

Hemlock Mixed Use Project - Santa Clara County, Annual

**Hemlock Mixed Use Project
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	19.13	1000sqft	0.00	19,130.00	55
Enclosed Parking with Elevator	67.00	Space	0.00	36,407.00	0
Apartments Mid Rise	48.00	Dwelling Unit	0.46	69,956.00	154

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on PG&E Greenhouse Gas Emissions Factors: Guidance for PG&E Customers

Land Use - Population based on 3.20 persons per household rate provided by CA Dept of Finance

Lot acreage and building square footage is based on project info

Vehicle Trips - based on trip gen info from traffic report

Energy Use -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	26,800.00	36,407.00

tblLandUse	LandUseSquareFeet	48,000.00	69,956.00
tblLandUse	LotAcreage	0.44	0.00
tblLandUse	LotAcreage	0.60	0.00
tblLandUse	LotAcreage	1.26	0.46
tblLandUse	Population	0.00	55.00
tblLandUse	Population	137.00	154.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	ST_TR	6.39	5.31
tblVehicleTrips	ST_TR	2.46	9.41
tblVehicleTrips	SU_TR	5.86	5.31
tblVehicleTrips	SU_TR	1.05	9.41
tblVehicleTrips	WD_TR	6.65	5.31
tblVehicleTrips	WD_TR	11.03	9.41

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	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155
Energy	3.9200e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	137.8385	137.8385	0.0106	2.7600e-003	138.9271
Mobile	0.0654	0.2827	0.7573	3.2700e-003	0.3789	2.1900e-003	0.3811	0.1014	2.0400e-003	0.1034	0.0000	300.9824	300.9824	8.6400e-003	0.0000	301.1984
Waste						0.0000	0.0000		0.0000	0.0000	8.0933	0.0000	8.0933	0.4783	0.0000	20.0507
Water						0.0000	0.0000		0.0000	0.0000	2.0709	6.5132	8.5841	0.2134	5.1600e-003	15.4545
Total	0.6011	0.3238	1.2871	3.8000e-003	0.3789	0.0287	0.4075	0.1014	0.0285	0.1299	12.3524	446.8167	459.1691	0.7150	8.0600e-003	479.4463

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	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155
Energy	3.9200e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	137.8385	137.8385	0.0106	2.7600e-003	138.9271
Mobile	0.0654	0.2827	0.7573	3.2700e-003	0.3789	2.1900e-003	0.3811	0.1014	2.0400e-003	0.1034	0.0000	300.9824	300.9824	8.6400e-003	0.0000	301.1984
Waste						0.0000	0.0000		0.0000	0.0000	8.0933	0.0000	8.0933	0.4783	0.0000	20.0507
Water						0.0000	0.0000		0.0000	0.0000	2.0709	6.5132	8.5841	0.2134	5.1600e-003	15.4545
Total	0.6011	0.3238	1.2871	3.8000e-003	0.3789	0.0287	0.4075	0.1014	0.0285	0.1299	12.3524	446.8167	459.1691	0.7150	8.0600e-003	479.4463

	ROG	NOx	CO	SO2	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

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	0.0654	0.2827	0.7573	3.2700e-003	0.3789	2.1900e-003	0.3811	0.1014	2.0400e-003	0.1034	0.0000	300.9824	300.9824	8.6400e-003	0.0000	301.1984

Unmitigated	0.0654	0.2827	0.7573	3.2700e-003	0.3789	2.1900e-003	0.3811	0.1014	2.0400e-003	0.1034	0.0000	300.9824	300.9824	8.6400e-003	0.0000	301.1984
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	255.00	255.00	255.00	588,950	588,950
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	179.99	179.99	179.99	430,142	430,142
Total	434.99	434.99	434.99	1,019,091	1,019,091

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
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Enclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
General Office Building	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

