air quality degradation in either of the EKAPCD's plan to improve air quality within the air basin or federal requirements to meet certain air quality compliance goals, each project should also demonstrate consistency with the EKAPCD's adopted AQAP. The EKAPCD is required to submit a "Rate of Progress" document to the CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. The California Clean Air Act (CCAA) requires the local air districts with severe or extreme air quality problems to provide for a 5 percent reduction in non-attainment emissions per year. The Attainment Plans prepared for the Eastern Kern County by the EKAPCD complies with this requirement. CARB reviews, approves or amends the document and forwards the plan to the U.S. Environmental Protection Agency (U.S. EPA) for final review and approval within the State Implementation Plan (SIP).

Air pollution sources associated with stationary sources are regulated through the EKAPCD permitting authority under the New and Modified Stationary Source Review Rule (EKAPCD Rule 210.1). Owners of any new or modified equipment that emits, reduces or controls air contaminants, except those specifically exempted by the EKAPCD, are required to apply for an Authority to Construct and Permit to Operate (EKAPCD Rule 201). Additionally, best available control technology (BACT) is required on specific types of stationary equipment and are required to offset both stationary source emission increases along with increases in cargo carrier emissions if the specified threshold levels are exceeded (EKAPCD Rule 210.1, III.B.). Through this mechanism, the EKAPCD would ensure that all stationary sources within a project area would be subject to the standards of the EKAPCD to ensure that new developments do not result in net increases in stationary sources of criteria air pollutants.

6.1. REQUIRED EVALUATION GUIDELINES

CEQA Guidelines and the Federal Clean Air Act (Sections 176 and 316) contain specific references on the need to evaluate consistency between a proposed project and the applicable AQAP for the Project site. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQAP:

1. *Determination that an AQAP is being implemented in the area where the Project is being proposed*. The EKAPCD has implemented the current, modified, AQAP as approved by the CARB. The current AQAP is under review by the U.S. EPA.
2. *The proposed Project must be consistent with the growth assumptions of the applicable AQAP*. The proposed Project is included within the population and employment increases projected in the Kern County General Plan (**Tables 6-1 and 6-2**).
3. *The Project must contain in its design all reasonably available and feasible air quality control measures*. The proposed Project incorporates various policy and rule-required implementation measures that will reduce related emissions.

The CCAA and AQAP identify transportation control measures as methods to further reduce emissions from mobile sources. Strategies identified to reduce vehicular emissions such as reductions in vehicle trips, vehicle use, vehicle miles traveled, vehicle idling and traffic congestion, in order to reduce vehicular emissions, can be implemented as control measures under the CCAA as well. Additional measures may also be implemented through the building process such as providing electrical outlets on exterior walls of structures to encourage use of electrical landscape maintenance equipment.

As the growth represented by the proposed Project was anticipated by the Kern County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

1. The findings of the analysis conducted using review of TAZ data show that sufficient population and household increases are planned for the project area (**Table 6-1** below);
2. That, by definition, the proposed emissions from the Project are below the EKAPCD's established emissions impact thresholds; and
3. That the primary source of emissions from the Project would be motor vehicles which would be licensed through the State of California and whose emissions are already incorporated into the CARB's Eastern Kern County's Emissions Inventory.

Based on these factors, the Project *appears to be consistent with the AQAP*.

6.2. CONSISTENCY WITH THE KERN COUNCIL OF GOVERNMENT'S REGIONAL CONFORMITY ANALYSIS

The Kern Council of Governments (Kern COG) Regional Conformity Analysis Determination demonstrates that the regional transportation expenditure plans (Destination 2030 Regional Transportation Plan and Federal Transportation Improvement Program) in the Kern County portion of the Mojave Desert air quality attainment areas would not hinder the efforts set out in the CARB's SIP for each area's non-attainment pollutants (CO, O_3 and PM_{10}). The analysis uses an adopted regional growth forecast, governed by both the adopted Kern COG Policy and Procedure Manual and a Memorandum of Understanding between the County of Kern and Kern COG (representing itself and outlying municipal member agencies).

The Kern COG Regional Conformity Analysis considers General Plan Amendments (GPA) and zone changes that were enacted at the time of the analysis as projected growth within the area based on land use designations incorporated within the Kern County General Plan. Land use designations that are altered based on subsequent GPAs that were not included in the Regional Conformity Analysis were not incorporated into the Kern COG analysis. Consequently, if a proposed project is not included in the regional growth forecast using the latest planning assumptions, it may not be said to conform to the regional growth forecast.

Item 2 under Section 3 – Model Maintenance Procedure, of the Kern COG Regional Transportation Modeling Policy and Procedure Manual states "*Land Use Data – General Plan land capacity data or "Build -out capacity" is used to distribute the forecasted County totals, and may be updated as new information becomes available, and is revised in regular consultation with local planning departments*."

Under the current Kern County Zoning, the Project site is designated as "T-4" for Neighborhood General and would be included in the regional growth forecast (see **Figure 6-1 and Table 6-1**).

In addition, a review of Kern COG regional forecast was prepared to evaluate if the Project area growth forecast would be sufficient to account for the Project's projected employment increase. The adopted growth forecasts are assigned to Traffic Analysis Zones (TAZ) (see **Figure 6-2**); a review of the growth forecast one mile from a project presents a conservative assessment of the Project area. The TAZ's included in the one-mile radius from the proposed Project site are: 520, 529, 531, 532, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 797, 798, 1637, 1638, 1639, 1640, 1641, and 1644.

Figure 6-1. Kern County Zoning

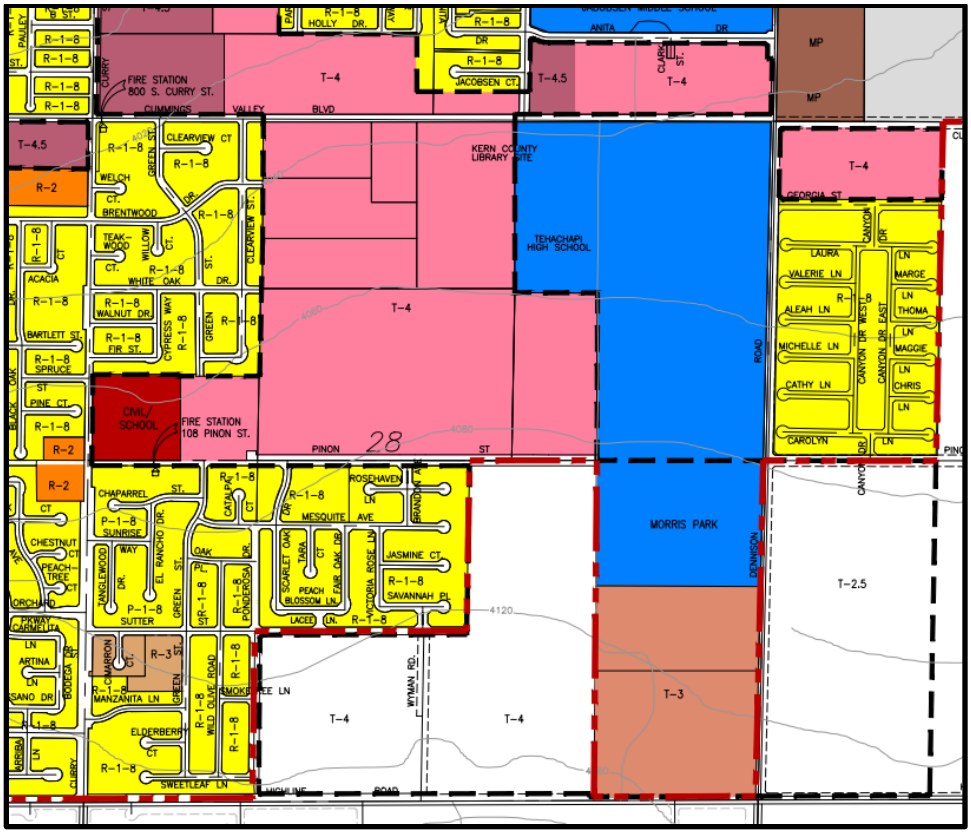


Figure 6-2. 1-Mile TAZ Map

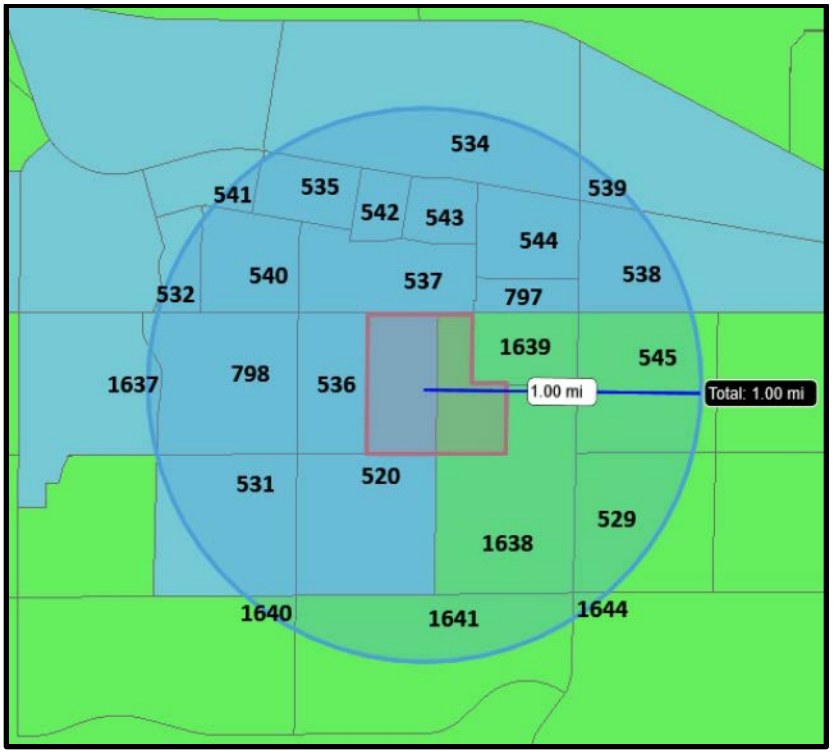


Table 6-1. TAZ Analysis Area Projected Growth Analysis

	2017	2020	2030
Population	7,247	7,649	10,441
Households	2,807	2,960	3,995
Employment	3,058	3,269	5,002

Table 6-2 provides the percent increase/decrease for the analysis area population, households and employment. This comparison contrasts both 2020 and 2030 to baseline year 2017.

Table 6-2. Percent Increase/Decrease on TAZ Analysis Area

Years	Percent Increase / Decrease		
	Population	Households	Employment
2017*	0	0	0
2020	6	5	7
2030	44	40	64
*Baseline year of 2017 was valued at "0" to measure net percent increase/decrease.			

Given there is already enough population and households to account for the proposed residential community, the Project is consistent with the regional growth forecast (see **Figure 6-1 and Tables 6-1 and 6-2**).

7. MITIGATION AND OTHER RECOMMENDED MEASURES

As the estimated construction and operational emissions from the proposed Project would be *less than significant*, no specific mitigation measures would be required. However, to ensure that Project is in compliance with all applicable EKAPCD rules and regulations and emissions are further reduced, the applicant would be required to implement and comply with a number of measures by regulation and would result in further emission reductions through their inclusion in Project construction and long-term design. The following measures have been applied to the Project as EKAPCD rules and regulations and conditions of approval and through the CalEEMod model analysis:

7.1. APPLICABLE PM_{10} REDUCTION MEASURES

As the Project would be completed in compliance with EKAPCD Rules and Regulation, dust control measures would be taken to ensure compliance specifically during grading and the construction phase.

7.1.1. Land Preparation, Excavation and/or Demolition

The following dust control measures should be implemented:

- All soil excavated or graded should be sufficiently watered to prevent excessive dust. Watering should occur as needed with complete coverage of disturbed soil areas. Watering should be a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.[3]
- All clearing, grading, earth moving, and excavation activities should cease
  - during periods of winds greater than 20 mph (averaged over one hour), if disturbed material is easily windblown, or
  - when dust plumes of 20% or greater opacity impact public roads, occupied structures or neighboring property.
- All fine material transported offsite should be either sufficiently watered or securely covered to prevent excessive dust.
- If more than 5,000 cubic yards of fill material will be imported or exported from the site, then all haul trucks should be required to exit the site via an access point where a gravel pad or grizzly has been installed.
- Areas disturbed by clearing, earth moving, or excavation activities should be minimized at all times.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
- Where acceptable to the fire department, weed control should be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering.

7.1.2. Building (structure) Construction

After clearing, grading, earth moving and/or excavating, the following dust control practices should be implemented:

[3] This mitigation measure has been implemented in the CalEEMod model as mentioned in Section 4.2.1, and the mitigated emissions in Table 4-3 reflect this mitigation.

- Once initial leveling has ceased all inactive soil areas within the construction site should either be seeded and watered until plant growth is evident, treated with a dust palliative, or watered twice daily until soil has sufficiently crusted to prevent fugitive dust emission.
- All active disturbed soil areas should be sufficiently watered to prevent excessive dust, but no less than twice per day.

7.1.3. Vehicular Activities

During all phases of construction, the following vehicular control measures should be implemented:

7.1.3.1. Dust

- Onsite vehicle speed should be limited to 15 mph.[3]
- All areas with vehicle traffic should be paved, treated with dust palliatives, or watered a minimum of twice daily.
- Streets adjacent to the project site should be kept clean and accumulated silt removed.
- Access to the site should be by means of an apron into the project from adjoining surfaced roadways. The apron should be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of the vehicles, a grizzly or other such device should be used on the road exiting the project, immediately prior to the pavement, in order to remove most of the soil material from the vehicle's tires.

7.1.3.2. Tailpipe Emissions

- Properly maintain and tune all internal combustion engine powered equipment.
- Require employees and subcontractors to comply with California's idling restrictions for compression ignition engines.
- Use low sulfur (CARB) diesel fuel.

7.2. RECOMMENDED MEASURES TO REDUCE EQUIPMENT EXHAUST

These measures are recommended to reduce exhaust emissions:

- Maintain all construction equipment as recommended by manufacturer manuals.
- Shut down equipment when not in use for extended periods.
- Construction equipment shall operate no longer than eight (8) cumulative hours per day.
- Use electric equipment for construction whenever possible in lieu of diesel or gasoline powered equipment.
- Curtail use of high-emitting construction equipment during periods of high or excessive ambient pollutant concentrations.
- All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO_x emissions.
- On-Road and Off-Road diesel equipment shall use diesel particulate filters if permitted under manufacturer's guidelines.
- On-Road and Off-Road diesel equipment shall use cooled exhaust gas recirculation (EGR) if permitted under manufacturer's guidelines.
- All construction workers shall be encouraged to shuttle (car-pool) to retail establishments or to remain on-site during lunch breaks.
- All construction activities within the Project area shall be discontinued during the first stage smog alerts.
- Construction and grading activities shall not be allowed during first stage O_3 alerts. First stage O_3 alerts are declared when the O_3 level exceeds 0.20 ppm (1-hour average).

8. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project would have short-term air quality impacts due to facility construction activities as well as vehicular emissions. Construction-related short-term emissions would be reduced by implementation of measures required of all projects by EKACPD and *were found to be less than significant* with no mitigation beyond what is required by the EKAPCD.

The proposed Project would result in long-term air quality impacts due to operational-related mobile source emissions. These operational-related long-term emissions would be reduced by implementation of measures required of all projects by EKACPD and *were found to be less than significant* with no mitigation beyond what is required by the EKAPCD.

The proposed Project's incremental contribution to cumulative impacts would be reduced by implementation of measures required of all projects by EKACPD and be below thresholds of significance. Therefore, the Project would not be considered cumulatively considerable because of presumed conformance with the AQAP and/or the Kern County's General Plan. Therefore, the Project's contribution to cumulative impacts *were found to be less than significant*.

