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## **APPENDIX D**

GHG/AQ MEMORANDUM AND MODELING RESULTS

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**To:** Bryce Ternet, Project Manager  
**From:** Sally Rideout  
**Cc:** File  
**Date:** March 10, 2016

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**Re:** Alberto Way EIR GHG/AQ Emissions Quantification - Methodology and Assumptions

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## ***Background and Scope of Assessment***

### **Emissions Model**

Project-related air and greenhouse gas (GHG) emissions for the proposed project were estimated using California Emissions Estimator Model (CalEEMod) Version 2013.2.2 software. The use of CalEEMod is recommended by the California Air Resources Board (CARB) and accepted by the Bay Area Air Quality Management District (BAAQMD). Criteria air pollutant emissions are reported in pounds per day; GHG emissions are reported in metric tons of carbon dioxide equivalents (MT CO<sub>2</sub>e) per year.

The CalEEMod platform allows calculations of both construction emissions and operational emissions from land use projects. It calculates the daily maximum and annual average for criteria pollutants as well as total or annual GHG emissions. The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The BAAQMD approach to CEQA analyses for GHG emissions from construction is to emphasize implementation of effective and comprehensive control measures rather than detailed

**MEMORANDUM**

quantification of emissions. Therefore, modeling of construction-related GHG emissions is not included in this assessment.

## **Project Background**

The proposed project site is an approximately 2.15-acre parcel located at 401 – 409 Alberto Way on the northwest corner of Los Gatos – Saratoga Road (State Route 9) and Alberto Way in the Town of Los Gatos in Santa Clara County (Assessor's Parcel No. 529-23-018). The site is improved with three, two-story wood frame office buildings, with a combined floor area of 31,000 square feet and a parking lot. The Town has received an application to approve demolition of existing improvements on the site and construct two two-story office buildings for a total of 91,965 square feet, two levels of underground parking and related landscaping and paved access. An Environmental Impact Report (EIR) is being prepared by the Town for the proposed project. The project site is located within the San Francisco Bay Area Air Basin, which is under the regulatory authority of the BAAQMD. This assessment quantifies the greenhouse gas and criteria pollutant emissions of the proposed project.

## **Methodology**

This assessment quantifies operational criteria air pollutant and GHG emissions for existing conditions and the proposed project based upon the land use assumptions identified in Tables 1 & 2 of this assessment.

## **Operational Emissions Data Inputs**

For operational emissions, the model calculates indirect criteria pollutant and GHG emissions from processes “downstream” of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Unless otherwise noted, data inputs for the model are based on observed existing conditions and anticipated future development consistent with the project plans (ArcTec 2015), construction estimates provided by LP Acquisitions, and vehicle trip generation information from the traffic consultant (Hexagon Transportation 2016) for a general office building use. For modeling purposes, data inputs to the model take into account the type and size of existing and the proposed project utilizing CalEEMod defaults for a General Office Building land use uses, size metrics, and related default emissions factors. Descriptions of the model's default land use categories are found in the CalEEMod User Guide (ENVIRON 2013) available online at: <http://www.aqmd.gov/caleemod/guide.htm>. Based on the construction schedule, it is assumed that the new buildings would be fully operational in

2020. The model defaults were used to generate estimates of the project's energy use, water and wastewater demand, and solid waste generation.

### **Construction Emissions Data Inputs**

The BAAQMD does not require quantification of construction-related GHG or criteria pollutant emissions. Therefore, construction emissions are not reported in the CalEEMod results. For modeling purposes, the model's default construction phasing information was adjusted to reflect the construction duration and assumed operational date.

### **Carbon Offsets and Sequestration Inputs**

CalEEMod also estimates a one-time only change in sequestration potential resulting from changes in land use such as converting vegetation to hardscape, and also calculates a carbon "offset" based upon the number of net new trees proposed, averaged over a 20-year growth cycle. Only new tree plantings in an amount greater than regulatory requirements for tree replacement can be estimated by the model. Project-specific data inputs to determine the one-time only loss of sequestration potential are derived from a comparison of existing and proposed conditions on a project site, based upon changes in land use and native vegetation. However, in this instance, due to the small size of the site and because the proposed project would replace existing buildings and landscaping on the project site, the change in carbon sequestration potential and savings gained from replacement tree planting would be negligible relative to existing conditions and future operational emissions and; therefore, are not included in the assessment.

