



SMALL PROJECT ANALYSIS LEVEL ASSESSMENT

The Nicholson Group

**Multi-Family Residential
Project APN 497-010-94
Bakersfield, CA**

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1. EXECUTIVE SUMMARY

1.1. EXECUTIVE SUMMARY

Insight Environmental Consultants, Inc., a *Trinity Consultants Company*, has completed a limited air quality assessment for a multi-family residential project to be located on APN 497-010-94 (Project) near the intersection of Panama Lane and Old River Road in Bakersfield, California. The 16.89 acre Project includes the construction of multi-family dwellings with a maximum of 126 duplex dwelling units.

This limited air quality assessment uses the San Joaquin Valley Air Pollution Control District's (SJVAPCD) screening tool, Small Project Analysis Level (SPAL) (SJVAPCD 2017). This SPAL assessment was prepared pursuant to the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2015), 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).

1.2. STATEMENT OF FINDING

Based on the criteria established by the SJVAPCD's GAMAQI, the emissions estimates prepared pursuant to this SPAL assessment do not exceed the SJVAPCD's established emissions and significance thresholds for all CEQA air quality determinations; this Project would therefore *not pose a significant impact* to the San Joaquin Valley Air Basin and would have a *less than significant air quality impact*.

2. PROJECT INFORMATION

2.1. INTRODUCTION

The Project site is located in the City of Bakersfield north of the intersection Panama Lane and Old River Road on APN 497-010-94 and includes the construction of multi-family dwellings with a maximum of 126 duplex dwelling units. The Project was assessed as if it would be developed in one phase. This assessment examines the projected gross impacts to air quality posed by this Project to the San Joaquin Valley Air Basin to determine whether or not the Project remains below established air quality thresholds of significance.

2.2. GENERAL PROJECT DESCRIPTION

The Project is located in the City of Bakersfield, California northeast of the intersection Panama Lane and Old River Road. **Figure 2-1** depicts the Project location within the City of Bakersfield.

Figure 2-1. Location in Bakersfield, CA



3. SMALL PROJECT ANALYSIS LEVEL QUALIFICATION

This assessment was prepared pursuant to the SJVAPCD’s GAMAQI (SJVAPCD 2015), the CEQA (Public Resources Code 21000 to 21177) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 15387). The SJVAPCD created the screening tool, SPAL, to streamline air quality assessments of commonly encountered projects. According to GAMAQI, the SJVAPCD “pre-calculated the emissions on a large number and types of projects to identify the level at which they have no possibility of exceeding emissions thresholds”¹.

The SJVAPCD SPAL process established review parameters to determine whether a project qualifies as a “small project.” A project that is found to be “less than” the established parameters, according to the SPAL review parameters, has “no possibility of exceeding criteria pollutant emissions thresholds.” **Table 3-1** presents the SPAL size parameters for residential projects.

Table 3-1. Small Project Analysis Level in Units for Residential

Land Use Category - Retail	Project Size (Units)*
Single Family	390
Apartments, Low Rise	590
Apartments, High Rise	600
Condominiums, General	590
Condominiums, High Rise	590
Mobile Homes	760
Retirement Community	880
Proposed Project - Condominiums	126
SPAL Exceeded?	No
Notes:	
* Project size based on SPAL Table 5-3(a), as posted on SJVAPCD webpage: http://www.valleyair.org/transportation/CEQA Rules/GAMAQI-SPAL.pdf	

As shown in **Table 3-1**, the proposed Project would not exceed the established SPAL limits for a “Condominiums, General” multi-family residential project. The Project would construct duplexes with a maximum of 126 units compared to the allowable project size for a Condominiums General project which is 590 units. Based on the above information, this Project qualifies for a limited air quality analysis applying the SPAL guidance to determine air quality impacts.

Table 3-2 presents the SPAL vehicle trip parameters for projects.

¹ SJVAPCD GAMAQI, Section 8.3.4, Page 85.

Table 3-2 Small Project Analysis Level in Vehicle Trips

Land Use Category	Project Size (trips/day)*
Residential Housing	1,453
Commercial	1,673
Office	1,628
Institutional	1,707
Industrial	1,506
Proposed Project	733
SPAL Exceeded?	NO
Notes: * Project size based on SPAL Table 5-3(d), as posted on SJVAPCD webpage: https://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf	

As shown in **Table 3-2**, the proposed Project would not exceed the established SPAL vehicle trip limits for Residential Housing. The Project would generate 733 average daily trips compared to the allowable project vehicle trips for a residential housing projects which is 1,453 average daily trips. Based on the above information, this Project qualifies for a limited air quality analysis applying the SPAL guidance to determine air quality impacts.

