
APPENDIX C

CALEEMOD

South of Tioga Proposed ProjectWith LUT Reductions - Monterey Bay Unified APCD Air District, Annual

**South of Tioga Proposed ProjectWith LUT Reductions
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	637.00	Space	3.33	179,252.00	0
Other Asphalt Surfaces	109.35	1000sqft	2.51	109,350.00	0
Other Non-Asphalt Surfaces	121.17	1000sqft	2.78	121,170.00	0
Parking Lot	224.00	Space	2.02	89,600.00	0
Hotel	216.00	Room	1.06	313,632.00	0
Quality Restaurant	4.00	1000sqft	0.00	4,000.00	0
Apartments Mid Rise	320.00	Dwelling Unit	0.00	320,000.00	727
Condo/Townhouse High Rise	100.00	Dwelling Unit	0.00	100,000.00	227

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2024		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	209	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity reflects PG&E projections for 2020

Land Use - Adjusted per project plans (June 2017) and applicant information (Matt Nohr, Orosco Group,10-10-17.
 DU aboveParking. Total Footprint 3.33 acres
 DEIR project description avg. 2.27 persons per household (DOF 2017)

Trips and VMT -

Demolition -

Grading -

Vehicle Trips - Hotel and Condo Weekday trips adjusted per TIA (Higgins 2017)

Energy Use -

Land Use Change -

Sequestration - Baed on Preliminary Landscape Plan (Hirsch and Associates June 2017)

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - LUT-1, LUT-3 (CAPCOA Quantifying Greenhouse Gas Mitigation Measures 2010)

Area Mitigation - MBARD . recommendations

Water Mitigation - MPWMD Low Flow fixtures

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LandUseSquareFeet	254,800.00	179,252.00
tblLandUse	LotAcreage	5.73	3.33
tblLandUse	LotAcreage	7.20	1.06
tblLandUse	LotAcreage	0.09	0.00
tblLandUse	LotAcreage	8.42	0.00
tblLandUse	LotAcreage	1.56	0.00
tblLandUse	Population	915.00	727.00
tblLandUse	Population	286.00	227.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	209
tblSequestration	NumberOfNewTrees	0.00	189.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	6,062.00
tblVehicleTrips	WD_TR	4.18	5.81
tblVehicleTrips	WD_TR	8.17	8.92

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1977	2.8500	1.2588	4.8100e-003	0.3636	0.0842	0.4477	0.1353	0.0780	0.2133	0.0000	451.4282	451.4282	0.0568	0.0000	452.8476
2019	0.8425	6.3300	6.4747	0.0174	0.8247	0.1998	1.0246	0.2229	0.1882	0.4111	0.0000	1,589.9850	1,589.9850	0.1419	0.0000	1,593.5321
2020	5.0633	0.8915	0.9671	2.5400e-003	0.1157	0.0300	0.1457	0.0312	0.0281	0.0593	0.0000	230.8674	230.8674	0.0241	0.0000	231.4696
Maximum	5.0633	6.3300	6.4747	0.0174	0.8247	0.1998	1.0246	0.2229	0.1882	0.4111	0.0000	1,589.9850	1,589.9850	0.1419	0.0000	1,593.5321

Total Construction CO2e Emissions = 2,277.85 MT

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	3.5389	0.0500	4.3462	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1077	7.1077	6.8700e-003	0.0000	7.2795
Energy	0.0990	0.8892	0.6776	5.4000e-003		0.0684	0.0684		0.0684	0.0684	0.0000	1,487.9664	1,487.9664	0.0893	0.0326	1,499.9002
Mobile	1.4903	7.5515	16.4075	0.0541	4.2715	0.0448	4.3164	1.1469	0.0419	1.1887	0.0000	4,974.6016	4,974.6016	0.2367	0.0000	4,980.5178
Waste						0.0000	0.0000		0.0000	0.0000	63.9645	0.0000	63.9645	3.7802	0.0000	158.4693
Water						0.0000	0.0000		0.0000	0.0000	10.8051	23.4225	34.2276	1.1130	0.0269	70.0627
Total	5.1282	8.4908	21.4313	0.0597	4.2715	0.1373	4.4088	1.1469	0.1343	1.2812	74.7695	6,493.0982	6,567.8677	5.2261	0.0594	6,716.2294

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	3.5389	0.0500	4.3462	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1077	7.1077	6.8700e-003	0.0000		7.2795
Energy	0.0990	0.8892	0.6776	5.4000e-003		0.0684	0.0684		0.0684	0.0684	0.0000	1,487.9664	1,487.9664	0.0893	0.0326		1,499.9002
Mobile	1.4330	7.2019	15.2069	0.0492	3.8444	0.0409	3.8852	1.0322	0.0381	1.0703	0.0000	4,530.5764	4,530.5764	0.2212	0.0000		4,536.1052
Waste						0.0000	0.0000		0.0000	0.0000	63.9645	0.0000	63.9645	3.7802	0.0000		158.4693
Water						0.0000	0.0000		0.0000	0.0000	8.6440	19.9284	28.5724	0.8906	0.0215		57.2548
Total	5.0708	8.1412	20.2307	0.0549	3.8444	0.1333	3.9777	1.0322	0.1306	1.1628	72.6085	6,045.5788	6,118.1873	4.9881	0.0541		6,259.0090