### **Model Baseline**

CalEEMod default values for baseline conditions assume new development on a vacant site. The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing project-specific GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two would be the project's contribution to GHG emissions.

## Model Scenarios

### Existing Conditions

The site is developed with three two-story buildings and a parking lot. These uses are presented in [Table 1, Existing Conditions](#).

**Table 1 Existing Conditions**

CalEEMod Land Use Characteristic <sup>1</sup>	Size <sup>2</sup>
General Office Uses	62,000 sf
Parking Lot/Other Paved Surfaces	78,674 sf

*Source:* EMC Planning Group 2015

*Notes:* 1. Landscaping is not included as it is not a source of substantial emissions.  
 2. CalEEMod default size metrics

### Project Characteristics

The proposed project's components that would be expected to generate GHG and criteria pollutant emissions are summarized in [Table 2, Project Characteristics](#).

**Table 2 Project Characteristics**

CalEEMod Land Use Characteristic <sup>1</sup>	Size <sup>2</sup>	
	Building Footprint	Metric
General Office Building 1-First Floor	22,500	22,500 sf
General Office Building 1-Second Floor	-	21,915 sf
General Office Building 2-First Floor	23,900	23,900 sf
General Office Building 2-Second Floor	-	23,650 sf
Parking Garage Level 1	-	191 spaces
Parking Garage Level 2	-	192 spaces
Parking Lot/Other Paved Surfaces	-	37,808 sf

*Source:* Arc Tec 2015

- Notes:**
1. Landscaping is not included as it is not a source of substantial emissions. Landscaped areas assumed to consist of 10 percent of lot (9,365 sf)
  2. CalEEMod default size metrics

## Results

Operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO<sub>2</sub>e). Criteria air pollutant emissions are expressed in pounds per day. Detailed model results for winter and summer criteria pollutant, and annual GHG emissions are included as attachments to this assessment.

### Operational Criteria Air Pollutant Emissions

Operational criteria air pollutant emissions generated under the proposed project conditions are presented in [Table 3, Operational Criteria Air Pollutant Emissions \(Pounds per Day\)](#).

**Table 3 Operational Criteria Pollutant Emissions (Pounds per Day)**

	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>25</sub>
Summer (Unmitigated)	12.42	10.46	5.33	1.55
Winter (Unmitigated)	12.7	11.59	5.33	1.55

*Source:* BAAQMD 2011; EMC Planning Group Inc. 2016.

### Greenhouse Gas Emissions

A comparison of existing and proposed GHG emissions model results is presented in [Table 4, Unmitigated Operational GHG Emissions](#).

**Table 4 Unmitigated Operational GHG Emissions (metric tons per year)**

GHG Emissions (CO <sub>2</sub> e)		
Existing	Proposed	Net Emissions
1,024.51	1,828.89	804.38

Source: CalEEMod Results EMC Planning Group 2016

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## Sources

1. Environ International Corporation. *California Emission Estimator Model User's Guide Version 2013.2*. July 2013. Available online at: <http://www.aqmd.gov/calceemod/guide.htm>.
2. Environ International Corporation. *CalEEMod User's Tips (Version 2013.2.2)* October 2013. Available online at: <http://www.aqmd.gov/calceemod/guide.htm>.
3. Architectural Technologies, *Planning Application for 401 & 405 Alberto Way*. February 5, 2016.
4. BAAQMD. *California Environmental Quality Act Air Quality Guidelines*. May 2012. Available online at:  
[http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines\\_Final\\_May%202012.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en).
5. Hexagon Transportation Consultants. *401 to 409 Alberto Way Final Transportation Analysis*. January 22, 2016.
6. EMC Planning Group Inc. Results of CalEEMod modeling for NGND USA Amendment EIR. March 3, 2016; March 10, 2016. Included as an attachment.