4. AIR QUALITY IMPACTS AND EVALUATION

Significance thresholds are based on the CEQA Appendix G Environmental Checklist Form (not included herein) and SJVAPCD air quality thresholds (SJVAPCD 2015). A potentially significant impact to air quality, as defined by the CEQA Checklist, would occur if the project caused one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violation of any air quality standard or substantial contribution to an existing or projected air quality standard;
- A cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable Federal or state ambient air quality standard (including emissions which exceed quantitative thresholds for ozone precursors);
- Exposure of sensitive receptors to substantial pollutant concentrations; and/or
- The creation of objectionable odors affecting a substantial number of people.

The SJVAPCD has identified quantitative emission thresholds to determine whether the potential air quality impacts of a project require analysis in an Environmental Impact Report. The SJVAPCD air quality thresholds from the GAMAQI are presented in **Table 4-1** (SJVAPCD 2015). The SJVAPCD separates construction emissions from operational emissions for determining significance thresholds for air pollutant emissions.

Table 4-1. SJVAPCD Air Quality Thresholds of Significance - Criteria Pollutants

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NO _x	10	10	10
ROG	10	10	10
SO _x	27	27	27
PM ₁₀	15	15	15
PM _{2.5}	15	15	15

Source: SJVAPCD 2015

Criteria pollutant) emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (California Air Pollution Control Officers Association (CAPCOA) 2016). This project would generate short-term construction emissions and long-term operational emissions.

An air quality evaluation also considers: 1) exposure of sensitive receptors to substantial pollutant concentrations; and 2) the creation of objectionable odors affecting a substantial number of people. The criteria for this evaluation are based on the Lead Agency's determination of the proximity 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.

5. PROJECT-RELATED EMISSIONS

This document was prepared pursuant to the SJVAPCD’s GAMAQI and SPAL guidelines and provides a cursory review of the Project emissions to demonstrate that it would not exceed established air quality emissions thresholds.

5.1. SHORT-TERM EMISSIONS

Table 5-1 shows the construction emission levels using default CalEEMod factors for construction of a 126 unit multi-family residential project (see **Attachment A**) except for the following:

- Project site acres was changed from the default to the actual acreage of the Project site.

Construction emission estimates also included the following SJVAPCD’s required measures for all projects:

- Water exposed area 3 times per day; and
- Reduce vehicle speed to less than 15 miles per hour.

Based on these anticipated activity levels, the Project construction activities would not exceed construction thresholds (**Table 4-1**). Construction emissions therefore were found to be less than significant and no further evaluation is required.

Table 5-1. Construction Emission Levels

Emissions Source	Pollutant					
	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
	(tons/year)					
2019 Construction Emissions	0.10	1.12	0.68	0.001	0.14	0.09
2020 Construction Emissions	0.33	2.75	2.56	0.005	0.26	0.17
2021 Construction Emissions	1.24	0.45	0.48	0.001	0.04	0.03
SJVAPCD Construction Emissions Thresholds	10	10	100	27	15	15
Is Threshold Exceeded?	No	No	No	No	No	No

5.2. LONG-TERM EMISSIONS

Table 5-2 presents the Project’s long-term operations emissions generated from mobile, energy, and area sources as well as from water use and waste generation emissions. Most of these emissions impacts are from mobile sources traveling to and from the Project area. The following changes to default values were incorporated during the CalEEMod analysis:

- Fleet mix was changed from the default to match the SJVAPCD’s residential fleet mix for year 2021.

Operational emission estimates also included the following mitigation measures even though the project was less than significant before mitigation:

- Improved walkability design;
- Improved Destination Accessibility;

- Improved pedestrian network;
- No hearths; and
- Use electric lawnmower, leaf blower, and chainsaw (3% per SJVAPCD).

Table 5-2. Total Project Operational Emissions

Emissions Source	Pollutant					
	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
(tons/year)						
Unmitigated						
Operational Emissions	0.88	1.02	3.60	0.01	0.81	0.23
SJVAPCD Operational Emissions Thresholds – non-permitted sources	10	10	100	27	15	15
Is Threshold Exceeded Before Mitigation?	No	No	No	No	No	No
Mitigated						
Operational Emissions	0.85	0.83	2.98	0.01	0.57	0.17
SJVAPCD Operational Emissions Thresholds – non-permitted sources	10	10	100	27	15	15
Is Threshold Exceeded?	No	No	No	No	No	No

As calculated (see **Attachment A**), the long-term operational (mobile) emissions associated with the proposed Project would be less than SJVAPCD significance threshold levels and would, therefore, *not pose a significant impact to criteria air pollutants*. This finding is consistent with the SPAL screening thresholds.

5.3. GREENHOUSE GAS EMISSIONS

The Project’s greenhouse gas (GHG) emissions are primarily from mobile source activities. Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified as carbon dioxide equivalents (CO₂e) (see **Attachment A**). The proposed Project’s operational CO₂e emissions were estimated using CalEEMod. These emissions are summarized in **Table 5-3**.