	ROG	NOx	CO	SO2	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	1.12	4.12	5.60	8.11	10.00	2.89	9.78	10.00	2.76	9.24	2.89	6.89	6.85	4.55	8.99	6.81

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	133.8120
Vegetation Land Change	0.0000
Total	133.8120

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

	ROG	NOx	CO	SO2	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	1.4330	7.2019	15.2069	0.0492	3.8444	0.0409	3.8852	1.0322	0.0381	1.0703	0.0000	4,530.5764	4,530.5764	0.2212	0.0000	4,536.1052
Unmitigated	1.4903	7.5515	16.4075	0.0541	4.2715	0.0448	4.3164	1.1469	0.0419	1.1887	0.0000	4,974.6016	4,974.6016	0.2367	0.0000	4,980.5178

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,128.00	2,044.80	1875.20	5,992,249	5,393,024
Condo/Townhouse High Rise	581.00	431.00	343.00	1,514,113	1,362,702
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	1,926.72	1,769.04	1285.20	3,443,717	3,099,345
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	359.80	377.44	288.64	417,714	375,942
Total	4,995.52	4,622.28	3,792.04	11,367,792	10,231,013

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
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Condo/Townhouse High Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786

Hotel	1.3897e+07	0.0749	0.6812	0.5722	4.0900e-003		0.0518	0.0518		0.0518	0.0518	0.0000	741.5987	741.5987	0.0142	0.0136	746.0056
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
Other Non-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
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
Quality Restaurant	831520	4.4800e-003	0.0408	0.0342	2.4000e-004		3.1000e-003	3.1000e-003		3.1000e-003	3.1000e-003	0.0000	44.3731	44.3731	8.5000e-004	8.1000e-004	44.6368
Total		0.0990	0.8892	0.6776	5.3900e-003		0.0684	0.0684		0.0684	0.0684	0.0000	979.6060	979.6060	0.0188	0.0180	985.4273

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					
Apartments Mid Rise	2.76462e+006	0.0149	0.1274	0.0542	8.1000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	147.5309	147.5309	2.8300e-003	2.7000e-003	148.4076
Condo/Townhouse High Rise	863945	4.6600e-003	0.0398	0.0169	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	46.1034	46.1034	8.8000e-004	8.5000e-004	46.3774
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
Hotel	1.3897e+07	0.0749	0.6812	0.5722	4.0900e-003		0.0518	0.0518		0.0518	0.0518	0.0000	741.5987	741.5987	0.0142	0.0136	746.0056
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
Other Non-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
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
Quality Restaurant	831520	4.4800e-003	0.0408	0.0342	2.4000e-004		3.1000e-003	3.1000e-003		3.1000e-003	3.1000e-003	0.0000	44.3731	44.3731	8.5000e-004	8.1000e-004	44.6368
Total		0.0990	0.8892	0.6776	5.3900e-003		0.0684	0.0684		0.0684	0.0684	0.0000	979.6060	979.6060	0.0188	0.0180	985.4273

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Apartments Mid Rise	1.32107e+006	125.2387	0.0174	3.6000e-003	126.7446
Condo/Townhouse High Rise	438801	41.5987	5.7700e-003	1.1900e-003	42.0989
Enclosed Parking with Elevator	1.05042e+006	99.5804	0.0138	2.8600e-003	100.7777
Hotel	2.38988e+006	226.5622	0.0314	6.5000e-003	229.2863
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	31360	2.9730	4.1000e-004	9.0000e-005	3.0087
Quality Restaurant	130880	12.4075	1.7200e-003	3.6000e-004	12.5567
Total		508.3604	0.0705	0.0146	514.4729

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.32107e+006	125.2387	0.0174	3.6000e-003	126.7446
Condo/Townhouse High Rise	438801	41.5987	5.7700e-003	1.1900e-003	42.0989
Enclosed Parking with Elevator	1.05042e+006	99.5804	0.0138	2.8600e-003	100.7777
Hotel	2.38988e+006	226.5622	0.0314	6.5000e-003	229.2863
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	31360	2.9730	4.1000e-004	9.0000e-005	3.0087
Quality Restaurant	130880	12.4075	1.7200e-003	3.6000e-004	12.5567
Total		508.3604	0.0705	0.0146	514.4729

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	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	3.5389	0.0500	4.3462	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1077	7.1077	6.8700e-003	0.0000	7.2795

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	0.4941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9131					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	0.1317	0.0500	4.3462	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1077	7.1077	6.8700e-003	0.0000	7.2795
Total	3.5389	0.0500	4.3462	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1077	7.1077	6.8700e-003	0.0000	7.2795