**401-409 Alberto Way (existing scenario)  
San Francisco Bay Area Air Basin, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	62.00	1000sqft	0.71	62,000.00	0
Parking Lot	221.00	Space	1.09	88,400.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2016
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	641.35	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -  
 Land Use - information provided by city staff and project plans  
 Construction Phase - no construction

**2.0 Emissions Summary**

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**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	0.6626	3.0000e-005	2.6700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0600e-003	5.0600e-003	1.0000e-005	0.0000	5.3600e-003
Energy	5.7600e-003	0.0523	0.0440	3.1000e-004		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	435.1036	435.1036	0.0182	4.5800e-003	436.9060
Mobile	0.3452	0.8161	3.5569	6.5800e-003	0.4598	0.0105	0.4703	0.1234	9.6700e-003	0.1331	0.0000	522.9057	522.9057	0.0229	0.0000	523.3871
Waste						0.0000	0.0000		0.0000	0.0000	11.7045	0.0000	11.7045	0.6917	0.0000	26.2305
Water						0.0000	0.0000		0.0000	0.0000	3.4960	24.2228	27.7187	0.3602	8.7100e-003	37.9808
<b>Total</b>	<b>1.0135</b>	<b>0.8685</b>	<b>3.6035</b>	<b>6.8900e-003</b>	<b>0.4598</b>	<b>0.0145</b>	<b>0.4743</b>	<b>0.1234</b>	<b>0.0137</b>	<b>0.1371</b>	<b>15.2004</b>	<b>982.2371</b>	<b>997.4375</b>	<b>1.0930</b>	<b>0.0133</b>	<b>1,024.5097</b>

#### 4.0 Operational Detail - Mobile

#### 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	0.3452	0.8161	3.5569	6.5800e-003	0.4598	0.0105	0.4703	0.1234	9.6700e-003	0.1331	0.0000	522.9057	522.9057	0.0229	0.0000	523.3871
Unmitigated	0.3452	0.8161	3.5569	6.5800e-003	0.4598	0.0105	0.4703	0.1234	9.6700e-003	0.1331	0.0000	522.9057	522.9057	0.0229	0.0000	523.3871

#### 4.2 Trip Summary Information

Average Daily Trip Rate	Unmitigated	Mitigated
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Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	682.62	146.94	60.76	1,236,117	1,236,117
Parking Lot	0.00	0.00	0.00		
Total	682.62	146.94	60.76	1,236,117	1,236,117

### 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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

### 5.0 Energy Detail

#### 4.4 Fleet Mix

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	378.1302	378.1302	0.0171	3.5400e-003	379.5859
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	378.1302	378.1302	0.0171	3.5400e-003	379.5859
NaturalGas Mitigated	5.7600e-003	0.0523	0.0440	3.1000e-004		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	56.9733	56.9733	1.0900e-003	1.0400e-003	57.3201
NaturalGas Unmitigated	5.7600e-003	0.0523	0.0440	3.1000e-004		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	56.9733	56.9733	1.0900e-003	1.0400e-003	57.3201

## 5.2 Energy by Land Use - Natural Gas

### Unmitigated

	Natural Gas 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						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06764e+006	5.7600e-003	0.0523	0.0440	3.1000e-004		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	56.9733	56.9733	1.0900e-003	1.0400e-003	57.3201	
<b>Total</b>		<b>5.7600e-003</b>	<b>0.0523</b>	<b>0.0440</b>	<b>3.1000e-004</b>		<b>3.9800e-003</b>	<b>3.9800e-003</b>		<b>3.9800e-003</b>	<b>3.9800e-003</b>	<b>0.0000</b>	<b>56.9733</b>	<b>56.9733</b>	<b>1.0900e-003</b>	<b>1.0400e-003</b>	<b>57.3201</b>	

### Mitigated

	Natural Gas 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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06764e+006	5.7600e-003	0.0523	0.0440	3.1000e-004		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	56.9733	56.9733	1.0900e-003	1.0400e-003	57.3201
<b>Total</b>		<b>5.7600e-003</b>	<b>0.0523</b>	<b>0.0440</b>	<b>3.1000e-004</b>		<b>3.9800e-003</b>	<b>3.9800e-003</b>		<b>3.9800e-003</b>	<b>3.9800e-003</b>	<b>0.0000</b>	<b>56.9733</b>	<b>56.9733</b>	<b>1.0900e-003</b>	<b>1.0400e-003</b>	<b>57.3201</b>