Table 5-3. Estimated Annual Greenhouse Gas Emissions

	CO ₂ Emissions metric tons	CH ₄ Emissions metric tons	N ₂ O Emissions metric tons	CO ₂ e Emissions metric tons
2021 Project Operations	945.57	1.01	0.01	974.00
2005 BAU	1,440.67	1.18	0.01	1,473.60
BAU less Project emissions				33.9%

The current inventory and forecast for GHG emissions in the California Air Resources Board’s 2008 Climate Change Scoping Plan supports the 2011 IPCC estimates. The 2008 Climate Change Scoping Plan also indicates that GHG emissions will increase to 596.41 million metric tons by 2020. It is widely understood that climate change is a “global” issue and, as such, GHG emissions are a cumulative problem and can only be evaluated as such.

The amount of CO₂ that would be generated by the project is so small in relation to the California CO₂ equivalent estimates for 2011 and 2020 (3,144.94 CO₂e) that it’s not possible for the contribution of the project to be cumulatively considerable. Additionally, the Project’s GHG emissions are less than the 2005 business as usual emissions for the Project by 499.6 metric tons CO₂e, which is a 33.9% reduction. Therefore, the project would not generate a cumulatively considerable GHG impact nor would it conflict with any applicable plan, policy or

regulation adopted for the purpose of reducing the emissions of GHGs. The project will also not conflict with any elements of the California Air Resources Board's 2008 Climate Change Scoping Plan. Therefore, this potential impact is *less than significant*.

5.4. POTENTIAL IMPACT ON SENSITIVE RECEPTORS

The proposed Project is located near the northeastern corner of Panama Lane and Old River Road. Sensitive receptors are defined as areas where young children, chronically ill individuals, the elderly or people who are more sensitive than the general population reside. Schools, hospitals, nursing homes and daycare centers are locations where sensitive receptors would likely reside. The closest schools are Independence High School at 0.81 miles to the south and Sing Lum Elementary School at 0.89 miles to the north. The closest hospital is Mercy Hospital Southwest at 3.48 miles north and the closest daycare facilities are Harris Family Child Care at 0.92 miles northwest and Rosie's 24 Hour Child Care 0.83 miles north of the Project. There are no other known schools, hospitals, or nursing homes within a one mile radius of the Project.

Based on the predicted operational emissions and activity types, the proposed Project is not expected to affect sensitive receptors and is *not expected to have any adverse impacts on any known sensitive receptor*.

5.5. POTENTIAL IMPACTS TO VISIBILITY TO NEARBY CLASS 1 AREAS

It should be noted that visibility impact analyses are not usually conducted for area sources. The recommended analysis methodology was initially intended for stationary sources of emissions which were subject to the Prevention of Significant Deterioration (PSD) requirements in 40 CFR Part 60. Since the Project's emissions are predicted to be significantly less than the PSD threshold levels, an impact at either the Dome Land Wilderness or the Sequoia National Park Areas (the two nearest Class 1 areas to the Project) is extremely unlikely. Therefore, based on the Project's predicted emissions, the Project is *not expected to have any adverse impact to visibility at any Class 1 Area*.

5.6. POTENTIAL ODOR IMPACTS

The proposed Project is a multi-family development near other residential or multi-family developments. Residential neighborhoods and multi-family developments are not known to be a source of nuisance odors. The Project is therefore not anticipated to have substantial odor impacts. The Project is therefore anticipated to have a *less than significant odor impact*.

5.7. AMBIENT AIR QUALITY IMPACTS

Table 4 of GAMAQI (2015, p 96), SJVAPCD has developed SPAL screening thresholds for Ambient Air Quality Analyses (AAQA). Multi-family residential projects of less than 590 units would meet the screening threshold for an AAQA (SJVAPCD 2015). Because the proposed Project consists of 126 units, the proposed Project meets the SPAL screening threshold for an AAQA. This screening threshold level represents the activity levels which would not exceed AAQA significance criteria. The proposed Project's AAQA impacts would therefore be *less than significant* and no further impact analysis is required.

5.8. TOXIC AIR CONTAMINANT (TAC) IMPACTS

TACs, as defined by the California Health & Safety Code (CH&SC) §44321, are listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regulation document. SJVAPCD's risk management objectives for permitting and CEQA are as follows:

- Minimize health risks from new and modified sources of air pollution.
- Health risks from new and modified sources shall not be significant relative to the background risk levels and other risk levels that are typically accepted throughout the community.
- Avoid unreasonable restrictions on permitting.

The proposed Project is a multi-family residential Project and not expected to generate any TAC emissions. The Project would therefore not generate a health risk impact due to TAC emissions. Its potential health risk impacts would therefore be considered *less than significant* and no further health risk assessment is required.

6. CONCLUSIONS

Based on the criteria established by the SJVAPCD's GAMAQI and SPAL guidelines, the proposed Project does not meet the minimum standards to require a full Air Quality Impact Analysis. Furthermore, the Project as proposed would not exceed the SJVAPCD's criteria air pollutant emission levels and would generate *less than significant air quality impacts*.

7. REFERENCES

California Environmental Protection Agency, Air Toxics Hot Spots Program Risk Assessment Guidelines – The Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments, August 2003.