The proposed Project in conjunction with other past, present and foreseeable future projects would result in cumulative long-term impacts to global climate change. The proposed Project's incremental contribution to these impacts will be mitigated to the extent feasible and are considered *less than significant.*

9. REFERENCES

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APPENDIX A: EXISITING AIR QUALITY MONITORING DATA

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
	National:					
First High:	Aug 29	48.8	Dec 1	46.5	Sep 20	47.6
Second High:	Sep 16	47.4	Dec 15	44.3	Apr 24	44.3
Third High:	Nov 14	45.8	Nov 12	43.8	Apr 26	42.8
Fourth High:	Oct 6	45.6	Oct 27	43.5	Mar 8	42.4
	California:					
First High:	Aug 29	48	Dec 1	46	Sep 20	47
Second High:	Sep 16	47	Dec 15	44	Apr 24	44
Third High:	Oct 6	45	Oct 25	43	Mar 8	42
Fourth High:	Nov 14	45	Oct 27	43	Apr 26	42
	National:					
1-Hour Standard Design Value:		*		*		42
1-Hour Standard 98th Percentile:		42.3		42.9		39.7
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		8		8		9
	California:					
1-Hour Std Designation Value:		50		50		50
Expected Peak Day Concentration:		48		48		48
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		8		8		8
Annual Average:		8		*		8
Year Coverage:		95		87		97

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

iADAM

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jun 3	0.108	Jul 15	0.109	Aug 7	*0.125*
Second High:	Jun 4	0.095	Jun 20	0.104	Aug 9	0.111
Third High:	Jun 26	0.095	Jun 14	0.103	Aug 4	0.101
Fourth High:	Jun 25	0.093	Jun 16	0.101	Jul 27	0.100
California:						
# Days Above the Standard:		3		10		5
California Designation Value:		0.11		0.11		0.10
Expected Peak Day Concentration:		0.112		0.114		0.102
National:						
# Days Above the Standard:		*0*		*0*		*1*
3-Year Estimated Expected Number of Exceedance Days:		*0.3*		*0.3*		*0.3*
1-Year Estimated Expected Number of Exceedance Days:		*0.0*		*0.0*		*1.0*
Nat'l Standard Design Value:		*0.120*		*0.120*		*0.108*
Year Coverage:		97		96		93

Notes:

Hourly ozone measurements and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

iADAM

at Lancaster-43301 Division Street

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 3	0.090	Jul 15	0.087	Aug 7	0.104
Second High:	Jun 26	0.090	Jul 21	0.087	Aug 9	0.094
Third High:	Jun 25	0.084	Jun 16	0.086	Jul 27	0.089
Fourth High:	Aug 4	0.084	Jun 20	0.084	Aug 4	0.087
California Std (0.070 ppm):						
First High:	Jun 3	0.091	Jul 15	0.087	Aug 7	0.105
Second High:	Jun 26	0.091	Jul 21	0.087	Aug 9	0.095
Third High:	Jun 25	0.085	Jun 16	0.086	Jul 27	0.090
Fourth High:	Jul 28	0.084	Jun 20	0.085	Aug 4	0.088
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		60		43		48
Nat'l Standard Design Value:		0.088		0.089		0.085
National Year Coverage:		98		96		94
California Std (0.070 ppm):						
# Days Above the Standard:		65		43		49
California Designation Value:		0.101		0.101		0.091
Expected Peak Day Concentration:		0.101		0.101		0.092
California Year Coverage:		95		96		93

Notes:

Eight-hour ozone averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Lancaster-43301 Division Street

iADAM

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 24	64.8	Oct 12	26.6	Aug 9	40.4
Second High:	Jul 25	49.1	Dec 16	23.9	Aug 4	30.8
Third High:	Jun 28	33.3	Jul 15	19.5	Aug 7	25.5
Fourth High:	Jul 30	30.1	Sep 2	19.3	Jul 27	20.2
California:						
First High:	Jul 24	64.8	Oct 12	26.6	Aug 9	40.4
Second High:	Jun 28	33.3	Dec 16	23.9	Aug 4	30.8
Third High:	Jul 30	30.1	Jul 15	19.5	Aug 7	25.5
Fourth High:	May 14	23.9	Sep 2	19.3	Jul 27	20.2
National:						
Estimated # Days > 24-Hour Std:		2.0		0.0		1.0
Measured # Days > 24-Hour Std:		2		0		1
24-Hour Standard Design Value:		*		*		18
24-Hour Standard 98th Percentile:		20.5		15.7		16.4
2006 Annual Std Design Value:		*		*		7.4
2013 Annual Std Design Value:		*		*		7.4
Annual Average:		7.6		7.2		7.2
California:						
Annual Std Designation Value:		*		7		7
Annual Average:		*		7.3		7.2
Year Coverage:		98		97		99

Notes:

Daily PM2.5 averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Lancaster-43301 Division Street

iADAM

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 30	145.0	Dec 16	82.4	Sep 20	89.3
Second High:	Jul 24	128.3	Oct 12	74.8	Sep 21	85.2
Third High:	Sep 22	109.0	Oct 19	63.7	Feb 11	81.5
Fourth High:	Jul 25	84.1	Oct 2	62.8	Jun 4	76.2
California:						
First High:		*		*		*
Second High:		*		*		*
Third High:		*		*		*
Fourth High:		*		*		*
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
Annual Average:		*25.7*		*26.3*		*25.2*
3-Year Average:		*23*		*24*		*26*
California:						
Estimated # Days > 24-Hour Std:		*		*		*
Measured # Days > 24-Hour Std:		*		*		*
Annual Average:		*		*		*
3-Year Maximum Annual Average:		*		*		*
Year Coverage:		0		0		0

Notes:

Daily PM10 averages and related statistics are available at Lancaster-43301 Division Street between 2001 and 2018. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 28	0.104	Jul 14	0.097	Aug 9	0.111
Second High:	Jul 29	0.097	Jul 1	0.089	Aug 1	0.103
Third High:	Jul 26	0.093	Jul 8	0.089	Aug 7	0.103
Fourth High:	Jul 27	0.093	Jun 24	0.088	Jul 30	0.102
California:						
# Days Above the Standard:		2		1		8
California Designation Value:		0.10		0.09		0.10
Expected Peak Day Concentration:		0.099		0.092		0.097
National:						
# Days Above the Standard:		*0*		*0*		*0*
3-Year Estimated Expected Number of Exceedance Days:		*0.0*		*0.0*		*0.0*
1-Year Estimated Expected Number of Exceedance Days:		*0.0*		*0.0*		*0.0*
Nat'l Standard Design Value:		*0.103*		*0.097*		*0.103*
Year Coverage:		95		99		99

Notes:

Hourly ozone measurements and related statistics are available at Mojave-923 Poole Street between 1993 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

iADAM

at Mojave-923 Poole Street

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jul 28	0.093	Jul 14	0.085	Aug 7	0.094
Second High:	Jul 29	0.086	Jul 1	0.081	Aug 9	0.093
Third High:	Jul 27	0.085	Jun 23	0.080	Aug 4	0.092
Fourth High:	Jun 20	0.084	Jul 15	0.080	Jul 29	0.091
California Std (0.070 ppm):						
First High:	Jul 28	0.093	Jul 14	0.086	Aug 7	0.095
Second High:	Jul 29	0.086	Jul 1	0.082	Aug 4	0.093
Third High:	Jul 27	0.085	Jul 15	0.081	Aug 9	0.093
Fourth High:	Aug 13	0.085	Jun 23	0.080	Jul 29	0.091
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		52		35		53
Nat'l Standard Design Value:		0.084		0.081		0.085
National Year Coverage:		96		99		99
California Std (0.070 ppm):						
# Days Above the Standard:		60		37		56
California Designation Value:		0.093		0.086		0.091
Expected Peak Day Concentration:		0.094		0.088		0.092
California Year Coverage:		92		99		99

Notes:

Eight-hour ozone averages and related statistics are available at Mojave-923 Poole Street between 1993 and 2018. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Mojave-923 Poole Street

iADAM

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
	National:					
First High:	Jul 28	25.7	Jul 14	26.9	Aug 4	39.0
Second High:	Jul 30	23.8	Jul 11	20.1	Aug 7	37.3
Third High:	Nov 16	23.0	Oct 19	18.5	Aug 10	32.1
Fourth High:	Aug 22	22.8	Dec 16	18.0	Aug 9	31.5
	California:					
First High:	Jul 28	25.7	Jul 14	26.9	Aug 4	39.0
Second High:	Jul 30	23.8	Jul 11	20.1	Aug 7	37.3
Third High:	Nov 16	23.0	Oct 19	18.5	Aug 10	32.1
Fourth High:	Aug 22	22.8	Dec 16	18.0	Aug 9	31.5
	National:					
Estimated # Days > 24-Hour Std:		0.0		0.0		2.1
Measured # Days > 24-Hour Std:		0		0		2
24-Hour Standard Design Value:		20		17		21
24-Hour Standard 98th Percentile:		20.6		16.6		25.9
2006 Annual Std Design Value:		6.1		6.0		6.7
2013 Annual Std Design Value:		6.1		6.0		6.7
Annual Average:		7.4		5.5		7.1
	California:					
Annual Std Designation Value:		6		*		*
Annual Average:		*		*		*
Year Coverage:		96		95		94

Notes:

Daily PM2.5 averages and related statistics are available at Mojave-923 Poole Street between 1999 and 2018. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Mojave-923 Poole Street

iADAM

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Sep 22	139.2	Sep 19	93.4	Oct 29	93.1
Second High:	Jul 30	98.5	Oct 11	76.5	Aug 31	89.4
Third High:	Jun 22	96.3	Oct 12	73.4	Jul 10	78.5
Fourth High:	Nov 16	95.5	Oct 19	62.0	Feb 11	77.9
California:						
First High:	Sep 22	130.3	Sep 19	85.7	Oct 29	86.5
Second High:	Nov 16	91.3	Oct 11	70.8	Aug 31	77.5
Third High:	Oct 5	86.7	Oct 12	68.2	Feb 11	74.1
Fourth High:	Jul 30	86.5	Oct 2	56.5	Sep 19	70.3
National:						
Estimated # Days > 24-Hour Std:		0.0		*		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		*		*
Annual Average:		*26.2*		*25.3*		*26.7*
3-Year Average:		*25*		*24*		*26*
California:						
Estimated # Days > 24-Hour Std:		18.9		*		*
Measured # Days > 24-Hour Std:		18		10		19
Annual Average:		23.8		*		*
3-Year Maximum Annual Average:		24		24		24
Year Coverage:		0		0		0

Notes:

Daily PM10 averages and related statistics are available at Mojave-923 Poole Street between 1994 and 2018. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Hydrogen Sulfide Measurements

at Trona-Athol and Telegraph

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jan 13	0.083	Aug 1	0.164	Dec 21	0.104
Second High:	Feb 11	0.077	Sep 5	0.084	May 27	0.098
Third High:	Feb 16	0.068	Jul 7	0.081	Jan 17	0.096
Fourth High:	May 29	0.068	Jun 19	0.079	Apr 23	0.088
# Days Above the Standard:		48		63		120
California Designation Value:		0.16		0.16		0.16
Expected Peak Day Concentration:		*		*		*
Year Coverage:		33		64		65

Notes:

Hourly hydrogen sulfide measurements and related statistics are available at Trona-Athol and Telegraph between 1997 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Victorville-14306 Park Avenue

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
	National:					
First High:	Aug 6	97.2	Oct 19	57.3	Sep 19	51.4
Second High:	May 21	93.0	Oct 6	54.8	Jun 21	49.0
Third High:	Aug 13	89.6	Oct 26	53.5	Jun 4	47.2
Fourth High:	Mar 3	54.5	Oct 13	52.1	Apr 23	46.9
	California:					
First High:	Aug 6	97	Oct 19	57	Sep 19	51
Second High:	May 21	93	Oct 6	54	Jun 21	49
Third High:	Aug 13	89	Oct 26	53	Jun 4	47
Fourth High:	Mar 3	54	Oct 13	52	Apr 23	46
	National:					
1-Hour Standard Design Value:		50		49		48
1-Hour Standard 98th Percentile:		47.7		50.6		44.9
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		10		13		12
	California:					
1-Hour Std Designation Value:		60		60		60
Expected Peak Day Concentration:		62		61		57
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		13		12		12
Annual Average:		10		12		11
Year Coverage:		93		96		96

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Victorville-14306 Park Avenue between 2000 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

APPENDIX B: PROJECT EMISSION CALCULATIONS

Sage Ranch AQIA - Phase 1

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Woodstoves - No woodstoves or fireplaces will be installed

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2021 Operational Year

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	300.00	206.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	10.00	7.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD1	0.02	1.4000e-003

tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	OBUS	1.6260e-003	0.00

tblFleetMix	OBUS	1.6260e-003	0.00
tblFleetMix	OBUS	1.6260e-003	0.00
tblFleetMix	OBUS	1.6260e-003	0.00
tblFleetMix	OBUS	1.6260e-003	0.00
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2020	3.5173	3.0925	2.5974	5.3300e-003	0.2691	0.1539	0.4230	0.1015	0.1441	0.2456	0.0000	470.4927	470.4927	0.0926	0.0000	472.8086
Maximum	**3.5173**	**3.0925**	**2.5974**	**5.3300e-003**	**0.2691**	**0.1539**	**0.4230**	**0.1015**	**0.1441**	**0.2456**	**0.0000**	**470.4927**	**470.4927**	**0.0926**	**0.0000**	**472.8086**

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	tons/yr										MT/yr					
2020	3.5173	3.0925	2.5974	5.3300e-003	0.1777	0.1539	0.3316	0.0609	0.1441	0.2050	0.0000	470.4923	470.4923	0.0926	0.0000	472.8082
Maximum	**3.5173**	**3.0925**	**2.5974**	**5.3300e-003**	**0.1777**	**0.1539**	**0.3316**	**0.0609**	**0.1441**	**0.2050**	**0.0000**	**470.4923**	**470.4923**	**0.0926**	**0.0000**	**472.8082**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.98**	**0.00**	**21.61**	**40.00**	**0.00**	**16.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.1729	1.1729
2	**4-1-2020**	**6-30-2020**	0.8117	0.8117
3	**7-1-2020**	**9-30-2020**	0.8206	0.8206
		Highest	1.1729	1.1729

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	tons/yr										MT/yr					
Area	1.1431	0.0123	1.0641	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6800e-003	0.0000	1.7765
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.3649	1.4164	4.3115	0.0147	1.2979	0.0126	1.3105	0.3473	0.0118	0.3591	0.0000	1,348.5386	1,348.5386	0.0719	0.0000	1,350.3361
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.5237**	**1.5621**	**5.4324**	**0.0156**	**1.2979**	**0.0293**	**1.3272**	**0.3473**	**0.0284**	**0.3757**	**27.2214**	**1,883.9432**	**1,911.1646**	**1.8298**	**0.0132**	**1,960.8563**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1427	0.0122	1.0564	6.0000e-005		5.8200e-003	5.8200e-003		5.8200e-003	5.8200e-003	0.0000	1.7188	1.7188	1.6600e-003	0.0000	1.7602
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.3573	1.3611	4.0807	0.0137	1.2083	0.0119	1.2202	0.3233	0.0111	0.3344	0.0000	1,261.5729	1,261.5729	0.0684	0.0000	1,263.2835
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.5156**	**1.5069**	**5.1939**	**0.0147**	**1.2083**	**0.0285**	**1.2368**	**0.3233**	**0.0277**	**0.3510**	**27.2214**	**1,236.6229**	**1,263.8443**	**1.8032**	**8.4500e-003**	**1,311.4440**

	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	N20	CO2e
Percent Reduction	**0.53**	**3.54**	**4.39**	**6.09**	**6.90**	**2.80**	**6.81**	**6.90**	**2.71**	**6.58**	**0.00**	**34.36**	**33.87**	**1.45**	**36.18**	**33.12**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 1 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	1/9/2020	5	7	
2	Grading	Grading	1/10/2020	2/7/2020	5	21	
3	Building Construction	Building Construction	2/10/2020	11/23/2020	5	206	
4	Paving	Paving	11/24/2020	12/11/2020	5	14	
5	Architectural Coating	Architectural Coating	12/14/2020	12/31/2020	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 1 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2020

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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1485	0.0753	1.3000e-004		7.6900e-003	7.6900e-003		7.0800e-003	7.0800e-003	0.0000	11.7007	11.7007	3.7800e-003	0.0000	11.7953
Total	**0.0143**	**0.1485**	**0.0753**	**1.3000e-004**	**0.0632**	**7.6900e-003**	**0.0709**	**0.0348**	**7.0800e-003**	**0.0418**	**0.0000**	**11.7007**	**11.7007**	**3.7800e-003**	**0.0000**	**11.7953**

3.2 Site Preparation - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.6300e-003	1.0000e-005	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4655	0.4655	1.0000e-005	0.0000	0.4658
Total	**2.4000e-004**	**1.6000e-004**	**1.6300e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4655**	**0.4655**	**1.0000e-005**	**0.0000**	**0.4658**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1485	0.0753	1.3000e-004		7.6900e-003	7.6900e-003		7.0800e-003	7.0800e-003	0.0000	11.7007	11.7007	3.7800e-003	0.0000	11.7953
Total	**0.0143**	**0.1485**	**0.0753**	**1.3000e-004**	**0.0285**	**7.6900e-003**	**0.0361**	**0.0156**	**7.0800e-003**	**0.0227**	**0.0000**	**11.7007**	**11.7007**	**3.7800e-003**	**0.0000**	**11.7953**

3.2 Site Preparation - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.6300e-003	1.0000e-005	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4655	0.4655	1.0000e-005	0.0000	0.4658
Total	**2.4000e-004**	**1.6000e-004**	**1.6300e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4655**	**0.4655**	**1.0000e-005**	**0.0000**	**0.4658**

3.3 Grading - 2020

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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.5271	0.3356	6.5000e-004		0.0228	0.0228		0.0210	0.0210	0.0000	57.2085	57.2085	0.0185	0.0000	57.6711
Total	**0.0467**	**0.5271**	**0.3356**	**6.5000e-004**	**0.1030**	**0.0228**	**0.1258**	**0.0391**	**0.0210**	**0.0601**	**0.0000**	**57.2085**	**57.2085**	**0.0185**	**0.0000**	**57.6711**

3.3 Grading - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	8.1000e-004	5.5000e-004	5.4300e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5518	1.5518	4.0000e-005	0.0000	1.5528
Total	**8.1000e-004**	**5.5000e-004**	**5.4300e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5518**	**1.5518**	**4.0000e-005**	**0.0000**	**1.5528**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0467	0.5271	0.3356	6.5000e-004		0.0228	0.0228		0.0210	0.0210	0.0000	57.2084	57.2084	0.0185	0.0000	57.6710
Total	**0.0467**	**0.5271**	**0.3356**	**6.5000e-004**	**0.0464**	**0.0228**	**0.0692**	**0.0176**	**0.0210**	**0.0386**	**0.0000**	**57.2084**	**57.2084**	**0.0185**	**0.0000**	**57.6710**

3.3 Grading - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	8.1000e-004	5.5000e-004	5.4300e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5518	1.5518	4.0000e-005	0.0000	1.5528
Total	**8.1000e-004**	**5.5000e-004**	**5.4300e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5518**	**1.5518**	**4.0000e-005**	**0.0000**	**1.5528**

3.4 Building Construction - 2020

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	tons/yr										MT/yr					
Off-Road	0.2183	1.9762	1.7354	2.7700e-003		0.1151	0.1151		0.1082	0.1082	0.0000	238.5583	238.5583	0.0582	0.0000	240.0133
Total	**0.2183**	**1.9762**	**1.7354**	**2.7700e-003**		**0.1151**	**0.1151**		**0.1082**	**0.1082**	**0.0000**	**238.5583**	**238.5583**	**0.0582**	**0.0000**	**240.0133**