## 5.3 Energy by Land Use - Electricity

### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
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Land Use	kWh/yr	MT/yr			
General Office Building	1.22202e+006	355.4996	0.0161	3.3300e-003	356.8682
Parking Lot	77792	22.6306	1.0200e-003	2.1000e-004	22.7177
<b>Total</b>		<b>378.1302</b>	<b>0.0171</b>	<b>3.5400e-003</b>	<b>379.5859</b>

### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	1.22202e+006	355.4996	0.0161	3.3300e-003	356.8682
Parking Lot	77792	22.6306	1.0200e-003	2.1000e-004	22.7177
<b>Total</b>		<b>378.1302</b>	<b>0.0171</b>	<b>3.5400e-003</b>	<b>379.5859</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6626	3.0000e-005	2.6700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0600e-003	5.0600e-003	1.0000e-005	0.0000	5.3600e-003
Unmitigated	0.6626	3.0000e-005	2.6700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0600e-003	5.0600e-003	1.0000e-005	0.0000	5.3600e-003

## 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	0.0749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.6700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0600e-003	5.0600e-003	1.0000e-005	0.0000	5.3600e-003
<b>Total</b>	<b>0.6626</b>	<b>3.0000e-005</b>	<b>2.6700e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0600e-003</b>	<b>5.0600e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.3600e-003</b>

### 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	0.0749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.6000e-004	3.0000e-005	2.6700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0600e-003	5.0600e-003	1.0000e-005	0.0000	5.3600e-003
<b>Total</b>	<b>0.6626</b>	<b>3.0000e-005</b>	<b>2.6700e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.0600e-003</b>	<b>5.0600e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.3600e-003</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.7187	0.3601	8.6900e-003	37.9752
Unmitigated	27.7187	0.3602	8.7100e-003	37.9808

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	11.0195 / 6.75388	27.7187	0.3602	8.7100e-003	37.9808
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>27.7187</b>	<b>0.3602</b>	<b>8.7100e-003</b>	<b>37.9808</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

General Office Building	11.0195 / 6.75388	27.7187	0.3601	8.6900e-003	37.9752
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>27.7187</b>	<b>0.3601</b>	<b>8.6900e-003</b>	<b>37.9752</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7045	0.6917	0.0000	26.2305
Unmitigated	11.7045	0.6917	0.0000	26.2305

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	57.66	11.7045	0.6917	0.0000	26.2305
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.7045</b>	<b>0.6917</b>	<b>0.0000</b>	<b>26.2305</b>



## Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	57.66	11.7045	0.6917	0.0000	26.2305
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.7045</b>	<b>0.6917</b>	<b>0.0000</b>	<b>26.2305</b>

## 9.0 Operational Offroad

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

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### 401-409 Alberto Way Project (proposed scenario)

#### San Francisco Bay Area Air Basin, Annual

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	22.50	1000sqft	0.52	22,500.00	0
General Office Building	21.90	1000sqft	0.00	21,900.00	0
General Office Building	23.90	1000sqft	0.55	23,900.00	0
General Office Building	23.70	1000sqft	0.00	23,700.00	0
Enclosed Parking with Elevator	191.00	Space	0.00	76,400.00	0
Enclosed Parking with Elevator	192.00	Space	0.00	76,800.00	0
Other Asphalt Surfaces	37.80	1000sqft	0.87	37,800.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2014
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	641.35	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - multi-story uses within same footprint

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	0.50	0.00
tblLandUse	LotAcreage	0.54	0.00

tblLandUse	LotAcreage	1.72	0.00
tblLandUse	LotAcreage	1.73	0.00

## 2.0 Emissions Summary

### 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	1.4337	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003
Energy	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	912.4425	912.4425	0.0391	9.3000e-003	916.1442
Mobile	0.6103	1.4767	6.3315	9.7400e-003	0.6821	0.0215	0.7036	0.1831	0.0197	0.2027	0.0000	816.5968	816.5968	0.0409	0.0000	817.4556
Waste						0.0000	0.0000		0.0000	0.0000	17.3679	0.0000	17.3679	1.0264	0.0000	38.9226
Water						0.0000	0.0000		0.0000	0.0000	5.1876	35.9435	41.1310	0.5344	0.0129	56.3586
<b>Total</b>	<b>2.0525</b>	<b>1.5544</b>	<b>6.4016</b>	<b>0.0102</b>	<b>0.6821</b>	<b>0.0274</b>	<b>0.7095</b>	<b>0.1831</b>	<b>0.0256</b>	<b>0.2087</b>	<b>22.5555</b>	<b>1,764.9919</b>	<b>1,787.5474</b>	<b>1.6408</b>	<b>0.0222</b>	<b>1,828.8907</b>