California Environmental Quality Act (CEQA). 2012. (Public Resources Code 21000 to 21177) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 15387).

----- . 2009. CEQA, Appendix G – Environmental Checklist Form, Final Text.

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model tm (CalEEMod), version 2016.3.2.

----- . 1997. “Air Toxics Hot Spots” Program Risk Assessment Guidelines, Revised 1992.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. December 17, 2009.

----- . 2015. *Small Project Analysis Level*. June 2012.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). March 19, 2015

----- . 2017, *Small Project Analysis Level (SPAL) Memorandum*. March 1, 2017.

APPENDIX A: CALEEMOD EMISSIONS ESTIMATES OUTPUT FILES

Nicholuson SPAL - Kern-San Joaquin County, Annual

Nicholuson SPAL
Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	126.00	Dwelling Unit	16.89	126,000.00	360

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Actual Lot Acreage
- Construction Phase -
- Fleet Mix - Year 2021 Residential Fleet Mix
- Construction Off-road Equipment Mitigation -
- Mobile Land Use Mitigation -
- Area Mitigation -

Nicholuson SPAL - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	6.3210e-003	9.0000e-004
tblFleetMix	MCY	5.9160e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	8.7700e-004	1.6000e-003
tblFleetMix	MHD	0.02	9.0000e-003
tblFleetMix	OBUS	1.6260e-003	0.00
tblFleetMix	SBUS	9.5000e-004	9.0000e-004
tblFleetMix	UBUS	1.7240e-003	4.4000e-003
tblLandUse	LotAcreage	7.88	16.89
tblWoodstoves	NumberCatalytic	16.89	0.00
tblWoodstoves	NumberNoncatalytic	16.89	0.00

2.0 Emissions Summary

Nicholuson SPAL - Kern-San Joaquin County, Annual

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					
2019	0.1028	1.1161	0.6828	1.2700e-003	0.2260	0.0516	0.2777	0.1051	0.0476	0.1527	0.0000	113.8331	113.8331	0.0338	0.0000	114.6780
2020	0.3305	2.7529	2.5559	4.9900e-003	0.1074	0.1482	0.2556	0.0288	0.1393	0.1681	0.0000	438.3727	438.3727	0.0800	0.0000	440.3736
2021	1.2348	0.4504	0.4763	8.9000e-004	0.0158	0.0232	0.0390	4.2200e-003	0.0218	0.0260	0.0000	78.0482	78.0482	0.0163	0.0000	78.4564
Maximum	1.2348	2.7529	2.5559	4.9900e-003	0.2260	0.1482	0.2777	0.1051	0.1393	0.1681	0.0000	438.3727	438.3727	0.0800	0.0000	440.3736

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					
2019	0.1028	1.1161	0.6828	1.2700e-003	0.0916	0.0516	0.1432	0.0419	0.0476	0.0895	0.0000	113.8330	113.8330	0.0338	0.0000	114.6779
2020	0.3305	2.7529	2.5559	4.9900e-003	0.1074	0.1482	0.2556	0.0288	0.1393	0.1681	0.0000	438.3723	438.3723	0.0800	0.0000	440.3732
2021	1.2348	0.4504	0.4763	8.9000e-004	0.0158	0.0232	0.0390	4.2200e-003	0.0218	0.0260	0.0000	78.0481	78.0481	0.0163	0.0000	78.4563
Maximum	1.2348	2.7529	2.5559	4.9900e-003	0.1074	0.1482	0.2556	0.0419	0.1393	0.1681	0.0000	438.3723	438.3723	0.0800	0.0000	440.3732

Nicholuson SPAL - Kern-San Joaquin 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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	38.50	0.00	23.50	45.76	0.00	18.22	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	10-1-2019	12-31-2019	1.2155	1.2155
2	1-1-2020	3-31-2020	0.7661	0.7661
3	4-1-2020	6-30-2020	0.7653	0.7653
4	7-1-2020	9-30-2020	0.7738	0.7738
5	10-1-2020	12-31-2020	0.7745	0.7745
6	1-1-2021	3-31-2021	1.1802	1.1802
7	4-1-2021	6-30-2021	0.5148	0.5148
		Highest	1.2155	1.2155

Nicholuson SPAL - Kern-San Joaquin County, Annual

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	0.6443	0.0580	0.9577	3.5000e-004		8.9800e-003	8.9800e-003		8.9800e-003	8.9800e-003	0.0000	56.1124	56.1124	2.5300e-003	1.0000e-003	56.4738
Energy	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	322.6962	322.6962	0.0114	4.1000e-003	324.2052
Mobile	0.2199	0.8541	2.6009	8.8700e-003	0.7833	7.6200e-003	0.7909	0.2096	7.1000e-003	0.2167	0.0000	813.7574	813.7574	0.0434	0.0000	814.8416
Waste						0.0000	0.0000		0.0000	0.0000	11.7654	0.0000	11.7654	0.6953	0.0000	29.1482
Water						0.0000	0.0000		0.0000	0.0000	2.6045	18.1923	20.7967	0.2683	6.4900e-003	29.4379
Total	0.8764	1.0163	3.6029	9.8900e-003	0.7833	0.0250	0.8083	0.2096	0.0245	0.2341	14.3698	1,210.7583	1,225.1281	1.0210	0.0116	1,254.1065