3.4 Building Construction - 2020

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	0.0100	0.3027	0.0585	7.2000e-004	0.0165	1.7000e-003	0.0182	4.7600e-003	1.6200e-003	6.3800e-003	0.0000	68.0402	68.0402	5.4300e-003	0.0000	68.1760
Worker	0.0393	0.0265	0.2638	8.3000e-004	0.0822	5.8000e-004	0.0828	0.0218	5.4000e-004	0.0224	0.0000	75.3502	75.3502	1.9400e-003	0.0000	75.3988
Total	**0.0493**	**0.3293**	**0.3224**	**1.5500e-003**	**0.0987**	**2.2800e-003**	**0.1009**	**0.0266**	**2.1600e-003**	**0.0287**	**0.0000**	**143.3904**	**143.3904**	**7.3700e-003**	**0.0000**	**143.5748**

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	tons/yr										MT/yr					
Off-Road	0.2183	1.9762	1.7354	2.7700e-003		0.1151	0.1151		0.1082	0.1082	0.0000	238.5580	238.5580	0.0582	0.0000	240.0130
Total	**0.2183**	**1.9762**	**1.7354**	**2.7700e-003**		**0.1151**	**0.1151**		**0.1082**	**0.1082**	**0.0000**	**238.5580**	**238.5580**	**0.0582**	**0.0000**	**240.0130**

3.4 Building Construction - 2020

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	0.0100	0.3027	0.0585	7.2000e-004	0.0165	1.7000e-003	0.0182	4.7600e-003	1.6200e-003	6.3800e-003	0.0000	68.0402	68.0402	5.4300e-003	0.0000	68.1760
Worker	0.0393	0.0265	0.2638	8.3000e-004	0.0822	5.8000e-004	0.0828	0.0218	5.4000e-004	0.0224	0.0000	75.3502	75.3502	1.9400e-003	0.0000	75.3988
Total	**0.0493**	**0.3293**	**0.3224**	**1.5500e-003**	**0.0987**	**2.2800e-003**	**0.1009**	**0.0266**	**2.1600e-003**	**0.0287**	**0.0000**	**143.3904**	**143.3904**	**7.3700e-003**	**0.0000**	**143.5748**

3.5 Paving - 2020

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	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0985	0.1026	1.6000e-004		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003	0.0000	14.0198	14.0198	4.5300e-003	0.0000	14.1331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5000e-003**	**0.0985**	**0.1026**	**1.6000e-004**		**5.2700e-003**	**5.2700e-003**		**4.8500e-003**	**4.8500e-003**	**0.0000**	**14.0198**	**14.0198**	**4.5300e-003**	**0.0000**	**14.1331**

3.5 Paving - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	2.7000e-004	2.7200e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7759	0.7759	2.0000e-005	0.0000	0.7764
Total	**4.0000e-004**	**2.7000e-004**	**2.7200e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7759**	**0.7759**	**2.0000e-005**	**0.0000**	**0.7764**

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	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0985	0.1026	1.6000e-004		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003	0.0000	14.0197	14.0197	4.5300e-003	0.0000	14.1331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5000e-003**	**0.0985**	**0.1026**	**1.6000e-004**		**5.2700e-003**	**5.2700e-003**		**4.8500e-003**	**4.8500e-003**	**0.0000**	**14.0197**	**14.0197**	**4.5300e-003**	**0.0000**	**14.1331**

3.5 Paving - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	2.7000e-004	2.7200e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7759	0.7759	2.0000e-005	0.0000	0.7764
Total	**4.0000e-004**	**2.7000e-004**	**2.7200e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7759**	**0.7759**	**2.0000e-005**	**0.0000**	**0.7764**

3.6 Architectural Coating - 2020

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0118	0.0128	2.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	1.7873	1.7873	1.4000e-004	0.0000	1.7907
Total	**3.1773**	**0.0118**	**0.0128**	**2.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.4000e-004**	**0.0000**	**1.7907**

3.6 Architectural Coating - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.4000e-004	3.6000e-004	3.6200e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0345	1.0345	3.0000e-005	0.0000	1.0352
Total	**5.4000e-004**	**3.6000e-004**	**3.6200e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0345**	**1.0345**	**3.0000e-005**	**0.0000**	**1.0352**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-003	0.0118	0.0128	2.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	1.7873	1.7873	1.4000e-004	0.0000	1.7907
Total	**3.1773**	**0.0118**	**0.0128**	**2.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.4000e-004**	**0.0000**	**1.7907**

3.6 Architectural Coating - 2020

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.4000e-004	3.6000e-004	3.6200e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0345	1.0345	3.0000e-005	0.0000	1.0352
Total	**5.4000e-004**	**3.6000e-004**	**3.6200e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0345**	**1.0345**	**3.0000e-005**	**0.0000**	**1.0352**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.3573	1.3611	4.0807	0.0137	1.2083	0.0119	1.2202	0.3233	0.0111	0.3344	0.0000	1,261.5729	1,261.5729	0.0684	0.0000	1,263.2835
Unmitigated	0.3649	1.4164	4.3115	0.0147	1.2979	0.0126	1.3105	0.3473	0.0118	0.3591	0.0000	1,348.5386	1,348.5386	0.0719	0.0000	1,350.3361

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600
Apartments Mid Rise	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600
City Park	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600
Condo/Townhouse	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 1 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1427	0.0122	1.0564	6.0000e-005		5.8200e-003	5.8200e-003		5.8200e-003	5.8200e-003	0.0000	1.7188	1.7188	1.6600e-003	0.0000	1.7602
Unmitigated	1.1431	0.0123	1.0641	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6800e-003	0.0000	1.7765

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0322	0.0123	1.0641	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6800e-003	0.0000	1.7765
Total	**1.1431**	**0.0123**	**1.0641**	**6.0000e-005**		**5.8700e-003**	**5.8700e-003**		**5.8700e-003**	**5.8700e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6800e-003**	**0.0000**	**1.7765**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0318	0.0122	1.0564	6.0000e-005		5.8200e-003	5.8200e-003		5.8200e-003	5.8200e-003	0.0000	1.7188	1.7188	1.6600e-003	0.0000	1.7602
Total	**1.1427**	**0.0122**	**1.0564**	**6.0000e-005**		**5.8200e-003**	**5.8200e-003**		**5.8200e-003**	**5.8200e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6600e-003**	**0.0000**	**1.7602**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 2

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2022 Operational Year

Woodstoves - No woodstoves or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	206.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.48	0.53
tblFleetMix	LDA	0.48	0.53
tblFleetMix	LDA	0.48	0.53
tblFleetMix	LDA	0.48	0.53
tblFleetMix	LDA	0.48	0.53
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.3000e-003
tblFleetMix	LHD1	0.02	1.3000e-003
tblFleetMix	LHD1	0.02	1.3000e-003
tblFleetMix	LHD1	0.02	1.3000e-003

tblFleetMix	LHD1	0.02	1.3000e-003
tblFleetMix	LHD2	5.9280e-003	9.0000e-004
tblFleetMix	LHD2	5.9280e-003	9.0000e-004
tblFleetMix	LHD2	5.9280e-003	9.0000e-004
tblFleetMix	LHD2	5.9280e-003	9.0000e-004
tblFleetMix	LHD2	5.9280e-003	9.0000e-004
tblFleetMix	MCY	5.8390e-003	2.5000e-003
tblFleetMix	MCY	5.8390e-003	2.5000e-003
tblFleetMix	MCY	5.8390e-003	2.5000e-003
tblFleetMix	MCY	5.8390e-003	2.5000e-003
tblFleetMix	MCY	5.8390e-003	2.5000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	8.1600e-004	1.8000e-003
tblFleetMix	MH	8.1600e-004	1.8000e-003
tblFleetMix	MH	8.1600e-004	1.8000e-003
tblFleetMix	MH	8.1600e-004	1.8000e-003
tblFleetMix	MH	8.1600e-004	1.8000e-003
tblFleetMix	MHD	0.02	8.6000e-003
tblFleetMix	MHD	0.02	8.6000e-003
tblFleetMix	MHD	0.02	8.6000e-003
tblFleetMix	MHD	0.02	8.6000e-003
tblFleetMix	MHD	0.02	8.6000e-003
tblFleetMix	OBUS	1.6200e-003	0.00

tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	7.0000e-004
tblFleetMix	SBUS	9.3100e-004	7.0000e-004
tblFleetMix	SBUS	9.3100e-004	7.0000e-004
tblFleetMix	SBUS	9.3100e-004	7.0000e-004
tblFleetMix	SBUS	9.3100e-004	7.0000e-004
tblFleetMix	UBUS	1.6640e-003	4.4000e-003
tblFleetMix	UBUS	1.6640e-003	4.4000e-003
tblFleetMix	UBUS	1.6640e-003	4.4000e-003
tblFleetMix	UBUS	1.6640e-003	4.4000e-003
tblFleetMix	UBUS	1.6640e-003	4.4000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2021	3.4846	2.8156	2.5155	5.2800e-003	0.2689	0.1331	0.4020	0.1015	0.1245	0.2260	0.0000	465.8849	465.8849	0.0912	0.0000	468.1636
Maximum	**3.4846**	**2.8156**	**2.5155**	**5.2800e-003**	**0.2689**	**0.1331**	**0.4020**	**0.1015**	**0.1245**	**0.2260**	**0.0000**	**465.8849**	**465.8849**	**0.0912**	**0.0000**	**468.1636**

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	tons/yr										MT/yr					
2021	3.4846	2.8156	2.5155	5.2800e-003	0.1775	0.1331	0.3106	0.0609	0.1245	0.1854	0.0000	465.8846	465.8846	0.0912	0.0000	468.1632
Maximum	**3.4846**	**2.8156**	**2.5155**	**5.2800e-003**	**0.1775**	**0.1331**	**0.3106**	**0.0609**	**0.1245**	**0.1854**	**0.0000**	**465.8846**	**465.8846**	**0.0912**	**0.0000**	**468.1632**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.00**	**0.00**	**22.74**	**40.01**	**0.00**	**17.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2021**	**3-31-2021**	1.1048	1.1048
2	**4-1-2021**	**6-30-2021**	0.7358	0.7358
3	**7-1-2021**	**9-30-2021**	0.7439	0.7439
		Highest	1.1048	1.1048

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	tons/yr										MT/yr					
Area	1.1430	0.0123	1.0630	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7763
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.3353	1.3039	3.9508	0.0142	1.2971	0.0119	1.3090	0.3470	0.0111	0.3580	0.0000	1,306.6160	1,306.6160	0.0669	0.0000	1,308.2895
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4939**	**1.4497**	**5.0705**	**0.0151**	**1.2971**	**0.0286**	**1.3257**	**0.3470**	**0.0277**	**0.3747**	**27.2214**	**1,842.0205**	**1,869.2419**	**1.8249**	**0.0132**	**1,918.8096**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1425	0.0122	1.0553	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6500e-003	0.0000	1.7601
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.3283	1.2547	3.7384	0.0133	1.2076	0.0112	1.2188	0.3230	0.0104	0.3334	0.0000	1,222.4560	1,222.4560	0.0637	0.0000	1,224.0494
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4865**	**1.4004**	**4.8505**	**0.0142**	**1.2076**	**0.0278**	**1.2354**	**0.3230**	**0.0270**	**0.3501**	**27.2214**	**1,197.5061**	**1,224.7275**	**1.7985**	**8.4500e-003**	**1,272.2097**

	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**	**N20**	**CO2e**
Percent Reduction	**0.50**	**3.40**	**4.34**	**6.08**	**6.90**	**2.70**	**6.81**	**6.90**	**2.56**	**6.58**	**0.00**	**34.99**	**34.48**	**1.44**	**36.18**	**33.70**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 2 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2021	1/11/2021	5	7	
2	Grading	Grading	1/12/2021	2/9/2021	5	21	
3	Building Construction	Building Construction	2/10/2021	11/24/2021	5	206	
4	Paving	Paving	11/25/2021	12/13/2021	5	13	
5	Architectural Coating	Architectural Coating	12/14/2021	12/30/2021	5	13	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 2 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0136	0.1417	0.0740	1.3000e-004		7.1600e-003	7.1600e-003		6.5800e-003	6.5800e-003	0.0000	11.7025	11.7025	3.7800e-003	0.0000	11.7971
Total	**0.0136**	**0.1417**	**0.0740**	**1.3000e-004**	**0.0632**	**7.1600e-003**	**0.0704**	**0.0348**	**6.5800e-003**	**0.0413**	**0.0000**	**11.7025**	**11.7025**	**3.7800e-003**	**0.0000**	**11.7971**

3.2 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.4800e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4493	0.4493	1.0000e-005	0.0000	0.4496
Total	**2.2000e-004**	**1.5000e-004**	**1.4800e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4493**	**0.4493**	**1.0000e-005**	**0.0000**	**0.4496**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0136	0.1417	0.0740	1.3000e-004		7.1600e-003	7.1600e-003		6.5800e-003	6.5800e-003	0.0000	11.7025	11.7025	3.7800e-003	0.0000	11.7971
Total	**0.0136**	**0.1417**	**0.0740**	**1.3000e-004**	**0.0285**	**7.1600e-003**	**0.0356**	**0.0156**	**6.5800e-003**	**0.0222**	**0.0000**	**11.7025**	**11.7025**	**3.7800e-003**	**0.0000**	**11.7971**

3.2 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.4800e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4493	0.4493	1.0000e-005	0.0000	0.4496
Total	**2.2000e-004**	**1.5000e-004**	**1.4800e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4493**	**0.4493**	**1.0000e-005**	**0.0000**	**0.4496**

3.3 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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.4872	0.3242	6.5000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	57.2197	57.2197	0.0185	0.0000	57.6824
Total	**0.0440**	**0.4872**	**0.3242**	**6.5000e-004**	**0.1030**	**0.0209**	**0.1239**	**0.0391**	**0.0192**	**0.0582**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6824**

3.3 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	7.4000e-004	4.9000e-004	4.9400e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4977	1.4977	4.0000e-005	0.0000	1.4986
Total	**7.4000e-004**	**4.9000e-004**	**4.9400e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4977**	**1.4977**	**4.0000e-005**	**0.0000**	**1.4986**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0440	0.4872	0.3242	6.5000e-004		0.0209	0.0209		0.0192	0.0192	0.0000	57.2197	57.2197	0.0185	0.0000	57.6823
Total	**0.0440**	**0.4872**	**0.3242**	**6.5000e-004**	**0.0464**	**0.0209**	**0.0672**	**0.0176**	**0.0192**	**0.0368**	**0.0000**	**57.2197**	**57.2197**	**0.0185**	**0.0000**	**57.6823**

3.3 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	7.4000e-004	4.9000e-004	4.9400e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4977	1.4977	4.0000e-005	0.0000	1.4986
Total	**7.4000e-004**	**4.9000e-004**	**4.9400e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4977**	**1.4977**	**4.0000e-005**	**0.0000**	**1.4986**

3.4 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	tons/yr										MT/yr					
Off-Road	0.1958	1.7955	1.7073	2.7700e-003		0.0987	0.0987		0.0928	0.0928	0.0000	238.5864	238.5864	0.0576	0.0000	240.0254
Total	**0.1958**	**1.7955**	**1.7073**	**2.7700e-003**		**0.0987**	**0.0987**		**0.0928**	**0.0928**	**0.0000**	**238.5864**	**238.5864**	**0.0576**	**0.0000**	**240.0254**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	8.1200e-003	0.2725	0.0512	7.1000e-004	0.0165	7.3000e-004	0.0172	4.7600e-003	7.0000e-004	5.4600e-003	0.0000	67.4078	67.4078	5.1600e-003	0.0000	67.5367
Worker	0.0361	0.0236	0.2400	8.0000e-004	0.0822	5.6000e-004	0.0827	0.0218	5.2000e-004	0.0224	0.0000	72.7241	72.7241	1.7300e-003	0.0000	72.7674
Total	**0.0443**	**0.2961**	**0.2912**	**1.5100e-003**	**0.0987**	**1.2900e-003**	**0.1000**	**0.0266**	**1.2200e-003**	**0.0278**	**0.0000**	**140.1319**	**140.1319**	**6.8900e-003**	**0.0000**	**140.3041**

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	tons/yr										MT/yr					
Off-Road	0.1958	1.7955	1.7072	2.7700e-003		0.0987	0.0987		0.0928	0.0928	0.0000	238.5861	238.5861	0.0576	0.0000	240.0251
Total	**0.1958**	**1.7955**	**1.7072**	**2.7700e-003**		**0.0987**	**0.0987**		**0.0928**	**0.0928**	**0.0000**	**238.5861**	**238.5861**	**0.0576**	**0.0000**	**240.0251**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	8.1200e-003	0.2725	0.0512	7.1000e-004	0.0165	7.3000e-004	0.0172	4.7600e-003	7.0000e-004	5.4600e-003	0.0000	67.4078	67.4078	5.1600e-003	0.0000	67.5367
Worker	0.0361	0.0236	0.2400	8.0000e-004	0.0822	5.6000e-004	0.0827	0.0218	5.2000e-004	0.0224	0.0000	72.7241	72.7241	1.7300e-003	0.0000	72.7674
Total	**0.0443**	**0.2961**	**0.2912**	**1.5100e-003**	**0.0987**	**1.2900e-003**	**0.1000**	**0.0266**	**1.2200e-003**	**0.0278**	**0.0000**	**140.1319**	**140.1319**	**6.8900e-003**	**0.0000**	**140.3041**

3.5 Paving - 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	tons/yr										MT/yr					
Off-Road	8.1600e-003	0.0840	0.0953	1.5000e-004		4.4100e-003	4.4100e-003		4.0500e-003	4.0500e-003	0.0000	13.0153	13.0153	4.2100e-003	0.0000	13.1205
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1600e-003**	**0.0840**	**0.0953**	**1.5000e-004**		**4.4100e-003**	**4.4100e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**13.0153**	**13.0153**	**4.2100e-003**	**0.0000**	**13.1205**