#### 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	1.4337	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003
Energy	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	912.4425	912.4425	0.0391	9.3000e-003	916.1442

Mobile	0.6103	1.4767	6.3315	9.7400e-003	0.6821	0.0215	0.7036	0.1831	0.0197	0.2027	0.0000	816.5968	816.5968	0.0409	0.0000	817.4556
Waste						0.0000	0.0000		0.0000	0.0000	17.3679	0.0000	17.3679	1.0264	0.0000	38.9226
Water						0.0000	0.0000		0.0000	0.0000	5.1876	35.9435	41.1310	0.5343	0.0129	56.3503
<b>Total</b>	<b>2.0525</b>	<b>1.5544</b>	<b>6.4016</b>	<b>0.0102</b>	<b>0.6821</b>	<b>0.0274</b>	<b>0.7095</b>	<b>0.1831</b>	<b>0.0256</b>	<b>0.2087</b>	<b>22.5555</b>	<b>1,764.9919</b>	<b>1,787.5474</b>	<b>1.6407</b>	<b>0.0222</b>	<b>1,828.8824</b>

	ROG	NOx	CO	SO2	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	0.01	0.09	0.00

## 4.0 Operational Detail - Mobile

### 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	0.6103	1.4767	6.3315	9.7400e-003	0.6821	0.0215	0.7036	0.1831	0.0197	0.2027	0.0000	816.5968	816.5968	0.0409	0.0000	817.4556
Unmitigated	0.6103	1.4767	6.3315	9.7400e-003	0.6821	0.0215	0.7036	0.1831	0.0197	0.2027	0.0000	816.5968	816.5968	0.0409	0.0000	817.4556

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	247.73	53.33	22.05	448,591	448,591

General Office Building	241.12	51.90	21.46	436,628	436,628
General Office Building	263.14	56.64	23.42	476,503	476,503
General Office Building	260.94	56.17	23.23	472,516	472,516
Other Asphalt Surfaces	0.00	0.00	0.00		
<b>Total</b>	<b>1,012.92</b>	<b>218.04</b>	<b>90.16</b>	<b>1,834,238</b>	<b>1,834,238</b>

### 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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.546249	0.062948	0.174600	0.125189	0.034587	0.004960	0.015036	0.022157	0.002053	0.003311	0.006538	0.000702	0.001670

### 5.0 Energy Detail

#### 4.4 Fleet Mix

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	827.9015	827.9015	0.0374	7.7500e-003	831.0886

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	827.9015	827.9015	0.0374	7.7500e-003	831.0886
NaturalGas Mitigated	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	84.5411	84.5411	1.6200e-003	1.5500e-003	85.0556
NaturalGas Unmitigated	8.5400e-003	0.0777	0.0652	4.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	84.5411	84.5411	1.6200e-003	1.5500e-003	85.0556

## 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					
Enclosed Parking with Elevator	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
General Office Building	377118	2.0300e-003	0.0185	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.1245	20.1245	3.9000e-004	3.7000e-004	20.2469
General Office Building	387450	2.0900e-003	0.0190	0.0160	1.1000e-004		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	20.6758	20.6758	4.0000e-004	3.8000e-004	20.8016
General Office Building	408114	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7785	21.7785	4.2000e-004	4.0000e-004	21.9111
General Office Building	411558	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	21.9623	21.9623	4.2000e-004	4.0000e-004	22.0960
Other Asphalt Surfaces	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
<b>Total</b>		<b>8.5400e-003</b>	<b>0.0777</b>	<b>0.0652</b>	<b>4.6000e-004</b>		<b>5.8900e-003</b>	<b>5.8900e-003</b>		<b>5.8900e-003</b>	<b>5.8900e-003</b>	<b>0.0000</b>	<b>84.5411</b>	<b>84.5411</b>	<b>1.6300e-003</b>	<b>1.5500e-003</b>	<b>85.0556</b>