Nicholuson SPAL - Kern-San Joaquin County, Annual

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	0.6384	0.0108	0.9308	5.0000e-005		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	1.5145	1.5145	1.4600e-003	0.0000	1.5510
Energy	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	322.6962	322.6962	0.0114	4.1000e-003	324.2052
Mobile	0.2001	0.7113	2.0040	6.4100e-003	0.5516	5.6200e-003	0.5573	0.1476	5.2400e-003	0.1529	0.0000	588.7997	588.7997	0.0344	0.0000	589.6593
Waste						0.0000	0.0000		0.0000	0.0000	11.7654	0.0000	11.7654	0.6953	0.0000	29.1482
Water						0.0000	0.0000		0.0000	0.0000	2.6045	18.1923	20.7967	0.2683	6.4900e-003	29.4379
Total	0.8507	0.8263	2.9792	7.1300e-003	0.5516	0.0192	0.5708	0.1476	0.0188	0.1664	14.3698	931.2027	945.5725	1.0109	0.0106	974.0015

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.94	18.70	17.31	27.91	29.57	23.37	29.38	29.58	23.30	28.91	0.00	23.09	22.82	0.99	8.63	22.34

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/29/2019	11/11/2019	5	10	
2	Grading	Grading	11/12/2019	12/23/2019	5	30	
3	Building Construction	Building Construction	12/24/2019	2/15/2021	5	300	
4	Paving	Paving	2/16/2021	3/15/2021	5	20	
5	Architectural Coating	Architectural Coating	3/16/2021	4/12/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	91.00	13.00	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
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0903	0.0120	0.1023	0.0497	0.0110	0.0607	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

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3.2 Site Preparation - 2019

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	2.7000e-004	2.6100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6870	0.6870	2.0000e-005	0.0000	0.6875
Total	3.8000e-004	2.7000e-004	2.6100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6870	0.6870	2.0000e-005	0.0000	0.6875

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					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	0.0217	0.2279	0.1103	1.9000e-004	0.0352	0.0120	0.0472	0.0194	0.0110	0.0304	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195

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3.2 Site Preparation - 2019

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	2.7000e-004	2.6100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6870	0.6870	2.0000e-005	0.0000	0.6875
Total	3.8000e-004	2.7000e-004	2.6100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6870	0.6870	2.0000e-005	0.0000	0.6875

3.3 Grading - 2019

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	0.0711	0.8178	0.5007	9.3000e-004	0.1301	0.0357	0.1658	0.0540	0.0329	0.0868	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129

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3.3 Grading - 2019

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	1.2700e-003	8.9000e-004	8.7100e-003	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2899	2.2899	7.0000e-005	0.0000	2.2915
Total	1.2700e-003	8.9000e-004	8.7100e-003	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2899	2.2899	7.0000e-005	0.0000	2.2915

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					0.0507	0.0000	0.0507	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	0.0711	0.8178	0.5007	9.3000e-004	0.0507	0.0357	0.0865	0.0210	0.0329	0.0539	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128

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3.3 Grading - 2019

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	1.2700e-003	8.9000e-004	8.7100e-003	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2899	2.2899	7.0000e-005	0.0000	2.2915
Total	1.2700e-003	8.9000e-004	8.7100e-003	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.2899	2.2899	7.0000e-005	0.0000	2.2915

3.4 Building Construction - 2019

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	7.0800e-003	0.0632	0.0515	8.0000e-005		3.8700e-003	3.8700e-003		3.6400e-003	3.6400e-003	0.0000	7.0531	7.0531	1.7200e-003	0.0000	7.0961
Total	7.0800e-003	0.0632	0.0515	8.0000e-005		3.8700e-003	3.8700e-003		3.6400e-003	3.6400e-003	0.0000	7.0531	7.0531	1.7200e-003	0.0000	7.0961

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3.4 Building Construction - 2019

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	1.9000e-004	5.2300e-003	1.0500e-003	1.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	8.0000e-005	4.0000e-005	1.1000e-004	0.0000	1.0830	1.0830	9.0000e-005	0.0000	1.0853
Worker	1.1600e-003	8.1000e-004	7.9300e-003	2.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	2.0838	2.0838	6.0000e-005	0.0000	2.0853
Total	1.3500e-003	6.0400e-003	8.9800e-003	3.0000e-005	2.4600e-003	6.0000e-005	2.5200e-003	6.6000e-004	5.0000e-005	7.1000e-004	0.0000	3.1668	3.1668	1.5000e-004	0.0000	3.1706