3.5 Paving - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.5000e-004	2.3000e-004	2.2900e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6954	0.6954	2.0000e-005	0.0000	0.6958
Total	**3.5000e-004**	**2.3000e-004**	**2.2900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6954**	**0.6954**	**2.0000e-005**	**0.0000**	**0.6958**

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	tons/yr										MT/yr					
Off-Road	8.1600e-003	0.0840	0.0953	1.5000e-004		4.4100e-003	4.4100e-003		4.0500e-003	4.0500e-003	0.0000	13.0153	13.0153	4.2100e-003	0.0000	13.1205
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1600e-003**	**0.0840**	**0.0953**	**1.5000e-004**		**4.4100e-003**	**4.4100e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**13.0153**	**13.0153**	**4.2100e-003**	**0.0000**	**13.1205**

3.5 Paving - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.5000e-004	2.3000e-004	2.2900e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6954	0.6954	2.0000e-005	0.0000	0.6958
Total	**3.5000e-004**	**2.3000e-004**	**2.2900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6954**	**0.6954**	**2.0000e-005**	**0.0000**	**0.6958**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4200e-003	9.9200e-003	0.0118	2.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	1.6596	1.6596	1.1000e-004	0.0000	1.6625
Total	**3.1770**	**9.9200e-003**	**0.0118**	**2.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**1.6596**	**1.6596**	**1.1000e-004**	**0.0000**	**1.6625**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.6000e-004	3.0000e-004	3.0600e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.9272	0.9272	2.0000e-005	0.0000	0.9277
Total	**4.6000e-004**	**3.0000e-004**	**3.0600e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.9272**	**0.9272**	**2.0000e-005**	**0.0000**	**0.9277**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4200e-003	9.9200e-003	0.0118	2.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	1.6596	1.6596	1.1000e-004	0.0000	1.6625
Total	**3.1770**	**9.9200e-003**	**0.0118**	**2.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**1.6596**	**1.6596**	**1.1000e-004**	**0.0000**	**1.6625**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.6000e-004	3.0000e-004	3.0600e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.9272	0.9272	2.0000e-005	0.0000	0.9277
Total	**4.6000e-004**	**3.0000e-004**	**3.0600e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.9272**	**0.9272**	**2.0000e-005**	**0.0000**	**0.9277**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.3283	1.2547	3.7384	0.0133	1.2076	0.0112	1.2188	0.3230	0.0104	0.3334	0.0000	1,222.4560	1,222.4560	0.0637	0.0000	1,224.0494
Unmitigated	0.3353	1.3039	3.9508	0.0142	1.2971	0.0119	1.3090	0.3470	0.0111	0.3580	0.0000	1,306.6160	1,306.6160	0.0669	0.0000	1,308.2895

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.534300	0.203000	0.167300	0.054500	0.001300	0.000900	0.008600	0.020700	0.000000	0.004400	0.002500	0.000700	0.001800
Apartments Mid Rise	0.534300	0.203000	0.167300	0.054500	0.001300	0.000900	0.008600	0.020700	0.000000	0.004400	0.002500	0.000700	0.001800
City Park	0.534300	0.203000	0.167300	0.054500	0.001300	0.000900	0.008600	0.020700	0.000000	0.004400	0.002500	0.000700	0.001800
Condo/Townhouse	0.534300	0.203000	0.167300	0.054500	0.001300	0.000900	0.008600	0.020700	0.000000	0.004400	0.002500	0.000700	0.001800
Single Family Housing	0.534300	0.203000	0.167300	0.054500	0.001300	0.000900	0.008600	0.020700	0.000000	0.004400	0.002500	0.000700	0.001800

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 2 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1425	0.0122	1.0553	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6500e-003	0.0000	1.7601
Unmitigated	1.1430	0.0123	1.0630	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7763

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0321	0.0123	1.0630	6.0000e-005		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7763
Total	**1.1430**	**0.0123**	**1.0630**	**6.0000e-005**		**5.8700e-003**	**5.8700e-003**		**5.8700e-003**	**5.8700e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6700e-003**	**0.0000**	**1.7763**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0317	0.0122	1.0553	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6500e-003	0.0000	1.7601
Total	**1.1425**	**0.0122**	**1.0553**	**6.0000e-005**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6500e-003**	**0.0000**	**1.7601**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 3

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2023 Operational Year

Woodstoves - No woodstoves or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	205.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD1	0.02	1.1000e-003

tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	OBUS	1.6120e-003	0.00

tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	UBUS	1.6100e-003	4.3000e-003
tblFleetMix	UBUS	1.6100e-003	4.3000e-003
tblFleetMix	UBUS	1.6100e-003	4.3000e-003
tblFleetMix	UBUS	1.6100e-003	4.3000e-003
tblFleetMix	UBUS	1.6100e-003	4.3000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2022	3.4506	2.4841	2.4335	5.2200e-003	0.2685	0.1112	0.3796	0.1013	0.1041	0.2054	0.0000	460.8146	460.8146	0.0901	0.0000	463.0661
Maximum	**3.4506**	**2.4841**	**2.4335**	**5.2200e-003**	**0.2685**	**0.1112**	**0.3796**	**0.1013**	**0.1041**	**0.2054**	**0.0000**	**460.8146**	**460.8146**	**0.0901**	**0.0000**	**463.0661**

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	tons/yr										MT/yr					
2022	3.4506	2.4841	2.4335	5.2200e-003	0.1770	0.1112	0.2882	0.0608	0.1041	0.1648	0.0000	460.8142	460.8142	0.0901	0.0000	463.0657
Maximum	**3.4506**	**2.4841**	**2.4335**	**5.2200e-003**	**0.1770**	**0.1112**	**0.2882**	**0.0608**	**0.1041**	**0.1648**	**0.0000**	**460.8142**	**460.8142**	**0.0901**	**0.0000**	**463.0657**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.06**	**0.01**	**24.09**	**40.05**	**0.00**	**19.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-3-2022**	**4-2-2022**	0.9377	0.9377
2	**4-3-2022**	**7-2-2022**	0.6640	0.6640
3	**7-3-2022**	**9-30-2022**	0.6567	0.6567
		Highest	0.9377	0.9377

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	tons/yr										MT/yr					
Area	1.1429	0.0122	1.0620	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7761
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.3054	1.0737	3.6284	0.0138	1.2962	0.0103	1.3065	0.3465	9.5800e-003	0.3561	0.0000	1,267.6106	1,267.6106	0.0577	0.0000	1,269.0528
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4639**	**1.2194**	**4.7473**	**0.0147**	**1.2962**	**0.0270**	**1.3232**	**0.3465**	**0.0263**	**0.3728**	**27.2214**	**1,803.0152**	**1,830.2366**	**1.8156**	**0.0132**	**1,879.5727**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1424	0.0122	1.0544	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7599
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.2991	1.0357	3.4321	0.0129	1.2068	9.6900e-003	1.2165	0.3226	9.0000e-003	0.3316	0.0000	1,186.1496	1,186.1496	0.0548	0.0000	1,187.5183
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4572**	**1.1814**	**4.5433**	**0.0138**	**1.2068**	**0.0263**	**1.2331**	**0.3226**	**0.0256**	**0.3483**	**27.2214**	**1,161.1997**	**1,188.4211**	**1.7895**	**8.4500e-003**	**1,235.6785**

	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	N20	CO2e
Percent Reduction	**0.46**	**3.12**	**4.30**	**5.99**	**6.90**	**2.52**	**6.81**	**6.90**	**2.40**	**6.58**	**0.00**	**35.60**	**35.07**	**1.44**	**36.18**	**34.26**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 3 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	1/11/2022	5	7	
2	Grading	Grading	1/12/2022	2/9/2022	5	21	
3	Building Construction	Building Construction	2/10/2022	11/23/2022	5	205	
4	Paving	Paving	11/24/2022	12/12/2022	5	13	
5	Architectural Coating	Architectural Coating	12/13/2022	12/29/2022	5	13	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 3 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1158	0.0689	1.3000e-004		5.6400e-003	5.6400e-003		5.1900e-003	5.1900e-003	0.0000	11.7038	11.7038	3.7900e-003	0.0000	11.7984
Total	**0.0111**	**0.1158**	**0.0689**	**1.3000e-004**	**0.0632**	**5.6400e-003**	**0.0689**	**0.0348**	**5.1900e-003**	**0.0400**	**0.0000**	**11.7038**	**11.7038**	**3.7900e-003**	**0.0000**	**11.7984**

3.2 Site Preparation - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.1000e-004	1.3000e-004	1.3500e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4330	0.4330	1.0000e-005	0.0000	0.4332
Total	**2.1000e-004**	**1.3000e-004**	**1.3500e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4330**	**0.4330**	**1.0000e-005**	**0.0000**	**0.4332**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1158	0.0689	1.3000e-004		5.6400e-003	5.6400e-003		5.1900e-003	5.1900e-003	0.0000	11.7038	11.7038	3.7900e-003	0.0000	11.7984
Total	**0.0111**	**0.1158**	**0.0689**	**1.3000e-004**	**0.0285**	**5.6400e-003**	**0.0341**	**0.0156**	**5.1900e-003**	**0.0208**	**0.0000**	**11.7038**	**11.7038**	**3.7900e-003**	**0.0000**	**11.7984**

3.2 Site Preparation - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.1000e-004	1.3000e-004	1.3500e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4330	0.4330	1.0000e-005	0.0000	0.4332
Total	**2.1000e-004**	**1.3000e-004**	**1.3500e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4330**	**0.4330**	**1.0000e-005**	**0.0000**	**0.4332**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4079	0.3049	6.5000e-004		0.0172	0.0172		0.0158	0.0158	0.0000	57.2613	57.2613	0.0185	0.0000	57.7243
Total	**0.0381**	**0.4079**	**0.3049**	**6.5000e-004**	**0.1030**	**0.0172**	**0.1202**	**0.0391**	**0.0158**	**0.0548**	**0.0000**	**57.2613**	**57.2613**	**0.0185**	**0.0000**	**57.7243**

3.3 Grading - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.9000e-004	4.3000e-004	4.5100e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4433	1.4433	3.0000e-005	0.0000	1.4441
Total	**6.9000e-004**	**4.3000e-004**	**4.5100e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4433**	**1.4433**	**3.0000e-005**	**0.0000**	**1.4441**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0381	0.4079	0.3049	6.5000e-004		0.0172	0.0172		0.0158	0.0158	0.0000	57.2613	57.2613	0.0185	0.0000	57.7243
Total	**0.0381**	**0.4079**	**0.3049**	**6.5000e-004**	**0.0464**	**0.0172**	**0.0635**	**0.0176**	**0.0158**	**0.0334**	**0.0000**	**57.2613**	**57.2613**	**0.0185**	**0.0000**	**57.7243**

3.3 Grading - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.9000e-004	4.3000e-004	4.5100e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4433	1.4433	3.0000e-005	0.0000	1.4441
Total	**6.9000e-004**	**4.3000e-004**	**4.5100e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.4433**	**1.4433**	**3.0000e-005**	**0.0000**	**1.4441**

3.4 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	tons/yr										MT/yr					
Off-Road	0.1749	1.6006	1.6773	2.7600e-003		0.0829	0.0829		0.0780	0.0780	0.0000	237.5184	237.5184	0.0569	0.0000	238.9409
Total	**0.1749**	**1.6006**	**1.6773**	**2.7600e-003**		**0.0829**	**0.0829**		**0.0780**	**0.0780**	**0.0000**	**237.5184**	**237.5184**	**0.0569**	**0.0000**	**238.9409**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	7.5400e-003	0.2564	0.0473	7.0000e-004	0.0164	6.3000e-004	0.0171	4.7400e-003	6.0000e-004	5.3400e-003	0.0000	66.4719	66.4719	4.9300e-003	0.0000	66.5950
Worker	0.0333	0.0209	0.2179	7.7000e-004	0.0818	5.4000e-004	0.0823	0.0217	5.0000e-004	0.0222	0.0000	69.7419	69.7419	1.5300e-003	0.0000	69.7802
Total	**0.0408**	**0.2773**	**0.2651**	**1.4700e-003**	**0.0982**	**1.1700e-003**	**0.0994**	**0.0265**	**1.1000e-003**	**0.0276**	**0.0000**	**136.2137**	**136.2137**	**6.4600e-003**	**0.0000**	**136.3752**

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	tons/yr										MT/yr					
Off-Road	0.1749	1.6006	1.6773	2.7600e-003		0.0829	0.0829		0.0780	0.0780	0.0000	237.5181	237.5181	0.0569	0.0000	238.9407
Total	**0.1749**	**1.6006**	**1.6773**	**2.7600e-003**		**0.0829**	**0.0829**		**0.0780**	**0.0780**	**0.0000**	**237.5181**	**237.5181**	**0.0569**	**0.0000**	**238.9407**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	7.5400e-003	0.2564	0.0473	7.0000e-004	0.0164	6.3000e-004	0.0171	4.7400e-003	6.0000e-004	5.3400e-003	0.0000	66.4719	66.4719	4.9300e-003	0.0000	66.5950
Worker	0.0333	0.0209	0.2179	7.7000e-004	0.0818	5.4000e-004	0.0823	0.0217	5.0000e-004	0.0222	0.0000	69.7419	69.7419	1.5300e-003	0.0000	69.7802
Total	**0.0408**	**0.2773**	**0.2651**	**1.4700e-003**	**0.0982**	**1.1700e-003**	**0.0994**	**0.0265**	**1.1000e-003**	**0.0276**	**0.0000**	**136.2137**	**136.2137**	**6.4600e-003**	**0.0000**	**136.3752**

3.5 Paving - 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	tons/yr										MT/yr					
Off-Road	7.1700e-003	0.0723	0.0948	1.5000e-004		3.6900e-003	3.6900e-003		3.4000e-003	3.4000e-003	0.0000	13.0179	13.0179	4.2100e-003	0.0000	13.1232
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1700e-003**	**0.0723**	**0.0948**	**1.5000e-004**		**3.6900e-003**	**3.6900e-003**		**3.4000e-003**	**3.4000e-003**	**0.0000**	**13.0179**	**13.0179**	**4.2100e-003**	**0.0000**	**13.1232**

3.5 Paving - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.2000e-004	2.0000e-004	2.0900e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6701	0.6701	1.0000e-005	0.0000	0.6705
Total	**3.2000e-004**	**2.0000e-004**	**2.0900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6701**	**0.6701**	**1.0000e-005**	**0.0000**	**0.6705**

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	tons/yr										MT/yr					
Off-Road	7.1700e-003	0.0723	0.0948	1.5000e-004		3.6900e-003	3.6900e-003		3.4000e-003	3.4000e-003	0.0000	13.0179	13.0179	4.2100e-003	0.0000	13.1232
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1700e-003**	**0.0723**	**0.0948**	**1.5000e-004**		**3.6900e-003**	**3.6900e-003**		**3.4000e-003**	**3.4000e-003**	**0.0000**	**13.0179**	**13.0179**	**4.2100e-003**	**0.0000**	**13.1232**

3.5 Paving - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.2000e-004	2.0000e-004	2.0900e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6701	0.6701	1.0000e-005	0.0000	0.6705
Total	**3.2000e-004**	**2.0000e-004**	**2.0900e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6701**	**0.6701**	**1.0000e-005**	**0.0000**	**0.6705**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1600e-003	0.0118	2.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	1.6596	1.6596	1.1000e-004	0.0000	1.6623
Total	**3.1769**	**9.1600e-003**	**0.0118**	**2.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**1.6596**	**1.6596**	**1.1000e-004**	**0.0000**	**1.6623**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.3000e-004	2.7000e-004	2.7900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8935	0.8935	2.0000e-005	0.0000	0.8940
Total	**4.3000e-004**	**2.7000e-004**	**2.7900e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8935**	**0.8935**	**2.0000e-005**	**0.0000**	**0.8940**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1600e-003	0.0118	2.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	1.6596	1.6596	1.1000e-004	0.0000	1.6623
Total	**3.1769**	**9.1600e-003**	**0.0118**	**2.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**1.6596**	**1.6596**	**1.1000e-004**	**0.0000**	**1.6623**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.3000e-004	2.7000e-004	2.7900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8935	0.8935	2.0000e-005	0.0000	0.8940
Total	**4.3000e-004**	**2.7000e-004**	**2.7900e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0500e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.8935**	**0.8935**	**2.0000e-005**	**0.0000**	**0.8940**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.2991	1.0357	3.4321	0.0129	1.2068	9.6900e-003	1.2165	0.3226	9.0000e-003	0.3316	0.0000	1,186.1496	1,186.1496	0.0548	0.0000	1,187.5183
Unmitigated	0.3054	1.0737	3.6284	0.0138	1.2962	0.0103	1.3065	0.3465	9.5800e-003	0.3561	0.0000	1,267.6106	1,267.6106	0.0577	0.0000	1,269.0528

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900
Apartments Mid Rise	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900
City Park	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900
Condo/Townhouse	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900
Single Family Housing	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 3 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1424	0.0122	1.0544	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7599
Unmitigated	1.1429	0.0122	1.0620	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7761

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0320	0.0122	1.0620	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6700e-003	0.0000	1.7761
Total	**1.1429**	**0.0122**	**1.0620**	**6.0000e-005**		**5.8800e-003**	**5.8800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6700e-003**	**0.0000**	**1.7761**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0316	0.0122	1.0544	6.0000e-005		5.8300e-003	5.8300e-003		5.8300e-003	5.8300e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7599
Total	**1.1424**	**0.0122**	**1.0544**	**6.0000e-005**		**5.8300e-003**	**5.8300e-003**		**5.8300e-003**	**5.8300e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6400e-003**	**0.0000**	**1.7599**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 4

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Sage Ranch AQIA - Phase 4 - Kern-Mojave Desert County, Annual