### 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					

General Office Building	377118	2.0300e-003	0.0185	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.1245	20.1245	3.9000e-004	3.7000e-004	20.2469
General Office Building	387450	2.0900e-003	0.0190	0.0160	1.1000e-004		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	20.6758	20.6758	4.0000e-004	3.8000e-004	20.8016
General Office Building	408114	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7785	21.7785	4.2000e-004	4.0000e-004	21.9111
General Office Building	411558	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	21.9623	21.9623	4.2000e-004	4.0000e-004	22.0960
Other Asphalt Surfaces	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
Enclosed Parking with Elevator	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
<b>Total</b>		<b>8.5400e-003</b>	<b>0.0777</b>	<b>0.0652</b>	<b>4.6000e-004</b>		<b>5.8900e-003</b>	<b>5.8900e-003</b>		<b>5.8900e-003</b>	<b>5.8900e-003</b>	<b>0.0000</b>	<b>84.5411</b>	<b>84.5411</b>	<b>1.6300e-003</b>	<b>1.5500e-003</b>	<b>85.0556</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	514936	149.8008	6.7700e-003	1.4000e-003	150.3775
Enclosed Parking with Elevator	517632	150.5851	6.8100e-003	1.4100e-003	151.1648
General Office Building	431649	125.5716	5.6800e-003	1.1700e-003	126.0551
General Office Building	443475	129.0120	5.8300e-003	1.2100e-003	129.5086
General Office Building	467127	135.8926	6.1400e-003	1.2700e-003	136.4158
General Office Building	471069	137.0394	6.2000e-003	1.2800e-003	137.5669
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>827.9014</b>	<b>0.0374</b>	<b>7.7400e-003</b>	<b>831.0886</b>

#### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	514936	149.8008	6.7700e-003	1.4000e-003	150.3775
Enclosed Parking with Elevator	517632	150.5851	6.8100e-003	1.4100e-003	151.1648
General Office Building	431649	125.5716	5.6800e-003	1.1700e-003	126.0551
General Office Building	443475	129.0120	5.8300e-003	1.2100e-003	129.5086
General Office Building	467127	135.8926	6.1400e-003	1.2700e-003	136.4158
General Office Building	471069	137.0394	6.2000e-003	1.2800e-003	137.5669
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>827.9014</b>	<b>0.0374</b>	<b>7.7400e-003</b>	<b>831.0886</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4337	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003
Unmitigated	1.4337	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003



## 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	0.3279					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1053					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003
<b>Total</b>	<b>1.4337</b>	<b>5.0000e-005</b>	<b>4.9300e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>9.1600e-003</b>	<b>9.1600e-003</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>9.7400e-003</b>

### 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	0.3279					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1053					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	5.0000e-005	4.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.1600e-003	9.1600e-003	3.0000e-005	0.0000	9.7400e-003
<b>Total</b>	<b>1.4337</b>	<b>5.0000e-005</b>	<b>4.9300e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>9.1600e-003</b>	<b>9.1600e-003</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>9.7400e-003</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.1310	0.5343	0.0129	56.3503
Unmitigated	41.1310	0.5344	0.0129	56.3586

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	16.3515 / 10.0219	41.1310	0.5344	0.0129	56.3586
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>41.1310</b>	<b>0.5344</b>	<b>0.0129</b>	<b>56.3586</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	16.3515 / 10.0219	41.1310	0.5343	0.0129	56.3503
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>41.1310</b>	<b>0.5343</b>	<b>0.0129</b>	<b>56.3503</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.3679	1.0264	0.0000	38.9226
Unmitigated	17.3679	1.0264	0.0000	38.9226

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	85.56	17.3679	1.0264	0.0000	38.9226

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>17.3679</b>	<b>1.0264</b>	<b>0.0000</b>	<b>38.9226</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	85.56	17.3679	1.0264	0.0000	38.9226
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>17.3679</b>	<b>1.0264</b>	<b>0.0000</b>	<b>38.9226</b>

**9.0 Operational Offroad**

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

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