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	7.0800e-003	0.0632	0.0515	8.0000e-005		3.8700e-003	3.8700e-003		3.6400e-003	3.6400e-003	0.0000	7.0531	7.0531	1.7200e-003	0.0000	7.0961
Total	7.0800e-003	0.0632	0.0515	8.0000e-005		3.8700e-003	3.8700e-003		3.6400e-003	3.6400e-003	0.0000	7.0531	7.0531	1.7200e-003	0.0000	7.0961

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3.4 Building Construction - 2019

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	1.9000e-004	5.2300e-003	1.0500e-003	1.0000e-005	2.6000e-004	4.0000e-005	3.0000e-004	8.0000e-005	4.0000e-005	1.1000e-004	0.0000	1.0830	1.0830	9.0000e-005	0.0000	1.0853
Worker	1.1600e-003	8.1000e-004	7.9300e-003	2.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	2.0838	2.0838	6.0000e-005	0.0000	2.0853
Total	1.3500e-003	6.0400e-003	8.9800e-003	3.0000e-005	2.4600e-003	6.0000e-005	2.5200e-003	6.6000e-004	5.0000e-005	7.1000e-004	0.0000	3.1668	3.1668	1.5000e-004	0.0000	3.1706

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596

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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	6.9000e-003	0.2085	0.0403	4.9000e-004	0.0114	1.1700e-003	0.0125	3.2800e-003	1.1200e-003	4.4000e-003	0.0000	46.8740	46.8740	3.7400e-003	0.0000	46.9676
Worker	0.0459	0.0310	0.3084	9.7000e-004	0.0961	6.8000e-004	0.0967	0.0255	6.3000e-004	0.0261	0.0000	88.0897	88.0897	2.2700e-003	0.0000	88.1464
Total	0.0528	0.2396	0.3488	1.4600e-003	0.1074	1.8500e-003	0.1093	0.0288	1.7500e-003	0.0305	0.0000	134.9636	134.9636	6.0100e-003	0.0000	135.1140

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592

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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	6.9000e-003	0.2085	0.0403	4.9000e-004	0.0114	1.1700e-003	0.0125	3.2800e-003	1.1200e-003	4.4000e-003	0.0000	46.8740	46.8740	3.7400e-003	0.0000	46.9676
Worker	0.0459	0.0310	0.3084	9.7000e-004	0.0961	6.8000e-004	0.0967	0.0255	6.3000e-004	0.0261	0.0000	88.0897	88.0897	2.2700e-003	0.0000	88.1464
Total	0.0528	0.2396	0.3488	1.4600e-003	0.1074	1.8500e-003	0.1093	0.0288	1.7500e-003	0.0305	0.0000	134.9636	134.9636	6.0100e-003	0.0000	135.1140

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	0.0304	0.2789	0.2652	4.3000e-004		0.0153	0.0153		0.0144	0.0144	0.0000	37.0620	37.0620	8.9400e-003	0.0000	37.2855
Total	0.0304	0.2789	0.2652	4.3000e-004		0.0153	0.0153		0.0144	0.0144	0.0000	37.0620	37.0620	8.9400e-003	0.0000	37.2855

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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	6.8000e-004	0.0229	4.3100e-003	6.0000e-005	1.3900e-003	6.0000e-005	1.4500e-003	4.0000e-004	6.0000e-005	4.6000e-004	0.0000	5.6719	5.6719	4.3000e-004	0.0000	5.6827
Worker	5.1600e-003	3.3700e-003	0.0343	1.1000e-004	0.0117	8.0000e-005	0.0118	3.1200e-003	7.0000e-005	3.1900e-003	0.0000	10.3841	10.3841	2.5000e-004	0.0000	10.3902
Total	5.8400e-003	0.0263	0.0386	1.7000e-004	0.0131	1.4000e-004	0.0133	3.5200e-003	1.3000e-004	3.6500e-003	0.0000	16.0559	16.0559	6.8000e-004	0.0000	16.0729

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	0.0304	0.2789	0.2652	4.3000e-004		0.0153	0.0153		0.0144	0.0144	0.0000	37.0619	37.0619	8.9400e-003	0.0000	37.2855
Total	0.0304	0.2789	0.2652	4.3000e-004		0.0153	0.0153		0.0144	0.0144	0.0000	37.0619	37.0619	8.9400e-003	0.0000	37.2855

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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	6.8000e-004	0.0229	4.3100e-003	6.0000e-005	1.3900e-003	6.0000e-005	1.4500e-003	4.0000e-004	6.0000e-005	4.6000e-004	0.0000	5.6719	5.6719	4.3000e-004	0.0000	5.6827
Worker	5.1600e-003	3.3700e-003	0.0343	1.1000e-004	0.0117	8.0000e-005	0.0118	3.1200e-003	7.0000e-005	3.1900e-003	0.0000	10.3841	10.3841	2.5000e-004	0.0000	10.3902
Total	5.8400e-003	0.0263	0.0386	1.7000e-004	0.0131	1.4000e-004	0.0133	3.5200e-003	1.3000e-004	3.6500e-003	0.0000	16.0559	16.0559	6.8000e-004	0.0000	16.0729