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2024 Operational Year

Woodstoves - No woodstoves or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	300.00	204.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	10.00	7.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	9.0000e-004
tblFleetMix	LHD1	0.02	9.0000e-004
tblFleetMix	LHD1	0.02	9.0000e-004
tblFleetMix	LHD1	0.02	9.0000e-004

tblFleetMix	LHD1	0.02	9.0000e-004
tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	OBUS	1.5990e-003	0.00

tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2023	3.4265	2.2209	2.3778	5.1700e-003	0.2681	0.0956	0.3637	0.1013	0.0895	0.1907	0.0000	455.9482	455.9482	0.0880	0.0000	458.1476
Maximum	**3.4265**	**2.2209**	**2.3778**	**5.1700e-003**	**0.2681**	**0.0956**	**0.3637**	**0.1013**	**0.0895**	**0.1907**	**0.0000**	**455.9482**	**455.9482**	**0.0880**	**0.0000**	**458.1476**

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	tons/yr										MT/yr					
2023	3.4265	2.2209	2.3778	5.1700e-003	0.1767	0.0956	0.2723	0.0607	0.0895	0.1501	0.0000	455.9478	455.9478	0.0880	0.0000	458.1472
Maximum	**3.4265**	**2.2209**	**2.3778**	**5.1700e-003**	**0.1767**	**0.0956**	**0.2723**	**0.0607**	**0.0895**	**0.1501**	**0.0000**	**455.9478**	**455.9478**	**0.0880**	**0.0000**	**458.1472**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.10**	**0.00**	**25.14**	**40.10**	**0.00**	**21.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-2-2023**	**4-1-2023**	0.8326	0.8326
2	**4-2-2023**	**7-1-2023**	0.5986	0.5986
3	**7-2-2023**	**9-30-2023**	0.5986	0.5986
		Highest	0.8326	0.8326

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	tons/yr										MT/yr					
Area	1.1428	0.0122	1.0614	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7761
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.2849	1.0076	3.3793	0.0133	1.2953	0.0100	1.3053	0.3462	9.2900e-003	0.3555	0.0000	1,222.9293	1,222.9293	0.0543	0.0000	1,224.2875
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4433**	**1.1534**	**4.4975**	**0.0142**	**1.2953**	**0.0267**	**1.3220**	**0.3462**	**0.0260**	**0.3721**	**27.2214**	**1,758.3338**	**1,785.5552**	**1.8123**	**0.0132**	**1,834.8073**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1424	0.0122	1.0537	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.2790	0.9728	3.1955	0.0125	1.2059	9.4000e-003	1.2153	0.3223	8.7200e-003	0.3310	0.0000	1,144.3322	1,144.3322	0.0516	0.0000	1,145.6220
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4370**	**1.1185**	**4.3060**	**0.0134**	**1.2059**	**0.0260**	**1.2320**	**0.3223**	**0.0254**	**0.3476**	**27.2214**	**1,119.3822**	**1,146.6036**	**1.7864**	**8.4500e-003**	**1,193.7821**

	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	N20	CO2e
Percent Reduction	**0.43**	**3.03**	**4.26**	**5.98**	**6.90**	**2.47**	**6.81**	**6.90**	**2.35**	**6.58**	**0.00**	**36.34**	**35.78**	**1.43**	**36.18**	**34.94**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 4 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2023	1/10/2023	5	7	
2	Grading	Grading	1/11/2023	2/8/2023	5	21	
3	Building Construction	Building Construction	2/9/2023	11/21/2023	5	204	
4	Paving	Paving	11/22/2023	12/11/2023	5	14	
5	Architectural Coating	Architectural Coating	12/12/2023	12/29/2023	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 4 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3100e-003	0.0963	0.0639	1.3000e-004		4.4300e-003	4.4300e-003		4.0800e-003	4.0800e-003	0.0000	11.7077	11.7077	3.7900e-003	0.0000	11.8024
Total	**9.3100e-003**	**0.0963**	**0.0639**	**1.3000e-004**	**0.0632**	**4.4300e-003**	**0.0677**	**0.0348**	**4.0800e-003**	**0.0388**	**0.0000**	**11.7077**	**11.7077**	**3.7900e-003**	**0.0000**	**11.8024**

3.2 Site Preparation - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.9000e-004	1.2000e-004	1.2400e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4167	0.4167	1.0000e-005	0.0000	0.4169
Total	**1.9000e-004**	**1.2000e-004**	**1.2400e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4167**	**0.4167**	**1.0000e-005**	**0.0000**	**0.4169**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3100e-003	0.0963	0.0639	1.3000e-004		4.4300e-003	4.4300e-003		4.0800e-003	4.0800e-003	0.0000	11.7077	11.7077	3.7900e-003	0.0000	11.8024
Total	**9.3100e-003**	**0.0963**	**0.0639**	**1.3000e-004**	**0.0285**	**4.4300e-003**	**0.0329**	**0.0156**	**4.0800e-003**	**0.0197**	**0.0000**	**11.7077**	**11.7077**	**3.7900e-003**	**0.0000**	**11.8024**

3.2 Site Preparation - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.9000e-004	1.2000e-004	1.2400e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4167	0.4167	1.0000e-005	0.0000	0.4169
Total	**1.9000e-004**	**1.2000e-004**	**1.2400e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4167**	**0.4167**	**1.0000e-005**	**0.0000**	**0.4169**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.3624	0.2945	6.5000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	57.2620	57.2620	0.0185	0.0000	57.7250
Total	**0.0349**	**0.3624**	**0.2945**	**6.5000e-004**	**0.1030**	**0.0150**	**0.1180**	**0.0391**	**0.0138**	**0.0528**	**0.0000**	**57.2620**	**57.2620**	**0.0185**	**0.0000**	**57.7250**

3.3 Grading - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.4000e-004	3.9000e-004	4.1200e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3890	1.3890	3.0000e-005	0.0000	1.3897
Total	**6.4000e-004**	**3.9000e-004**	**4.1200e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3890**	**1.3890**	**3.0000e-005**	**0.0000**	**1.3897**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0349	0.3624	0.2945	6.5000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	57.2619	57.2619	0.0185	0.0000	57.7249
Total	**0.0349**	**0.3624**	**0.2945**	**6.5000e-004**	**0.0464**	**0.0150**	**0.0613**	**0.0176**	**0.0138**	**0.0313**	**0.0000**	**57.2619**	**57.2619**	**0.0185**	**0.0000**	**57.7249**

3.3 Grading - 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.4000e-004	3.9000e-004	4.1200e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3890	1.3890	3.0000e-005	0.0000	1.3897
Total	**6.4000e-004**	**3.9000e-004**	**4.1200e-003**	**2.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3890**	**1.3890**	**3.0000e-005**	**0.0000**	**1.3897**

3.4 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	tons/yr										MT/yr					
Off-Road	0.1604	1.4673	1.6569	2.7500e-003		0.0714	0.0714		0.0672	0.0672	0.0000	236.4408	236.4408	0.0563	0.0000	237.8470
Total	**0.1604**	**1.4673**	**1.6569**	**2.7500e-003**		**0.0714**	**0.0714**		**0.0672**	**0.0672**	**0.0000**	**236.4408**	**236.4408**	**0.0563**	**0.0000**	**237.8470**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.3000e-003	0.1949	0.0393	6.8000e-004	0.0163	1.9000e-004	0.0165	4.7200e-003	1.8000e-004	4.9000e-003	0.0000	64.5142	64.5142	3.3500e-003	0.0000	64.5980
Worker	0.0308	0.0186	0.1983	7.4000e-004	0.0814	5.3000e-004	0.0819	0.0216	4.9000e-004	0.0221	0.0000	66.7912	66.7912	1.3600e-003	0.0000	66.8252
Total	**0.0361**	**0.2135**	**0.2376**	**1.4200e-003**	**0.0977**	**7.2000e-004**	**0.0984**	**0.0263**	**6.7000e-004**	**0.0270**	**0.0000**	**131.3054**	**131.3054**	**4.7100e-003**	**0.0000**	**131.4232**

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	tons/yr										MT/yr					
Off-Road	0.1604	1.4673	1.6569	2.7500e-003		0.0714	0.0714		0.0672	0.0672	0.0000	236.4406	236.4406	0.0563	0.0000	237.8467
Total	**0.1604**	**1.4673**	**1.6569**	**2.7500e-003**		**0.0714**	**0.0714**		**0.0672**	**0.0672**	**0.0000**	**236.4406**	**236.4406**	**0.0563**	**0.0000**	**237.8467**

3.4 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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.3000e-003	0.1949	0.0393	6.8000e-004	0.0163	1.9000e-004	0.0165	4.7200e-003	1.8000e-004	4.9000e-003	0.0000	64.5142	64.5142	3.3500e-003	0.0000	64.5980
Worker	0.0308	0.0186	0.1983	7.4000e-004	0.0814	5.3000e-004	0.0819	0.0216	4.9000e-004	0.0221	0.0000	66.7912	66.7912	1.3600e-003	0.0000	66.8252
Total	**0.0361**	**0.2135**	**0.2376**	**1.4200e-003**	**0.0977**	**7.2000e-004**	**0.0984**	**0.0263**	**6.7000e-004**	**0.0270**	**0.0000**	**131.3054**	**131.3054**	**4.7100e-003**	**0.0000**	**131.4232**

3.5 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	tons/yr										MT/yr					
Off-Road	7.2300e-003	0.0713	0.1021	1.6000e-004		3.5700e-003	3.5700e-003		3.2900e-003	3.2900e-003	0.0000	14.0188	14.0188	4.5300e-003	0.0000	14.1322
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2300e-003**	**0.0713**	**0.1021**	**1.6000e-004**		**3.5700e-003**	**3.5700e-003**		**3.2900e-003**	**3.2900e-003**	**0.0000**	**14.0188**	**14.0188**	**4.5300e-003**	**0.0000**	**14.1322**

3.5 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.2000e-004	1.9000e-004	2.0600e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.6945	0.6945	1.0000e-005	0.0000	0.6949
Total	**3.2000e-004**	**1.9000e-004**	**2.0600e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.6945**	**0.6945**	**1.0000e-005**	**0.0000**	**0.6949**

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	tons/yr										MT/yr					
Off-Road	7.2300e-003	0.0713	0.1021	1.6000e-004		3.5700e-003	3.5700e-003		3.2900e-003	3.2900e-003	0.0000	14.0188	14.0188	4.5300e-003	0.0000	14.1321
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2300e-003**	**0.0713**	**0.1021**	**1.6000e-004**		**3.5700e-003**	**3.5700e-003**		**3.2900e-003**	**3.2900e-003**	**0.0000**	**14.0188**	**14.0188**	**4.5300e-003**	**0.0000**	**14.1321**

3.5 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.2000e-004	1.9000e-004	2.0600e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.6945	0.6945	1.0000e-005	0.0000	0.6949
Total	**3.2000e-004**	**1.9000e-004**	**2.0600e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.6945**	**0.6945**	**1.0000e-005**	**0.0000**	**0.6949**

3.6 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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900
Total	**3.1769**	**9.1200e-003**	**0.0127**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.1000e-004**	**0.0000**	**1.7900**

3.6 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.3000e-004	2.6000e-004	2.7500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9260	0.9260	2.0000e-005	0.0000	0.9265
Total	**4.3000e-004**	**2.6000e-004**	**2.7500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.9260**	**0.9260**	**2.0000e-005**	**0.0000**	**0.9265**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	9.1200e-003	0.0127	2.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	1.7873	1.7873	1.1000e-004	0.0000	1.7900
Total	**3.1769**	**9.1200e-003**	**0.0127**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.1000e-004**	**0.0000**	**1.7900**

3.6 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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.3000e-004	2.6000e-004	2.7500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9260	0.9260	2.0000e-005	0.0000	0.9265
Total	**4.3000e-004**	**2.6000e-004**	**2.7500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.9260**	**0.9260**	**2.0000e-005**	**0.0000**	**0.9265**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.2790	0.9728	3.1955	0.0125	1.2059	9.4000e-003	1.2153	0.3223	8.7200e-003	0.3310	0.0000	1,144.3322	1,144.3322	0.0516	0.0000	1,145.6220
Unmitigated	0.2849	1.0076	3.3793	0.0133	1.2953	0.0100	1.3053	0.3462	9.2900e-003	0.3555	0.0000	1,222.9293	1,222.9293	0.0543	0.0000	1,224.2875

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000
Apartments Mid Rise	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000
City Park	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000
Condo/Townhouse	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000
Single Family Housing	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 4 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1424	0.0122	1.0537	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Unmitigated	1.1428	0.0122	1.0614	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7761

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0319	0.0122	1.0614	6.0000e-005		5.8800e-003	5.8800e-003		5.8800e-003	5.8800e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7761
Total	**1.1428**	**0.0122**	**1.0614**	**6.0000e-005**		**5.8800e-003**	**5.8800e-003**		**5.8800e-003**	**5.8800e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6600e-003**	**0.0000**	**1.7761**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0315	0.0122	1.0537	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Total	**1.1424**	**0.0122**	**1.0537**	**6.0000e-005**		**5.8400e-003**	**5.8400e-003**		**5.8400e-003**	**5.8400e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6400e-003**	**0.0000**	**1.7598**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 5

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2025
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Sage Ranch AQIA - Phase 5 - Kern-Mojave Desert County, Annual

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2025 Operational Year

Woodstoves - No hearths or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	206.00
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	20.00	14.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	OBUS	1.5890e-003	0.00

tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2024	3.4143	2.1079	2.3678	5.1800e-003	0.2691	0.0859	0.3550	0.1015	0.0804	0.1819	0.0000	456.3842	456.3842	0.0881	0.0000	458.5878
Maximum	**3.4143**	**2.1079**	**2.3678**	**5.1800e-003**	**0.2691**	**0.0859**	**0.3550**	**0.1015**	**0.0804**	**0.1819**	**0.0000**	**456.3842**	**456.3842**	**0.0881**	**0.0000**	**458.5878**

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	tons/yr										MT/yr					
2024	3.4143	2.1079	2.3678	5.1800e-003	0.1777	0.0859	0.2636	0.0609	0.0804	0.1413	0.0000	456.3838	456.3838	0.0881	0.0000	458.5874
Maximum	**3.4143**	**2.1079**	**2.3678**	**5.1800e-003**	**0.1777**	**0.0859**	**0.2636**	**0.0609**	**0.0804**	**0.1413**	**0.0000**	**456.3838**	**456.3838**	**0.0881**	**0.0000**	**458.5874**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.98**	**0.00**	**25.75**	**40.00**	**0.00**	**22.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2024**	**3-31-2024**	0.7939	0.7939
2	**4-1-2024**	**6-30-2024**	0.5629	0.5629
3	**7-1-2024**	**9-30-2024**	0.5691	0.5691
		Highest	0.7939	0.7939

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	tons/yr										MT/yr					
Area	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.2674	0.9563	3.1506	0.0128	1.2948	9.7400e-003	1.3046	0.3460	9.0300e-003	0.3550	0.0000	1,180.9349	1,180.9349	0.0515	0.0000	1,182.2226
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4258**	**1.1020**	**4.2682**	**0.0138**	**1.2948**	**0.0264**	**1.3212**	**0.3460**	**0.0257**	**0.3717**	**27.2214**	**1,716.3395**	**1,743.5609**	**1.8094**	**0.0132**	**1,792.7424**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.2620	0.9240	2.9786	0.0120	1.2055	9.1500e-003	1.2146	0.3221	8.4800e-003	0.3306	0.0000	1,105.0674	1,105.0674	0.0490	0.0000	1,106.2913
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4199**	**1.0697**	**4.0885**	**0.0129**	**1.2055**	**0.0258**	**1.2312**	**0.3221**	**0.0251**	**0.3472**	**27.2214**	**1,080.1174**	**1,107.3388**	**1.7837**	**8.4500e-003**	**1,154.4513**

	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	N20	CO2e
Percent Reduction	**0.41**	**2.93**	**4.21**	**6.04**	**6.90**	**2.42**	**6.81**	**6.90**	**2.33**	**6.58**	**0.00**	**37.07**	**36.49**	**1.42**	**36.18**	**35.60**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 5 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2024	1/9/2024	5	7	
2	Grading	Grading	1/10/2024	2/7/2024	5	21	
3	Building Construction	Building Construction	2/8/2024	11/21/2024	5	206	
4	Paving	Paving	11/22/2024	12/11/2024	5	14	
5	Architectural Coating	Architectural Coating	12/12/2024	12/31/2024	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 5 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2024

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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3100e-003	0.0951	0.0642	1.3000e-004		4.3000e-003	4.3000e-003		3.9600e-003	3.9600e-003	0.0000	11.7100	11.7100	3.7900e-003	0.0000	11.8047
Total	**9.3100e-003**	**0.0951**	**0.0642**	**1.3000e-004**	**0.0632**	**4.3000e-003**	**0.0675**	**0.0348**	**3.9600e-003**	**0.0387**	**0.0000**	**11.7100**	**11.7100**	**3.7900e-003**	**0.0000**	**11.8047**

3.2 Site Preparation - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.8000e-004	1.0000e-004	1.1400e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4008	0.4008	1.0000e-005	0.0000	0.4010
Total	**1.8000e-004**	**1.0000e-004**	**1.1400e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4008**	**0.4008**	**1.0000e-005**	**0.0000**	**0.4010**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3100e-003	0.0951	0.0642	1.3000e-004		4.3000e-003	4.3000e-003		3.9600e-003	3.9600e-003	0.0000	11.7100	11.7100	3.7900e-003	0.0000	11.8046
Total	**9.3100e-003**	**0.0951**	**0.0642**	**1.3000e-004**	**0.0285**	**4.3000e-003**	**0.0328**	**0.0156**	**3.9600e-003**	**0.0196**	**0.0000**	**11.7100**	**11.7100**	**3.7900e-003**	**0.0000**	**11.8046**

3.2 Site Preparation - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.8000e-004	1.0000e-004	1.1400e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4008	0.4008	1.0000e-005	0.0000	0.4010
Total	**1.8000e-004**	**1.0000e-004**	**1.1400e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4008**	**0.4008**	**1.0000e-005**	**0.0000**	**0.4010**

