
APPENDIX B

CALEEMOD RESULTS

Elm Street Villas - Proposed Project - Bay Area AQMD Air District, Annual
Elm Street Villas - Operational Emissions and Energy Demand
 Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	8.00	Dwelling Unit	0.44	20,370.00	23

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	2.68	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Carbon Intensity Factor based on most current (The Climate Registry 2019 Utility-Specific Emissions Factors. Accessed March 24, 2021 at https://www.theclimateregistry.org/our-members/cris-public-reports/?fbclid=IwAR39xb1MI5TwfzSL_POAt8bfxdd8c1v_Pbi-haaJtXqyP7LG7ZcqKMmoNOo)

Land Use - Data from project plans

Energy adjustment - Per 2019 Title 24 BEES net zero energy efficiency requirements for single-family residential uses

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	14,400.00	20,370.00
tblLandUse	LotAcreage	2.60	0.44
tblProjectCharacteristics	CO2IntensityFactor	641.35	2.68

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	0.0957	6.8000e-004	0.0594	0.0000		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	0.0970	0.0970	9.0000e-005	0.0000	0.0994
Energy	1.4000e-004	1.1600e-003	4.9000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.4224	1.4224	8.4000e-004	1.9000e-004	1.5012
Mobile	0.0172	0.0761	0.1953	7.3000e-004	0.0650	5.9000e-004	0.0656	0.0174	5.6000e-004	0.0180	0.0000	66.7249	66.7249	2.3200e-003	0.0000	66.7829
Waste						0.0000	0.0000		0.0000	0.0000	0.4902	0.0000	0.4902	0.0290	0.0000	1.2145
Water						0.0000	0.0000		0.0000	0.0000	0.1654	4.7400e-003	0.1701	0.0170	4.1000e-004	0.7187
Total	0.1130	0.0780	0.2552	7.4000e-004	0.0650	1.0100e-003	0.0660	0.0174	9.8000e-004	0.0184	0.6556	68.2491	68.9047	0.0493	6.0000e-004	70.3166

4.0 Operational Detail - 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					
Unmitigated	0.0172	0.0761	0.1953	7.3000e-004	0.0650	5.9000e-004	0.0656	0.0174	5.6000e-004	0.0180	0.0000	66.7249	66.7249	2.3200e-003	0.0000	66.7829

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	76.16	79.28	68.96	174,554	174,554
Total	76.16	79.28	68.96	174,554	174,554

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

Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

	ROG	NOx	CO	SO2	Fugitive 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 Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0755	0.0755	8.2000e-004	1.7000e-004	0.1463
Natural Gas Unmitigated	1.4000e-004	1.1600e-003	4.9000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3469	1.3469	3.0000e-005	2.0000e-005	1.3549

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					
Single Family Housing	232521	1.2500e-003	0.0107	4.5600e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4082	12.4082	2.4000e-004	2.3000e-004	12.4819
Total		1.2500e-003	0.0107	4.5600e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4082	12.4082	2.4000e-004	2.3000e-004	12.4819

5.3 Energy by Land Use - Electricity

Unmitigated

Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Single Family Housing	62118.5	0.0755	8.2000e-004	1.7000e-004	0.1463
Total		0.0755	8.2000e-004	1.7000e-004	0.1463

6.0 Area Detail

	ROG	NOx	CO	SO2	Fugitive 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					
Unmitigated	0.0957	6.8000e-004	0.0594	0.0000		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	0.0970	0.0970	9.0000e-005	0.0000	0.0994

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	0.0143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0796					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	1.7900e-003	6.8000e-004	0.0594	0.0000		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	0.0970	0.0970	9.0000e-005	0.0000	0.0994
Total	0.0957	6.8000e-004	0.0594	0.0000		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	0.0970	0.0970	9.0000e-005	0.0000	0.0994

7.0 Water Detail

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Unmitigated	0.1701	0.0170	4.1000e-004	0.7187
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7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0.521232/ 0.308558	0.1701	0.0170	4.1000e-004	0.7187
Total		0.1701	0.0170	4.1000e-004	0.7187

8.0 Waste Detail

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	9.66	1.9609	0.1159	0.0000	4.8580
Total		1.9609	0.1159	0.0000	4.8580