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854

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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	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704
Total	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854

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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	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704
Total	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704

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	1.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	1.1848	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576

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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	6.4000e-004	4.2000e-004	4.2400e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2837	1.2837	3.0000e-005	0.0000	1.2845
Total	6.4000e-004	4.2000e-004	4.2400e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2837	1.2837	3.0000e-005	0.0000	1.2845

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	1.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	1.1848	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576

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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	6.4000e-004	4.2000e-004	4.2400e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2837	1.2837	3.0000e-005	0.0000	1.2845
Total	6.4000e-004	4.2000e-004	4.2400e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2837	1.2837	3.0000e-005	0.0000	1.2845

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

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	ROG	NOx	CO	SO2	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	0.2001	0.7113	2.0040	6.4100e-003	0.5516	5.6200e-003	0.5573	0.1476	5.2400e-003	0.1529	0.0000	588.7997	588.7997	0.0344	0.0000	589.6593
Unmitigated	0.2199	0.8541	2.6009	8.8700e-003	0.7833	7.6200e-003	0.7909	0.2096	7.1000e-003	0.2167	0.0000	813.7574	813.7574	0.0434	0.0000	814.8416

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	732.06	714.42	609.84	2,070,747	1,458,339
Total	732.06	714.42	609.84	2,070,747	1,458,339

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	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
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

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	201.8986	201.8986	9.1300e-003	1.8900e-003	202.6897
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	201.8986	201.8986	9.1300e-003	1.8900e-003	202.6897
NaturalGas Mitigated	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
NaturalGas Unmitigated	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

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					
Condo/Townhouse	2.26366e+006	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
Total		0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

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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					
Condo/Townhouse	2.26366e+006	0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
Total		0.0122	0.1043	0.0444	6.7000e-004		8.4300e-003	8.4300e-003		8.4300e-003	8.4300e-003	0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	694021	201.8986	9.1300e-003	1.8900e-003	202.6897
Total		201.8986	9.1300e-003	1.8900e-003	202.6897

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	694021	201.8986	9.1300e-003	1.8900e-003	202.6897
Total		201.8986	9.1300e-003	1.8900e-003	202.6897

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

No Hearths Installed

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	ROG	NOx	CO	SO2	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	0.6384	0.0108	0.9308	5.0000e-005		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	1.5145	1.5145	1.4600e-003	0.0000	1.5510
Unmitigated	0.6443	0.0580	0.9577	3.5000e-004		8.9800e-003	8.9800e-003		8.9800e-003	8.9800e-003	0.0000	56.1124	56.1124	2.5300e-003	1.0000e-003	56.4738

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	0.1183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4921					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.5200e-003	0.0471	0.0201	3.0000e-004		3.8100e-003	3.8100e-003		3.8100e-003	3.8100e-003	0.0000	54.5841	54.5841	1.0500e-003	1.0000e-003	54.9085
Landscaping	0.0284	0.0108	0.9376	5.0000e-005		5.1700e-003	5.1700e-003		5.1700e-003	5.1700e-003	0.0000	1.5282	1.5282	1.4800e-003	0.0000	1.5653
Total	0.6443	0.0580	0.9577	3.5000e-004		8.9800e-003	8.9800e-003		8.9800e-003	8.9800e-003	0.0000	56.1124	56.1124	2.5300e-003	1.0000e-003	56.4738

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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	0.1183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4921					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	0.0280	0.0108	0.9308	5.0000e-005		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	1.5145	1.5145	1.4600e-003	0.0000	1.5510
Total	0.6384	0.0108	0.9308	5.0000e-005		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	1.5145	1.5145	1.4600e-003	0.0000	1.5510

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.7967	0.2683	6.4900e-003	29.4379
Unmitigated	20.7967	0.2683	6.4900e-003	29.4379

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.20941 / 5.1755	20.7967	0.2683	6.4900e-003	29.4379
Total		20.7967	0.2683	6.4900e-003	29.4379

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.20941 / 5.1755	20.7967	0.2683	6.4900e-003	29.4379
Total		20.7967	0.2683	6.4900e-003	29.4379

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7654	0.6953	0.0000	29.1482
Unmitigated	11.7654	0.6953	0.0000	29.1482

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	57.96	11.7654	0.6953	0.0000	29.1482
Total		11.7654	0.6953	0.0000	29.1482

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	57.96	11.7654	0.6953	0.0000	29.1482
Total		11.7654	0.6953	0.0000	29.1482

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	126.00	Dwelling Unit	16.89	126,000.00	360

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Actual Lot Acreage
- Fleet Mix - Year 2013 Residential Fleet Mix
- Construction Off-road Equipment Mitigation -
- Area Mitigation -
- Mobile Land Use Mitigation -
- Construction Phase - Operational RUn Only