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	0.0000		0.0000	0.0000	0.0000	98.9975	98.9975	9.9000e-003	2.0500e-003	99.8554
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	98.9975	98.9975	9.9000e-003	2.0500e-003	99.8554
NaturalGas Mitigated	3.9200e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.8409	38.8409	7.4000e-004	7.1000e-004	39.0718
NaturalGas Unmitigated	3.9200e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.8409	38.8409	7.4000e-004	7.1000e-004	39.0718

5.2 Energy by Land Use - NaturalGas
Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	414694	2.2400e-003	0.0191	8.1300e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.1296	22.1296	4.2000e-004	4.1000e-004	22.2611
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	313158	1.6900e-003	0.0154	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.7113	16.7113	3.2000e-004	3.1000e-004	16.8106
Total		3.9300e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.8409	38.8409	7.4000e-004	7.2000e-004	39.0718

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	414694	2.2400e-003	0.0191	8.1300e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	22.1296	22.1296	4.2000e-004	4.1000e-004	22.2611

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	
General Office Building	313158	1.6900e-003	0.0154	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.7113	16.7113	3.2000e-004	3.1000e-004	16.8106
Total		3.9300e-003	0.0345	0.0210	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.8409	38.8409	7.4000e-004	7.2000e-004	39.0718

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	198161	26.0664	2.6100e-003	5.4000e-004	26.2923
Enclosed Parking with Elevator	213345	28.0638	2.8100e-003	5.8000e-004	28.3070
General Office Building	341088	44.8673	4.4900e-003	9.3000e-004	45.2561
Total		98.9975	9.9100e-003	2.0500e-003	99.8554

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	198161	26.0664	2.6100e-003	5.4000e-004	26.2923
Enclosed Parking with Elevator	213345	28.0638	2.8100e-003	5.8000e-004	28.3070
General Office Building	341088	44.8673	4.4900e-003	9.3000e-004	45.2561
Total		98.9975	9.9100e-003	2.0500e-003	99.8554

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	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155
Unmitigated	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155

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	0.0600					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1108	2.5500e-003	0.1525	3.0000e-004		0.0218	0.0218		0.0218	0.0218	2.1883	0.8988	3.0872	3.5200e-003	1.4000e-004	3.2178
Landscaping	0.0107	4.1000e-003	0.3563	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5837	0.5837	5.6000e-004	0.0000	0.5977
Total	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155

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	0.0600					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1108	2.5500e-003	0.1525	3.0000e-004		0.0218	0.0218		0.0218	0.0218	2.1883	0.8988	3.0872	3.5200e-003	1.4000e-004	3.2178
Landscaping	0.0107	4.1000e-003	0.3563	2.0000e-005		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	0.5837	0.5837	5.6000e-004	0.0000	0.5977
Total	0.5317	6.6500e-003	0.5088	3.2000e-004		0.0238	0.0238		0.0238	0.0238	2.1883	1.4826	3.6709	4.0800e-003	1.4000e-004	3.8155

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.5841	0.2134	5.1600e-003	15.4545
Unmitigated	8.5841	0.2134	5.1600e-003	15.4545

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	4.1259	0.1022	2.4700e-003	7.4178
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	3.40005 / 2.0839	4.4582	0.1111	2.6900e-003	8.0368
Total		8.5841	0.2134	5.1600e-003	15.4545

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.12739 / 1.97162	4.1259	0.1022	2.4700e-003	7.4178
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	3.40005 / 2.0839	4.4582	0.1111	2.6900e-003	8.0368
Total		8.5841	0.2134	5.1600e-003	15.4545

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
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	MT/yr			
Mitigated	8.0933	0.4783	0.0000	20.0507
Unmitigated	8.0933	0.4783	0.0000	20.0507

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	17.79	3.6112	0.2134	0.0000	8.9466
Total		8.0933	0.4783	0.0000	20.0507

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	22.08	4.4820	0.2649	0.0000	11.1041
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	17.79	3.6112	0.2134	0.0000	8.9466

Total		8.0933	0.4783	0.0000	20.0507
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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