3.3 Grading - 2024

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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0338	0.3400	0.2911	6.5000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	57.2455	57.2455	0.0185	0.0000	57.7084
Total	**0.0338**	**0.3400**	**0.2911**	**6.5000e-004**	**0.1030**	**0.0140**	**0.1170**	**0.0391**	**0.0129**	**0.0520**	**0.0000**	**57.2455**	**57.2455**	**0.0185**	**0.0000**	**57.7084**

3.3 Grading - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.0000e-004	3.5000e-004	3.8200e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3361	1.3361	3.0000e-005	0.0000	1.3367
Total	**6.0000e-004**	**3.5000e-004**	**3.8200e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3361**	**1.3361**	**3.0000e-005**	**0.0000**	**1.3367**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0338	0.3400	0.2911	6.5000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	57.2454	57.2454	0.0185	0.0000	57.7083
Total	**0.0338**	**0.3400**	**0.2911**	**6.5000e-004**	**0.0464**	**0.0140**	**0.0604**	**0.0176**	**0.0129**	**0.0305**	**0.0000**	**57.2454**	**57.2454**	**0.0185**	**0.0000**	**57.7083**

3.3 Grading - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	6.0000e-004	3.5000e-004	3.8200e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3361	1.3361	3.0000e-005	0.0000	1.3367
Total	**6.0000e-004**	**3.5000e-004**	**3.8200e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3361**	**1.3361**	**3.0000e-005**	**0.0000**	**1.3367**

3.4 Building Construction - 2024

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	tons/yr										MT/yr					
Off-Road	0.1516	1.3847	1.6652	2.7800e-003		0.0632	0.0632		0.0594	0.0594	0.0000	238.8046	238.8046	0.0565	0.0000	240.2163
Total	**0.1516**	**1.3847**	**1.6652**	**2.7800e-003**		**0.0632**	**0.0632**		**0.0594**	**0.0594**	**0.0000**	**238.8046**	**238.8046**	**0.0565**	**0.0000**	**240.2163**

3.4 Building Construction - 2024

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.2000e-003	0.1951	0.0376	6.8000e-004	0.0165	1.9000e-004	0.0167	4.7600e-003	1.8000e-004	4.9500e-003	0.0000	64.6470	64.6470	3.4400e-003	0.0000	64.7329
Worker	0.0292	0.0170	0.1853	7.2000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223	0.0000	64.8757	64.8757	1.2400e-003	0.0000	64.9066
Total	**0.0344**	**0.2121**	**0.2229**	**1.4000e-003**	**0.0987**	**7.1000e-004**	**0.0994**	**0.0266**	**6.6000e-004**	**0.0273**	**0.0000**	**129.5227**	**129.5227**	**4.6800e-003**	**0.0000**	**129.6395**

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	tons/yr										MT/yr					
Off-Road	0.1516	1.3847	1.6652	2.7800e-003		0.0632	0.0632		0.0594	0.0594	0.0000	238.8043	238.8043	0.0565	0.0000	240.2161
Total	**0.1516**	**1.3847**	**1.6652**	**2.7800e-003**		**0.0632**	**0.0632**		**0.0594**	**0.0594**	**0.0000**	**238.8043**	**238.8043**	**0.0565**	**0.0000**	**240.2161**

3.4 Building Construction - 2024

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.2000e-003	0.1951	0.0376	6.8000e-004	0.0165	1.9000e-004	0.0167	4.7600e-003	1.8000e-004	4.9500e-003	0.0000	64.6470	64.6470	3.4400e-003	0.0000	64.7329
Worker	0.0292	0.0170	0.1853	7.2000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223	0.0000	64.8757	64.8757	1.2400e-003	0.0000	64.9066
Total	**0.0344**	**0.2121**	**0.2229**	**1.4000e-003**	**0.0987**	**7.1000e-004**	**0.0994**	**0.0266**	**6.6000e-004**	**0.0273**	**0.0000**	**129.5227**	**129.5227**	**4.6800e-003**	**0.0000**	**129.6395**

3.5 Paving - 2024

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	tons/yr										MT/yr					
Off-Road	6.9200e-003	0.0667	0.1024	1.6000e-004		3.2800e-003	3.2800e-003		3.0200e-003	3.0200e-003	0.0000	14.0186	14.0186	4.5300e-003	0.0000	14.1319
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9200e-003**	**0.0667**	**0.1024**	**1.6000e-004**		**3.2800e-003**	**3.2800e-003**		**3.0200e-003**	**3.0200e-003**	**0.0000**	**14.0186**	**14.0186**	**4.5300e-003**	**0.0000**	**14.1319**

3.5 Paving - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.0000e-004	1.7000e-004	1.9100e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6680	0.6680	1.0000e-005	0.0000	0.6684
Total	**3.0000e-004**	**1.7000e-004**	**1.9100e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6680**	**0.6680**	**1.0000e-005**	**0.0000**	**0.6684**

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	tons/yr										MT/yr					
Off-Road	6.9200e-003	0.0667	0.1024	1.6000e-004		3.2800e-003	3.2800e-003		3.0200e-003	3.0200e-003	0.0000	14.0186	14.0186	4.5300e-003	0.0000	14.1319
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9200e-003**	**0.0667**	**0.1024**	**1.6000e-004**		**3.2800e-003**	**3.2800e-003**		**3.0200e-003**	**3.0200e-003**	**0.0000**	**14.0186**	**14.0186**	**4.5300e-003**	**0.0000**	**14.1319**

3.5 Paving - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.0000e-004	1.7000e-004	1.9100e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6680	0.6680	1.0000e-005	0.0000	0.6684
Total	**3.0000e-004**	**1.7000e-004**	**1.9100e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6680**	**0.6680**	**1.0000e-005**	**0.0000**	**0.6684**

3.6 Architectural Coating - 2024

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2700e-003	8.5300e-003	0.0127	2.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7898
Total	**3.1768**	**8.5300e-003**	**0.0127**	**2.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7898**

3.6 Architectural Coating - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	2.3000e-004	2.5400e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8907	0.8907	2.0000e-005	0.0000	0.8911
Total	**4.0000e-004**	**2.3000e-004**	**2.5400e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8907**	**0.8907**	**2.0000e-005**	**0.0000**	**0.8911**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2700e-003	8.5300e-003	0.0127	2.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7898
Total	**3.1768**	**8.5300e-003**	**0.0127**	**2.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7898**

3.6 Architectural Coating - 2024

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-004	2.3000e-004	2.5400e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8907	0.8907	2.0000e-005	0.0000	0.8911
Total	**4.0000e-004**	**2.3000e-004**	**2.5400e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8907**	**0.8907**	**2.0000e-005**	**0.0000**	**0.8911**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.2620	0.9240	2.9786	0.0120	1.2055	9.1500e-003	1.2146	0.3221	8.4800e-003	0.3306	0.0000	1,105.0674	1,105.0674	0.0490	0.0000	1,106.2913
Unmitigated	0.2674	0.9563	3.1506	0.0128	1.2948	9.7400e-003	1.3046	0.3460	9.0300e-003	0.3550	0.0000	1,180.9349	1,180.9349	0.0515	0.0000	1,182.2226

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200
Apartments Mid Rise	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200
City Park	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200
Condo/Townhouse	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200
Single Family Housing	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 5 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Unmitigated	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0319	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Total	**1.1427**	**0.0122**	**1.0608**	**6.0000e-005**		**5.8900e-003**	**5.8900e-003**		**5.8900e-003**	**5.8900e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6600e-003**	**0.0000**	**1.7760**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0314	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Total	**1.1423**	**0.0121**	**1.0532**	**6.0000e-005**		**5.8400e-003**	**5.8400e-003**		**5.8400e-003**	**5.8400e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6400e-003**	**0.0000**	**1.7598**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 6

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2026
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2026 Operational Year

Woodstoves - No hearths or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	205.00
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	20.00	14.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	OBUS	1.5830e-003	0.00

tblFleetMix	OBUS	1.5830e-003	0.00
tblFleetMix	OBUS	1.5830e-003	0.00
tblFleetMix	OBUS	1.5830e-003	0.00
tblFleetMix	OBUS	1.5830e-003	0.00
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2025	3.3962	1.9365	2.3174	5.1200e-003	0.2686	0.0738	0.3424	0.1014	0.0690	0.1704	0.0000	451.5150	451.5150	0.0875	0.0000	453.7013
Maximum	**3.3962**	**1.9365**	**2.3174**	**5.1200e-003**	**0.2686**	**0.0738**	**0.3424**	**0.1014**	**0.0690**	**0.1704**	**0.0000**	**451.5150**	**451.5150**	**0.0875**	**0.0000**	**453.7013**

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	tons/yr										MT/yr					
2025	3.3962	1.9365	2.3173	5.1200e-003	0.1772	0.0738	0.2509	0.0608	0.0690	0.1298	0.0000	451.5146	451.5146	0.0875	0.0000	453.7009
Maximum	**3.3962**	**1.9365**	**2.3173**	**5.1200e-003**	**0.1772**	**0.0738**	**0.2509**	**0.0608**	**0.0690**	**0.1298**	**0.0000**	**451.5146**	**451.5146**	**0.0875**	**0.0000**	**453.7009**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.04**	**0.00**	**26.71**	**40.05**	**0.00**	**23.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2025**	**3-31-2025**	0.6990	0.6990
2	**4-1-2025**	**6-30-2025**	0.5262	0.5262
3	**7-1-2025**	**9-30-2025**	0.5320	0.5320
		Highest	0.6990	0.6990

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	tons/yr										MT/yr					
Area	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.2514	0.9036	2.9548	0.0124	1.2950	9.3600e-003	1.3044	0.3461	8.6800e-003	0.3547	0.0000	1,137.8367	1,137.8367	0.0492	0.0000	1,139.0655
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4098**	**1.0493**	**4.0724**	**0.0133**	**1.2950**	**0.0260**	**1.3210**	**0.3461**	**0.0254**	**0.3714**	**27.2214**	**1,673.2413**	**1,700.4627**	**1.8071**	**0.0132**	**1,749.5853**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.2463	0.8736	2.7929	0.0116	1.2056	8.7900e-003	1.2144	0.3222	8.1500e-003	0.3303	0.0000	1,064.6736	1,064.6736	0.0467	0.0000	1,065.8420
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.4042**	**1.0192**	**3.9029**	**0.0125**	**1.2056**	**0.0254**	**1.2311**	**0.3222**	**0.0248**	**0.3470**	**27.2214**	**1,039.7236**	**1,066.9450**	**1.7815**	**8.4500e-003**	**1,114.0020**

	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	N20	CO2e
Percent Reduction	**0.39**	**2.87**	**4.16**	**5.95**	**6.90**	**2.38**	**6.81**	**6.90**	**2.29**	**6.59**	**0.00**	**37.86**	**37.26**	**1.41**	**36.18**	**36.33**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 6 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2025	1/9/2025	5	7	
2	Grading	Grading	1/10/2025	2/7/2025	5	21	
3	Building Construction	Building Construction	2/10/2025	11/21/2025	5	205	
4	Paving	Paving	11/24/2025	12/11/2025	5	14	
5	Architectural Coating	Architectural Coating	12/12/2025	12/31/2025	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 6 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2025

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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6500e-003	0.0883	0.0627	1.3000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	11.7135	11.7135	3.7900e-003	0.0000	11.8082
Total	**8.6500e-003**	**0.0883**	**0.0627**	**1.3000e-004**	**0.0632**	**3.8000e-003**	**0.0670**	**0.0348**	**3.5000e-003**	**0.0383**	**0.0000**	**11.7135**	**11.7135**	**3.7900e-003**	**0.0000**	**11.8082**

3.2 Site Preparation - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.7000e-004	9.0000e-005	1.0600e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3850	0.3850	1.0000e-005	0.0000	0.3852
Total	**1.7000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.3850**	**0.3850**	**1.0000e-005**	**0.0000**	**0.3852**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6500e-003	0.0883	0.0627	1.3000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	11.7134	11.7134	3.7900e-003	0.0000	11.8081
Total	**8.6500e-003**	**0.0883**	**0.0627**	**1.3000e-004**	**0.0285**	**3.8000e-003**	**0.0323**	**0.0156**	**3.5000e-003**	**0.0191**	**0.0000**	**11.7134**	**11.7134**	**3.7900e-003**	**0.0000**	**11.8081**

3.2 Site Preparation - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.7000e-004	9.0000e-005	1.0600e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3850	0.3850	1.0000e-005	0.0000	0.3852
Total	**1.7000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.3850**	**0.3850**	**1.0000e-005**	**0.0000**	**0.3852**

3.3 Grading - 2025

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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2934	0.2765	6.5000e-004		0.0119	0.0119		0.0109	0.0109	0.0000	57.2315	57.2315	0.0185	0.0000	57.6943
Total	**0.0305**	**0.2934**	**0.2765**	**6.5000e-004**	**0.1030**	**0.0119**	**0.1149**	**0.0391**	**0.0109**	**0.0500**	**0.0000**	**57.2315**	**57.2315**	**0.0185**	**0.0000**	**57.6943**

3.3 Grading - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.7000e-004	3.2000e-004	3.5300e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2833	1.2833	2.0000e-005	0.0000	1.2839
Total	**5.7000e-004**	**3.2000e-004**	**3.5300e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.2833**	**1.2833**	**2.0000e-005**	**0.0000**	**1.2839**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2934	0.2765	6.5000e-004		0.0119	0.0119		0.0109	0.0109	0.0000	57.2315	57.2315	0.0185	0.0000	57.6942
Total	**0.0305**	**0.2934**	**0.2765**	**6.5000e-004**	**0.0464**	**0.0119**	**0.0582**	**0.0176**	**0.0109**	**0.0285**	**0.0000**	**57.2315**	**57.2315**	**0.0185**	**0.0000**	**57.6942**

3.3 Grading - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.7000e-004	3.2000e-004	3.5300e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2833	1.2833	2.0000e-005	0.0000	1.2839
Total	**5.7000e-004**	**3.2000e-004**	**3.5300e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.2833**	**1.2833**	**2.0000e-005**	**0.0000**	**1.2839**

3.4 Building Construction - 2025

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	tons/yr										MT/yr					
Off-Road	0.1402	1.2781	1.6487	2.7600e-003		0.0541	0.0541		0.0509	0.0509	0.0000	237.7174	237.7174	0.0559	0.0000	239.1144
Total	**0.1402**	**1.2781**	**1.6487**	**2.7600e-003**		**0.0541**	**0.0541**		**0.0509**	**0.0509**	**0.0000**	**237.7174**	**237.7174**	**0.0559**	**0.0000**	**239.1144**

3.4 Building Construction - 2025

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.0500e-003	0.1924	0.0356	6.7000e-004	0.0164	1.9000e-004	0.0166	4.7400e-003	1.8000e-004	4.9200e-003	0.0000	63.8765	63.8765	3.4800e-003	0.0000	63.9634
Worker	0.0273	0.0153	0.1705	6.8000e-004	0.0818	5.1000e-004	0.0823	0.0217	4.7000e-004	0.0222	0.0000	62.0099	62.0099	1.1100e-003	0.0000	62.0377
Total	**0.0324**	**0.2077**	**0.2061**	**1.3500e-003**	**0.0982**	**7.0000e-004**	**0.0989**	**0.0265**	**6.5000e-004**	**0.0271**	**0.0000**	**125.8864**	**125.8864**	**4.5900e-003**	**0.0000**	**126.0011**

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	tons/yr										MT/yr					
Off-Road	0.1402	1.2781	1.6487	2.7600e-003		0.0541	0.0541		0.0509	0.0509	0.0000	237.7172	237.7172	0.0559	0.0000	239.1142
Total	**0.1402**	**1.2781**	**1.6487**	**2.7600e-003**		**0.0541**	**0.0541**		**0.0509**	**0.0509**	**0.0000**	**237.7172**	**237.7172**	**0.0559**	**0.0000**	**239.1142**

3.4 Building Construction - 2025

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	5.0500e-003	0.1924	0.0356	6.7000e-004	0.0164	1.9000e-004	0.0166	4.7400e-003	1.8000e-004	4.9200e-003	0.0000	63.8765	63.8765	3.4800e-003	0.0000	63.9634
Worker	0.0273	0.0153	0.1705	6.8000e-004	0.0818	5.1000e-004	0.0823	0.0217	4.7000e-004	0.0222	0.0000	62.0099	62.0099	1.1100e-003	0.0000	62.0377
Total	**0.0324**	**0.2077**	**0.2061**	**1.3500e-003**	**0.0982**	**7.0000e-004**	**0.0989**	**0.0265**	**6.5000e-004**	**0.0271**	**0.0000**	**125.8864**	**125.8864**	**4.5900e-003**	**0.0000**	**126.0011**

3.5 Paving - 2025

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	tons/yr										MT/yr					
Off-Road	6.4100e-003	0.0601	0.1021	1.6000e-004		2.9300e-003	2.9300e-003		2.7000e-003	2.7000e-003	0.0000	14.0135	14.0135	4.5300e-003	0.0000	14.1268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4100e-003**	**0.0601**	**0.1021**	**1.6000e-004**		**2.9300e-003**	**2.9300e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**14.0135**	**14.0135**	**4.5300e-003**	**0.0000**	**14.1268**

3.5 Paving - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.8000e-004	1.6000e-004	1.7600e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6416	0.6416	1.0000e-005	0.0000	0.6419
Total	**2.8000e-004**	**1.6000e-004**	**1.7600e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6416**	**0.6416**	**1.0000e-005**	**0.0000**	**0.6419**

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	tons/yr										MT/yr					
Off-Road	6.4100e-003	0.0601	0.1021	1.6000e-004		2.9300e-003	2.9300e-003		2.7000e-003	2.7000e-003	0.0000	14.0135	14.0135	4.5300e-003	0.0000	14.1268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4100e-003**	**0.0601**	**0.1021**	**1.6000e-004**		**2.9300e-003**	**2.9300e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**14.0135**	**14.0135**	**4.5300e-003**	**0.0000**	**14.1268**

3.5 Paving - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.8000e-004	1.6000e-004	1.7600e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6416	0.6416	1.0000e-005	0.0000	0.6419
Total	**2.8000e-004**	**1.6000e-004**	**1.7600e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6416**	**0.6416**	**1.0000e-005**	**0.0000**	**0.6419**

3.6 Architectural Coating - 2025

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.0200e-003	0.0127	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7897
Total	**3.1768**	**8.0200e-003**	**0.0127**	**2.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7897**

3.6 Architectural Coating - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.8000e-004	2.1000e-004	2.3500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8555	0.8555	2.0000e-005	0.0000	0.8559
Total	**3.8000e-004**	**2.1000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8555**	**0.8555**	**2.0000e-005**	**0.0000**	**0.8559**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.0200e-003	0.0127	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7897
Total	**3.1768**	**8.0200e-003**	**0.0127**	**2.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7897**

3.6 Architectural Coating - 2025

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.8000e-004	2.1000e-004	2.3500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8555	0.8555	2.0000e-005	0.0000	0.8559
Total	**3.8000e-004**	**2.1000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8555**	**0.8555**	**2.0000e-005**	**0.0000**	**0.8559**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.2463	0.8736	2.7929	0.0116	1.2056	8.7900e-003	1.2144	0.3222	8.1500e-003	0.3303	0.0000	1,064.6736	1,064.6736	0.0467	0.0000	1,065.8420
Unmitigated	0.2514	0.9036	2.9548	0.0124	1.2950	9.3600e-003	1.3044	0.3461	8.6800e-003	0.3547	0.0000	1,137.8367	1,137.8367	0.0492	0.0000	1,139.0655

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300
Apartments Mid Rise	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300
City Park	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300
Condo/Townhouse	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300
Single Family Housing	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 6 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Unmitigated	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0319	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Total	**1.1427**	**0.0122**	**1.0608**	**6.0000e-005**		**5.8900e-003**	**5.8900e-003**		**5.8900e-003**	**5.8900e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6600e-003**	**0.0000**	**1.7760**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0314	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Total	**1.1423**	**0.0121**	**1.0532**	**6.0000e-005**		**5.8400e-003**	**5.8400e-003**		**5.8400e-003**	**5.8400e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6400e-003**	**0.0000**	**1.7598**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

Sage Ranch AQIA - Phase 7

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.26	Acre	1.26	54,885.60	0
Apartments Low Rise	22.00	Dwelling Unit	1.00	22,000.00	63
Apartments Mid Rise	12.00	Dwelling Unit	0.60	12,000.00	34
Condo/Townhouse	34.00	Dwelling Unit	3.10	34,000.00	97
Single Family Housing	75.00	Dwelling Unit	9.80	135,000.00	215

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2027
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on 143 units per year

Construction Phase - Based on one year construction time

Vehicle Trips - Per Traffic Study Table 4.1

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - SJVAPCD Residential Fleet Mix - 2027 Operational Year

Woodstoves - No hearths or fireplaces will be installed

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	205.00
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	20.00	14.00
tblFireplaces	NumberGas	12.10	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberGas	18.70	0.00
tblFireplaces	NumberGas	41.25	0.00
tblFireplaces	NumberNoFireplace	2.20	22.00
tblFireplaces	NumberNoFireplace	1.20	12.00
tblFireplaces	NumberNoFireplace	3.40	34.00
tblFireplaces	NumberNoFireplace	7.50	75.00
tblFireplaces	NumberWood	7.70	0.00

tblFireplaces	NumberWood	4.20	0.00
tblFireplaces	NumberWood	11.90	0.00
tblFireplaces	NumberWood	26.25	0.00
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	HHD	0.14	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD1	0.01	8.0000e-004
tblFleetMix	LHD2	4.5430e-003	1.0000e-003
tblFleetMix	LHD2	4.5430e-003	1.0000e-003
tblFleetMix	LHD2	4.5430e-003	1.0000e-003
tblFleetMix	LHD2	4.5430e-003	1.0000e-003
tblFleetMix	LHD2	4.5430e-003	1.0000e-003
tblFleetMix	MCY	5.5650e-003	2.5000e-003
tblFleetMix	MCY	5.5650e-003	2.5000e-003
tblFleetMix	MCY	5.5650e-003	2.5000e-003
tblFleetMix	MCY	5.5650e-003	2.5000e-003
tblFleetMix	MCY	5.5650e-003	2.5000e-003
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MH	6.0400e-004	2.5000e-003
tblFleetMix	MH	6.0400e-004	2.5000e-003
tblFleetMix	MH	6.0400e-004	2.5000e-003
tblFleetMix	MH	6.0400e-004	2.5000e-003
tblFleetMix	MH	6.0400e-004	2.5000e-003
tblFleetMix	MHD	0.02	7.4000e-003
tblFleetMix	MHD	0.02	7.4000e-003
tblFleetMix	MHD	0.02	7.4000e-003
tblFleetMix	MHD	0.02	7.4000e-003
tblFleetMix	MHD	0.02	7.4000e-003
tblFleetMix	OBUS	1.5760e-003	0.00

tblFleetMix	OBUS	1.5760e-003	0.00
tblFleetMix	OBUS	1.5760e-003	0.00
tblFleetMix	OBUS	1.5760e-003	0.00
tblFleetMix	OBUS	1.5760e-003	0.00
tblFleetMix	SBUS	8.5700e-004	5.0000e-004
tblFleetMix	SBUS	8.5700e-004	5.0000e-004
tblFleetMix	SBUS	8.5700e-004	5.0000e-004
tblFleetMix	SBUS	8.5700e-004	5.0000e-004
tblFleetMix	SBUS	8.5700e-004	5.0000e-004
tblFleetMix	UBUS	1.4680e-003	4.4000e-003
tblFleetMix	UBUS	1.4680e-003	4.4000e-003
tblFleetMix	UBUS	1.4680e-003	4.4000e-003
tblFleetMix	UBUS	1.4680e-003	4.4000e-003
tblFleetMix	UBUS	1.4680e-003	4.4000e-003
tblGrading	AcresOfGrading	52.50	75.00
tblLandUse	LotAcreage	1.38	1.00
tblLandUse	LotAcreage	0.32	0.60
tblLandUse	LotAcreage	2.13	3.10
tblLandUse	LotAcreage	24.35	9.80
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	6.65	7.32
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	1.10	0.00
tblWoodstoves	NumberCatalytic	0.60	0.00
tblWoodstoves	NumberCatalytic	1.70	0.00
tblWoodstoves	NumberCatalytic	3.75	0.00

tblWoodstoves	NumberNoncatalytic	1.10	0.00
tblWoodstoves	NumberNoncatalytic	0.60	0.00
tblWoodstoves	NumberNoncatalytic	1.70	0.00
tblWoodstoves	NumberNoncatalytic	3.75	0.00

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2026	3.3946	1.9333	2.3034	5.0900e-003	0.2686	0.0738	0.3424	0.1014	0.0690	0.1704	0.0000	448.5426	448.5426	0.0874	0.0000	450.7279
Maximum	**3.3946**	**1.9333**	**2.3034**	**5.0900e-003**	**0.2686**	**0.0738**	**0.3424**	**0.1014**	**0.0690**	**0.1704**	**0.0000**	**448.5426**	**448.5426**	**0.0874**	**0.0000**	**450.7279**

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	tons/yr										MT/yr					
2026	3.3946	1.9333	2.3034	5.0900e-003	0.1772	0.0738	0.2509	0.0608	0.0690	0.1298	0.0000	448.5422	448.5422	0.0874	0.0000	450.7275
Maximum	**3.3946**	**1.9333**	**2.3034**	**5.0900e-003**	**0.1772**	**0.0738**	**0.2509**	**0.0608**	**0.0690**	**0.1298**	**0.0000**	**448.5422**	**448.5422**	**0.0874**	**0.0000**	**450.7275**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.04**	**0.00**	**26.71**	**40.05**	**0.00**	**23.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2026**	**3-31-2026**	0.6981	0.6981
2	**4-1-2026**	**6-30-2026**	0.5247	0.5247
3	**7-1-2026**	**9-30-2026**	0.5305	0.5305
		Highest	0.6981	0.6981

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	tons/yr										MT/yr					
Area	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	468.9091	468.9091	0.0159	5.5200e-003	470.9523
Mobile	0.2368	0.8603	2.7779	0.0120	1.2956	8.9000e-003	1.3045	0.3463	8.2500e-003	0.3546	0.0000	1,103.4872	1,103.4872	0.0467	0.0000	1,104.6547
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.3952**	**1.0060**	**3.8955**	**0.0129**	**1.2956**	**0.0256**	**1.3212**	**0.3463**	**0.0249**	**0.3713**	**27.2214**	**1,638.8918**	**1,666.1132**	**1.8046**	**0.0132**	**1,715.1745**

2.2 Overall Operational

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	tons/yr										MT/yr					
Area	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Energy	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	-91.4298	-91.4298	-0.0072	7.3000e-004	-91.3912
Mobile	0.2320	0.8321	2.6253	0.0112	1.2062	8.3600e-003	1.2146	0.3225	7.7500e-003	0.3302	0.0000	1,032.4710	1,032.4710	0.0444	0.0000	1,033.5817
Waste						0.0000	0.0000		0.0000	0.0000	24.2655	0.0000	24.2655	1.4341	0.0000	60.1169
Water						0.0000	0.0000		0.0000	0.0000	2.9559	64.7610	67.7169	0.3063	7.7200e-003	77.6747
Total	**1.3899**	**0.9778**	**3.7352**	**0.0121**	**1.2062**	**0.0250**	**1.2312**	**0.3225**	**0.0244**	**0.3468**	**27.2214**	**1,007.5210**	**1,034.7424**	**1.7792**	**8.4500e-003**	**1,081.7418**

	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	N20	CO2e
Percent Reduction	**0.38**	**2.81**	**4.11**	**6.05**	**6.90**	**2.31**	**6.81**	**6.90**	**2.21**	**6.59**	**0.00**	**38.52**	**37.89**	**1.41**	**36.18**	**36.93**

3.0 Construction Detail

Construction Phase

Sage Ranch AQIA - Phase 7 - Kern-Mojave Desert County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2026	1/9/2026	5	7	
2	Grading	Grading	1/12/2026	2/9/2026	5	21	
3	Building Construction	Building Construction	2/10/2026	11/23/2026	5	205	
4	Paving	Paving	11/24/2026	12/11/2026	5	14	
5	Architectural Coating	Architectural Coating	12/14/2026	12/31/2026	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 411,075; Residential Outdoor: 137,025; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sage Ranch AQIA - Phase 7 - Kern-Mojave Desert County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	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	6.00	78	0.48

Trips and VMT

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	99.00	24.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2026

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	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6500e-003	0.0883	0.0627	1.3000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	11.7135	11.7135	3.7900e-003	0.0000	11.8082
Total	**8.6500e-003**	**0.0883**	**0.0627**	**1.3000e-004**	**0.0632**	**3.8000e-003**	**0.0670**	**0.0348**	**3.5000e-003**	**0.0383**	**0.0000**	**11.7135**	**11.7135**	**3.7900e-003**	**0.0000**	**11.8082**

3.2 Site Preparation - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.6000e-004	9.0000e-005	9.8000e-004	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3698	0.3698	1.0000e-005	0.0000	0.3700
Total	**1.6000e-004**	**9.0000e-005**	**9.8000e-004**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.3698**	**0.3698**	**1.0000e-005**	**0.0000**	**0.3700**

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	tons/yr										MT/yr					
Fugitive Dust					0.0285	0.0000	0.0285	0.0156	0.0000	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6500e-003	0.0883	0.0627	1.3000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	11.7134	11.7134	3.7900e-003	0.0000	11.8081
Total	**8.6500e-003**	**0.0883**	**0.0627**	**1.3000e-004**	**0.0285**	**3.8000e-003**	**0.0323**	**0.0156**	**3.5000e-003**	**0.0191**	**0.0000**	**11.7134**	**11.7134**	**3.7900e-003**	**0.0000**	**11.8081**

3.2 Site Preparation - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.6000e-004	9.0000e-005	9.8000e-004	0.0000	5.1000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3698	0.3698	1.0000e-005	0.0000	0.3700
Total	**1.6000e-004**	**9.0000e-005**	**9.8000e-004**	**0.0000**	**5.1000e-004**	**0.0000**	**5.1000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.3698**	**0.3698**	**1.0000e-005**	**0.0000**	**0.3700**

3.3 Grading - 2026

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	tons/yr										MT/yr					
Fugitive Dust					0.1030	0.0000	0.1030	0.0391	0.0000	0.0391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2934	0.2765	6.5000e-004		0.0119	0.0119		0.0109	0.0109	0.0000	57.2315	57.2315	0.0185	0.0000	57.6943
Total	**0.0305**	**0.2934**	**0.2765**	**6.5000e-004**	**0.1030**	**0.0119**	**0.1149**	**0.0391**	**0.0109**	**0.0500**	**0.0000**	**57.2315**	**57.2315**	**0.0185**	**0.0000**	**57.6943**

3.3 Grading - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.4000e-004	2.9000e-004	3.2800e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2328	1.2328	2.0000e-005	0.0000	1.2333
Total	**5.4000e-004**	**2.9000e-004**	**3.2800e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.2328**	**1.2328**	**2.0000e-005**	**0.0000**	**1.2333**

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	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	0.0176	0.0000	0.0176	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2934	0.2765	6.5000e-004		0.0119	0.0119		0.0109	0.0109	0.0000	57.2315	57.2315	0.0185	0.0000	57.6942
Total	**0.0305**	**0.2934**	**0.2765**	**6.5000e-004**	**0.0464**	**0.0119**	**0.0582**	**0.0176**	**0.0109**	**0.0285**	**0.0000**	**57.2315**	**57.2315**	**0.0185**	**0.0000**	**57.6942**

3.3 Grading - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	5.4000e-004	2.9000e-004	3.2800e-003	1.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2328	1.2328	2.0000e-005	0.0000	1.2333
Total	**5.4000e-004**	**2.9000e-004**	**3.2800e-003**	**1.0000e-005**	**1.6900e-003**	**1.0000e-005**	**1.7000e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.2328**	**1.2328**	**2.0000e-005**	**0.0000**	**1.2333**

3.4 Building Construction - 2026

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	tons/yr										MT/yr					
Off-Road	0.1402	1.2781	1.6487	2.7600e-003		0.0541	0.0541		0.0509	0.0509	0.0000	237.7174	237.7174	0.0559	0.0000	239.1144
Total	**0.1402**	**1.2781**	**1.6487**	**2.7600e-003**		**0.0541**	**0.0541**		**0.0509**	**0.0509**	**0.0000**	**237.7174**	**237.7174**	**0.0559**	**0.0000**	**239.1144**

3.4 Building Construction - 2026

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	4.9400e-003	0.1907	0.0343	6.7000e-004	0.0164	1.9000e-004	0.0166	4.7400e-003	1.8000e-004	4.9200e-003	0.0000	63.4705	63.4705	3.5500e-003	0.0000	63.5592
Worker	0.0259	0.0139	0.1585	6.6000e-004	0.0818	4.9000e-004	0.0823	0.0217	4.5000e-004	0.0222	0.0000	59.5681	59.5681	1.0000e-003	0.0000	59.5932
Total	**0.0308**	**0.2046**	**0.1928**	**1.3300e-003**	**0.0982**	**6.8000e-004**	**0.0989**	**0.0265**	**6.3000e-004**	**0.0271**	**0.0000**	**123.0387**	**123.0387**	**4.5500e-003**	**0.0000**	**123.1525**

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	tons/yr										MT/yr					
Off-Road	0.1402	1.2781	1.6487	2.7600e-003		0.0541	0.0541		0.0509	0.0509	0.0000	237.7172	237.7172	0.0559	0.0000	239.1142
Total	**0.1402**	**1.2781**	**1.6487**	**2.7600e-003**		**0.0541**	**0.0541**		**0.0509**	**0.0509**	**0.0000**	**237.7172**	**237.7172**	**0.0559**	**0.0000**	**239.1142**

3.4 Building Construction - 2026

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	4.9400e-003	0.1907	0.0343	6.7000e-004	0.0164	1.9000e-004	0.0166	4.7400e-003	1.8000e-004	4.9200e-003	0.0000	63.4705	63.4705	3.5500e-003	0.0000	63.5592
Worker	0.0259	0.0139	0.1585	6.6000e-004	0.0818	4.9000e-004	0.0823	0.0217	4.5000e-004	0.0222	0.0000	59.5681	59.5681	1.0000e-003	0.0000	59.5932
Total	**0.0308**	**0.2046**	**0.1928**	**1.3300e-003**	**0.0982**	**6.8000e-004**	**0.0989**	**0.0265**	**6.3000e-004**	**0.0271**	**0.0000**	**123.0387**	**123.0387**	**4.5500e-003**	**0.0000**	**123.1525**

3.5 Paving - 2026

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	tons/yr										MT/yr					
Off-Road	6.4100e-003	0.0601	0.1021	1.6000e-004		2.9300e-003	2.9300e-003		2.7000e-003	2.7000e-003	0.0000	14.0135	14.0135	4.5300e-003	0.0000	14.1268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4100e-003**	**0.0601**	**0.1021**	**1.6000e-004**		**2.9300e-003**	**2.9300e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**14.0135**	**14.0135**	**4.5300e-003**	**0.0000**	**14.1268**

3.5 Paving - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.7000e-004	1.4000e-004	1.6400e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6164	0.6164	1.0000e-005	0.0000	0.6166
Total	**2.7000e-004**	**1.4000e-004**	**1.6400e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6164**	**0.6164**	**1.0000e-005**	**0.0000**	**0.6166**