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Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	10/28/2005	9/30/2005
tblFleetMix	HHD	0.14	0.02
tblFleetMix	LDA	0.39	0.53
tblFleetMix	LDT1	0.06	0.19
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LHD1	0.05	2.0000e-003
tblFleetMix	LHD2	8.7770e-003	1.1000e-003
tblFleetMix	MCY	6.1030e-003	3.2000e-003
tblFleetMix	MDV	0.17	0.06
tblFleetMix	MH	2.3920e-003	1.6000e-003
tblFleetMix	MHD	0.02	9.7000e-003
tblFleetMix	OBUS	1.2660e-003	0.00
tblFleetMix	SBUS	9.5200e-004	1.2000e-003
tblFleetMix	UBUS	1.2200e-003	4.7000e-003
tblLandUse	LotAcreage	7.88	16.89
tblWoodstoves	NumberCatalytic	16.89	0.00
tblWoodstoves	NumberNoncatalytic	16.89	0.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	56.1124	56.1124	3.4900e-003	1.0000e-003	56.4979
Energy											0.0000	322.6962	322.6962	0.0114	4.1000e-003	324.2052
Mobile											0.0000	1,029.2978	1,029.2978	0.2004	0.0000	1,034.3084
Waste											11.7654	0.0000	11.7654	0.6953	0.0000	29.1482
Water											2.6045	18.1923	20.7967	0.2683	6.4900e-003	29.4379
Total											14.3698	1,426.2986	1,440.6684	1.1790	0.0116	1,473.5975

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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											0.0000	56.1124	56.1124	3.4900e-003	1.0000e-003	56.4979
Energy											0.0000	322.6962	322.6962	0.0114	4.1000e-003	324.2052
Mobile											0.0000	1,029.2978	1,029.2978	0.2004	0.0000	1,034.3084
Waste											11.7654	0.0000	11.7654	0.6953	0.0000	29.1482
Water											2.6045	18.1923	20.7967	0.2683	6.4900e-003	29.4379
Total											14.3698	1,426.2986	1,440.6684	1.1790	0.0116	1,473.5975

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2005	9/30/2005	5	0	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

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
Demolition	6	15.00	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

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3.2 Demolition - 2005

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	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											0.0000	1,029.2978	1,029.2978	0.2004	0.0000	1,034.3084
Unmitigated											0.0000	1,029.2978	1,029.2978	0.2004	0.0000	1,034.3084

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	732.06	714.42	609.84	2,070,747	2,070,747
Total	732.06	714.42	609.84	2,070,747	2,070,747

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	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
Condo/Townhouse	0.532200	0.190100	0.167100	0.062800	0.002000	0.001100	0.009700	0.024300	0.000000	0.004700	0.003200	0.001200	0.001600

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	201.8986	201.8986	9.1300e-003	1.8900e-003	202.6897
Electricity Unmitigated											0.0000	201.8986	201.8986	9.1300e-003	1.8900e-003	202.6897
NaturalGas Mitigated											0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
NaturalGas Unmitigated											0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

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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					
Condo/Townhouse	2.26366e+006											0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
Total												0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

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					
Condo/Townhouse	2.26366e+006											0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155
Total												0.0000	120.7977	120.7977	2.3200e-003	2.2100e-003	121.5155

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	694021	201.8986	9.1300e-003	1.8900e-003	202.6897
Total		201.8986	9.1300e-003	1.8900e-003	202.6897

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	694021	201.8986	9.1300e-003	1.8900e-003	202.6897
Total		201.8986	9.1300e-003	1.8900e-003	202.6897

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	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											0.0000	56.1124	56.1124	3.4900e-003	1.0000e-003	56.4979
Unmitigated											0.0000	56.1124	56.1124	3.4900e-003	1.0000e-003	56.4979

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	54.5841	54.5841	1.0500e-003	1.0000e-003	54.9085
Landscaping											0.0000	1.5282	1.5282	2.4500e-003	0.0000	1.5894
Total											0.0000	56.1124	56.1124	3.5000e-003	1.0000e-003	56.4979

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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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	54.5841	54.5841	1.0500e-003	1.0000e-003	54.9085
Landscaping											0.0000	1.5282	1.5282	2.4500e-003	0.0000	1.5894
Total											0.0000	56.1124	56.1124	3.5000e-003	1.0000e-003	56.4979

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.7967	0.2683	6.4900e-003	29.4379
Unmitigated	20.7967	0.2683	6.4900e-003	29.4379

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.20941 / 5.1755	20.7967	0.2683	6.4900e-003	29.4379
Total		20.7967	0.2683	6.4900e-003	29.4379

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.20941 / 5.1755	20.7967	0.2683	6.4900e-003	29.4379
Total		20.7967	0.2683	6.4900e-003	29.4379

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7654	0.6953	0.0000	29.1482
Unmitigated	11.7654	0.6953	0.0000	29.1482

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	57.96	11.7654	0.6953	0.0000	29.1482
Total		11.7654	0.6953	0.0000	29.1482

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	57.96	11.7654	0.6953	0.0000	29.1482
Total		11.7654	0.6953	0.0000	29.1482

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation