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	tons/yr										MT/yr					
Off-Road	6.4100e-003	0.0601	0.1021	1.6000e-004		2.9300e-003	2.9300e-003		2.7000e-003	2.7000e-003	0.0000	14.0135	14.0135	4.5300e-003	0.0000	14.1268
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4100e-003**	**0.0601**	**0.1021**	**1.6000e-004**		**2.9300e-003**	**2.9300e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**14.0135**	**14.0135**	**4.5300e-003**	**0.0000**	**14.1268**

3.5 Paving - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.7000e-004	1.4000e-004	1.6400e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6164	0.6164	1.0000e-005	0.0000	0.6166
Total	**2.7000e-004**	**1.4000e-004**	**1.6400e-003**	**1.0000e-005**	**8.5000e-004**	**1.0000e-005**	**8.5000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.6164**	**0.6164**	**1.0000e-005**	**0.0000**	**0.6166**

3.6 Architectural Coating - 2026

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.0200e-003	0.0127	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7897
Total	**3.1768**	**8.0200e-003**	**0.0127**	**2.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7897**

3.6 Architectural Coating - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.6000e-004	1.9000e-004	2.1900e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8218	0.8218	1.0000e-005	0.0000	0.8222
Total	**3.6000e-004**	**1.9000e-004**	**2.1900e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8218**	**0.8218**	**1.0000e-005**	**0.0000**	**0.8222**

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	tons/yr										MT/yr					
Archit. Coating	3.1756					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	8.0200e-003	0.0127	2.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	1.7873	1.7873	1.0000e-004	0.0000	1.7897
Total	**3.1768**	**8.0200e-003**	**0.0127**	**2.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**	**0.0000**	**1.7873**	**1.7873**	**1.0000e-004**	**0.0000**	**1.7897**

3.6 Architectural Coating - 2026

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	3.6000e-004	1.9000e-004	2.1900e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8218	0.8218	1.0000e-005	0.0000	0.8222
Total	**3.6000e-004**	**1.9000e-004**	**2.1900e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8218**	**0.8218**	**1.0000e-005**	**0.0000**	**0.8222**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	tons/yr										MT/yr					
Mitigated	0.2320	0.8321	2.6253	0.0112	1.2062	8.3600e-003	1.2146	0.3225	7.7500e-003	0.3302	0.0000	1,032.4710	1,032.4710	0.0444	0.0000	1,033.5817
Unmitigated	0.2368	0.8603	2.7779	0.0120	1.2956	8.9000e-003	1.3045	0.3463	8.2500e-003	0.3546	0.0000	1,103.4872	1,103.4872	0.0467	0.0000	1,104.6547

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	161.04	157.52	133.54	455,422	423,998
Apartments Mid Rise	87.84	76.68	70.32	243,526	226,723
City Park	2.38	28.67	21.09	18,806	17,509
Condo/Townhouse	248.88	192.78	164.56	665,414	619,501
Single Family Housing	708.00	743.25	646.50	2,047,977	1,906,666
Total	1,208.14	1,198.90	1,036.01	3,431,145	3,194,396

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.518500	0.217000	0.168400	0.057500	0.000800	0.001000	0.007400	0.019500	0.000000	0.004400	0.002500	0.000500	0.002500
Apartments Mid Rise	0.518500	0.217000	0.168400	0.057500	0.000800	0.001000	0.007400	0.019500	0.000000	0.004400	0.002500	0.000500	0.002500
City Park	0.518500	0.217000	0.168400	0.057500	0.000800	0.001000	0.007400	0.019500	0.000000	0.004400	0.002500	0.000500	0.002500
Condo/Townhouse	0.518500	0.217000	0.168400	0.057500	0.000800	0.001000	0.007400	0.019500	0.000000	0.004400	0.002500	0.000500	0.002500
Single Family Housing	0.518500	0.217000	0.168400	0.057500	0.000800	0.001000	0.007400	0.019500	0.000000	0.004400	0.002500	0.000500	0.002500

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

Sage Ranch AQIA - Phase 7 - Kern-Mojave Desert County, Annual

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-246.0395	-246.0395	-0.0102	-0.0021	-246.9197
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	314.2994	314.2994	0.0130	2.6800e-003	315.4238
NaturalGas Mitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285
NaturalGas Unmitigated	0.0156	0.1335	0.0568	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.6097	154.6097	2.9600e-003	2.8300e-003	155.5285

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.2 Energy by Land Use - NaturalGas

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	tons/yr										MT/yr					
Apartments Low Rise	366964	1.9800e-003	0.0169	7.2000e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.5826	19.5826	3.8000e-004	3.6000e-004	19.6990
Apartments Mid Rise	187428	1.0100e-003	8.6400e-003	3.6800e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0019	10.0019	1.9000e-004	1.8000e-004	10.0613
City Park	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	0.0000
Condo/Townhouse	412857	2.2300e-003	0.0190	8.1000e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.0316	22.0316	4.2000e-004	4.0000e-004	22.1625
Single Family Housing	1.93003e+006	0.0104	0.0889	0.0378	5.7000e-004		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	102.9936	102.9936	1.9700e-003	1.8900e-003	103.6057
Total		**0.0156**	**0.1335**	**0.0568**	**8.6000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.6097**	**154.6097**	**2.9600e-003**	**2.8300e-003**	**155.5285**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	101994	32.4975	1.3400e-003	2.8000e-004	32.6137
Apartments Mid Rise	55356.2	17.6377	7.3000e-004	1.5000e-004	17.7008
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	184531	58.7954	2.4300e-003	5.0000e-004	59.0057
Single Family Housing	644555	205.3689	8.4800e-003	1.7500e-003	206.1036
Total		**314.2994**	**0.0130**	**2.6800e-003**	**315.4238**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Apartments Mid Rise	-154440	-49.2079	-0.0020	-0.0004	-49.3839
City Park	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Condo/Townhouse	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Single Family Housing	-154440	-49.2079	-0.0020	-0.0004	-49.3839
Total		**-246.0395**	**-0.0102**	**-0.0021**	**-246.9197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	1.1423	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Unmitigated	1.1427	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0319	0.0122	1.0608	6.0000e-005		5.8900e-003	5.8900e-003		5.8900e-003	5.8900e-003	0.0000	1.7344	1.7344	1.6600e-003	0.0000	1.7760
Total	**1.1427**	**0.0122**	**1.0608**	**6.0000e-005**		**5.8900e-003**	**5.8900e-003**		**5.8900e-003**	**5.8900e-003**	**0.0000**	**1.7344**	**1.7344**	**1.6600e-003**	**0.0000**	**1.7760**

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	tons/yr										MT/yr					
Architectural Coating	0.3176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	0.0314	0.0121	1.0532	6.0000e-005		5.8400e-003	5.8400e-003		5.8400e-003	5.8400e-003	0.0000	1.7188	1.7188	1.6400e-003	0.0000	1.7598
Total	**1.1423**	**0.0121**	**1.0532**	**6.0000e-005**		**5.8400e-003**	**5.8400e-003**		**5.8400e-003**	**5.8400e-003**	**0.0000**	**1.7188**	**1.7188**	**1.6400e-003**	**0.0000**	**1.7598**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7169	0.3063	7.7200e-003	77.6747
Unmitigated	67.7169	0.3063	7.7200e-003	77.6747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.43339 / 0.903658	9.6004	0.0471	1.1800e-003	11.1294
Apartments Mid Rise	0.781848 / 0.492904	5.2366	0.0257	6.4000e-004	6.0706
City Park	0 / 1.50127	5.3143	2.2000e-004	5.0000e-005	5.3333
Condo/Townhouse	2.21524 / 1.39656	14.8370	0.0728	1.8300e-003	17.2000
Single Family Housing	4.88655 / 3.08065	32.7286	0.1605	4.0300e-003	37.9413
Total		**67.7169**	**0.3063**	**7.7300e-003**	**77.6747**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.2655	1.4341	0.0000	60.1169
Unmitigated	24.2655	1.4341	0.0000	60.1169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.12	2.0543	0.1214	0.0000	5.0894
Apartments Mid Rise	5.52	1.1205	0.0662	0.0000	2.7760
City Park	0.11	0.0223	1.3200e-003	0.0000	0.0553
Condo/Townhouse	15.64	3.1748	0.1876	0.0000	7.8654
Single Family Housing	88.15	17.8937	1.0575	0.0000	44.3308
Total		**24.2655**	**1.4340**	**0.0000**	**60.1169**

9.0 Operational Offroad

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

10.0 Stationary Equipment

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

APPENDIX C: CARB 2015 AND 2020 ESTIMATED EMISSION INVENTORIES

2016 SIP Emission Projection Data

2015 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.7	2.4	0.2	0.4	0.4	0.3	0.0
WASTE DISPOSAL	7.6	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	0.9	0.8	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.2	0.2	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	9.3	16.7	7.4	3.3	2.7	1.6	0.1
*** TOTAL STATIONARY SOURCES**	**9.3**	**1.2**	**10.0**	**19.1**	**7.6**	**3.7**	**3.0**	**1.9**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.4	1.3	-	-	-	-	-	-	1.4
MISCELLANEOUS PROCESSES	3.4	1.2	11.0	0.6	0.0	18.3	9.5	2.5	0.7
*** TOTAL AREAWIDE SOURCES**	**4.9**	**2.4**	**11.0**	**0.6**	**0.0**	**18.3**	**9.5**	**2.5**	**2.1**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.9	1.7	12.4	6.3	0.0	0.3	0.3	0.2	0.2
OTHER MOBILE SOURCES	5.2	5.1	23.7	6.4	0.3	3.0	3.0	2.9	0.0
*** TOTAL MOBILE SOURCES**	**7.1**	**6.8**	**36.1**	**12.7**	**0.3**	**3.4**	**3.3**	**3.1**	**0.2**
TOTAL KERN COUNTY IN MOJAVE DESERT	**21.2**	**10.4**	**57.0**	**32.3**	**8.0**	**25.4**	**15.8**	**7.6**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	13.0	1.9	10.3	8.3	0.7	2.8	2.7	2.7	1.5
WASTE DISPOSAL	207.8	11.4	0.1	0.0	0.0	0.1	0.0	0.0	4.9
CLEANING AND SURFACE COATINGS	2.8	2.5	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	47.2	12.9	1.0	0.4	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.2	2.0	0.1	0.1	0.1	3.3	1.4	0.5	0.1
*** TOTAL STATIONARY SOURCES**	**273.0**	**30.8**	**11.5**	**8.8**	**1.2**	**6.4**	**4.3**	**3.4**	**6.7**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.5	9.6	-	-	-	-	-	-	28.0
MISCELLANEOUS PROCESSES	63.6	9.9	5.2	1.3	0.0	61.6	30.7	5.6	17.0
*** TOTAL AREAWIDE SOURCES**	**74.0**	**19.5**	**5.2**	**1.3**	**0.0**	**61.6**	**30.7**	**5.6**	**45.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	7.9	7.1	48.6	33.2	0.1	1.8	1.7	0.9	0.9
OTHER MOBILE SOURCES	4.8	4.2	27.4	13.9	0.0	0.7	0.7	0.7	0.0
*** TOTAL MOBILE SOURCES**	**12.7**	**11.3**	**76.0**	**47.1**	**0.2**	**2.5**	**2.5**	**1.6**	**0.9**
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	**359.7**	**61.6**	**92.8**	**57.1**	**1.4**	**70.5**	**37.5**	**10.5**	**52.5**
GRAND TOTAL FOR KERN COUNTY	**380.9**	**72.1**	**149.8**	**89.5**	**9.4**	**96.0**	**53.4**	**18.1**	**54.8**

Start a new query.

2016 SIP Emission Projection Data

2015 Estimated Annual Average Emissions

MOJAVE DESERT AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	7.2	1.3	9.9	24.6	1.3	10.5	4.9	2.5	0.2
WASTE DISPOSAL	34.2	0.4	0.1	0.1	0.0	69.9	20.3	2.1	1.7
CLEANING AND SURFACE COATINGS	11.2	7.7	0.0	0.0	-	0.6	0.6	0.6	-
PETROLEUM PRODUCTION AND MARKETING	17.9	6.3	0.0	0.0	-	-	-	-	-
INDUSTRIAL PROCESSES	2.0	1.7	15.9	40.7	9.5	64.2	32.9	12.8	0.1
*** TOTAL STATIONARY SOURCES**	**72.4**	**17.4**	**25.9**	**65.5**	**10.8**	**145.3**	**58.7**	**18.0**	**2.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.2	8.8	-	-	-	-	-	-	2.5
MISCELLANEOUS PROCESSES	38.5	5.7	24.5	2.0	0.1	129.2	69.6	13.5	13.3
*** TOTAL AREAWIDE SOURCES**	**48.7**	**14.5**	**24.5**	**2.0**	**0.1**	**129.2**	**69.6**	**13.5**	**15.7**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	16.1	14.5	117.1	47.1	0.2	3.0	2.9	1.4	1.6
OTHER MOBILE SOURCES	15.3	14.0	67.3	39.9	0.5	4.5	4.4	4.2	0.0
*** TOTAL MOBILE SOURCES**	**31.4**	**28.5**	**184.4**	**87.0**	**0.8**	**7.5**	**7.3**	**5.6**	**1.6**
GRAND TOTAL FOR MOJAVE DESERT AIR BASIN	**152.5**	**60.4**	**234.9**	**154.4**	**11.7**	**281.9**	**135.7**	**37.2**	**19.4**

Start a new query.

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.8	2.4	0.2	0.4	0.4	0.4	0.0
WASTE DISPOSAL	8.4	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	0.9	0.8	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.1	0.1	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	10.2	18.4	8.1	3.7	2.9	1.7	0.1
*** TOTAL STATIONARY SOURCES**	**10.2**	**1.3**	**11.0**	**20.8**	**8.3**	**4.1**	**3.3**	**2.1**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.6	1.4	-	-	-	-	-	-	1.3
MISCELLANEOUS PROCESSES	3.5	1.2	11.0	0.6	0.0	18.6	9.7	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**5.0**	**2.6**	**11.0**	**0.6**	**0.0**	**18.6**	**9.7**	**2.6**	**2.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.1	1.1	7.2	4.1	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	5.0	4.9	23.8	5.5	0.3	3.0	2.9	2.9	0.0
*** TOTAL MOBILE SOURCES**	**6.2**	**5.9**	**31.0**	**9.6**	**0.3**	**3.3**	**3.2**	**3.0**	**0.1**
TOTAL KERN COUNTY IN MOJAVE DESERT	**21.4**	**9.8**	**53.0**	**31.0**	**8.6**	**26.0**	**16.2**	**7.7**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	12.6	1.8	9.9	7.6	0.7	2.7	2.6	2.5	1.6
WASTE DISPOSAL	224.6	12.2	0.2	0.1	0.0	0.1	0.0	0.0	5.4
CLEANING AND SURFACE COATINGS	3.0	2.7	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	46.2	11.8	0.9	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.4	2.3	0.1	0.1	0.1	3.7	1.6	0.6	0.2
*** TOTAL STATIONARY SOURCES**	**288.8**	**30.7**	**11.1**	**8.0**	**1.1**	**6.7**	**4.4**	**3.3**	**7.2**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.9	10.0	-	-	-	-	-	-	26.5
MISCELLANEOUS PROCESSES	63.6	9.9	5.2	1.2	0.0	61.8	30.9	5.7	17.1
*** TOTAL AREAWIDE SOURCES**	**74.5**	**19.9**	**5.2**	**1.2**	**0.0**	**61.8**	**30.9**	**5.7**	**43.6**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	5.4	4.9	31.4	23.5	0.1	1.7	1.6	0.7	0.8
OTHER MOBILE SOURCES	4.0	3.5	27.2	10.8	0.0	0.6	0.5	0.5	0.0
*** TOTAL MOBILE SOURCES**	**9.4**	**8.4**	**58.6**	**34.2**	**0.2**	**2.2**	**2.2**	**1.2**	**0.8**
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	**372.7**	**59.0**	**74.9**	**43.5**	**1.4**	**70.7**	**37.4**	**10.2**	**51.7**
GRAND TOTAL FOR KERN COUNTY	**394.0**	**68.8**	**127.9**	**74.4**	**10.0**	**96.7**	**53.6**	**17.9**	**54.0**

Start a new query.

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

MOJAVE DESERT AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	9.7	1.4	12.0	27.8	1.3	9.9	4.7	2.6	0.2
WASTE DISPOSAL	36.3	0.5	0.1	0.1	0.0	61.6	17.9	1.8	1.8
CLEANING AND SURFACE COATINGS	14.2	9.8	0.0	0.0	-	0.8	0.8	0.8	-
PETROLEUM PRODUCTION AND MARKETING	17.7	6.2	0.0	0.0	-	0.0	0.0	0.0	-
INDUSTRIAL PROCESSES	2.3	2.0	18.3	47.7	10.7	71.5	36.8	14.8	0.1
*** TOTAL STATIONARY SOURCES**	**80.2**	**19.9**	**30.5**	**75.6**	**12.0**	**143.9**	**60.3**	**19.9**	**2.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	11.1	9.6	-	-	-	-	-	-	2.3
MISCELLANEOUS PROCESSES	38.8	5.8	24.7	2.0	0.1	142.5	76.3	14.6	13.4
*** TOTAL AREAWIDE SOURCES**	**49.8**	**15.4**	**24.7**	**2.0**	**0.1**	**142.5**	**76.3**	**14.6**	**15.7**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	10.6	9.6	70.7	31.3	0.2	3.0	2.9	1.3	1.4
OTHER MOBILE SOURCES	13.3	12.3	68.9	31.5	0.5	4.1	4.0	3.8	0.0
*** TOTAL MOBILE SOURCES**	**23.9**	**21.8**	**139.6**	**62.8**	**0.8**	**7.1**	**6.9**	**5.1**	**1.4**
GRAND TOTAL FOR MOJAVE DESERT AIR BASIN	**153.9**	**57.1**	**194.8**	**140.4**	**12.9**	**293.5**	**143.5**	**39.7**	**19.3**

APPENDIX D: AMBIENT AIR QUALITY ASSESSMENT (ELECTRONIC FILES)