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	28.5724	0.8906	0.0215	57.2548
Unmitigated	34.2276	1.1130	0.0269	70.0627

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.8493 / 13.1441	21.6708	0.6815	0.0165	43.6165
Condo/Townhouse High Rise	6.5154 / 4.10754	6.7721	0.2130	5.1500e-003	13.6302
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	5.47922 / 0.608802	4.7510	0.1790	4.3000e-003	10.5070
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	1.21413 / 0.077498	1.0337	0.0397	9.5000e-004	2.3090
Total		34.2276	1.1130	0.0269	70.0627

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.6794 / 13.1441	18.2089	0.5453	0.0132	35.7760
Condo/Townhouse High Rise	5.21232 / 4.10754	5.6903	0.1704	4.1300e-003	11.1800

Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	4.38338 / 0.608802	3.8412	0.1432	3.4400e-003	8.4465
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0.971308 / 0.077498	0.8321	0.0317	7.6000e-004	1.8524
Total		28.5724	0.8906	0.0215	57.2548

8.0 Waste Detail

8.1 Mitigation Measures Waste

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	63.9645	3.7802	0.0000	158.4693
Unmitigated	63.9645	3.7802	0.0000	158.4693

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	147.2	29.8803	1.7659	0.0000	74.0271
Condo/Townhouse High Rise	46	9.3376	0.5518	0.0000	23.1335
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	118.26	24.0057	1.4187	0.0000	59.4731
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.65	0.7409	0.0438	0.0000	1.8356
Total		63.9645	3.7802	0.0000	158.4693

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
		MT/yr			
Apartments Mid Rise	147.2	29.8803	1.7659	0.0000	74.0271
Condo/Townhouse High Rise	46	9.3376	0.5518	0.0000	23.1335
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Hotel	118.26	24.0057	1.4187	0.0000	59.4731
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.65	0.7409	0.0438	0.0000	1.8356
Total		63.9645	3.7802	0.0000	158.4693

11.0 Vegetation

Category	Total CO2	CH4	N2O	CO2e
	MT			
Unmitigated	133.8120	0.0000	0.0000	133.8120

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Others	0.2 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	189	133.8120	0.0000	0.0000	133.8120
Total		133.8120	0.0000	0.0000	133.8120

South of Tioga Project Existing Conditions - Monterey Bay Unified APCD Air District, Annual

**South of Tioga Project Existing Conditions
Monterey Bay Unified APCD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	82.50	1000sqft	1.89	82,500.00	0
Other Asphalt Surfaces	152.71	1000sqft	3.51	152,711.00	0
Other Non-Asphalt Surfaces	65.02	1000sqft	1.49	65,015.00	0
Parking Lot	88.00	Space	0.79	35,200.00	0
Health Club	22.00	1000sqft	0.51	22,000.00	0
Single Family Housing	3.00	Dwelling Unit	0.97	5,400.00	9
Strip Mall	12.00	1000sqft	0.28	12,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2018		
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 - Information provided by Matt Nohr (Orosco Group) 2017

Construction Phase - Existing conditions. No construction

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	152,710.00	152,711.00
tblLandUse	LandUseSquareFeet	65,020.00	65,015.00

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	0.6775	3.0300e-003	0.1658	2.6000e-004		0.0187	0.0187		0.0187	0.0187	1.8476	1.3606	3.2083	3.0300e-003	1.3000e-004	3.3233
Energy	0.0155	0.1405	0.1164	8.4000e-004		0.0107	0.0107		0.0107	0.0107	0.0000	452.3484	452.3484	0.0165	5.6100e-003	454.4311
Mobile	0.8003	3.6704	8.6197	0.0182	1.2237	0.0295	1.2532	0.3289	0.0279	0.3568	0.0000	1,669.2587	1,669.2587	0.1136	0.0000	1,672.0987
Waste						0.0000	0.0000		0.0000	0.0000	49.5826	0.0000	49.5826	2.9303	0.0000	122.8387
Water						0.0000	0.0000		0.0000	0.0000	6.8094	35.2785	42.0879	0.7010	0.0168	64.6322
Total	1.4933	3.8139	8.9019	0.0193	1.2237	0.0589	1.2826	0.3289	0.0573	0.3862	58.2396	2,158.2463	2,216.4859	3.7643	0.0226	2,317.3240



EMC PLANNING GROUP INC.
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To: Richard James, Project Manager
From: Sally Rideout, Principal Planner
Cc: File
Date: December 15, 2017

Re: South of Tioga Development Project – Air Quality and Greenhouse Gas
(GHG) Emissions Assessment

Project Description

The proposed project is a vesting tentative map for four parcels and related approvals for hotel and multi-family development on the 10.64 acre project site. The proposed development consists of 420 multifamily residential units and 216 hotel rooms, a 4,000 square foot restaurant, related landscaping and parking improvements, other related infrastructure, and off-site circulation and parking improvements. The proposed residential development would provide housing for 840 people based on 2.27 persons per household reported by the California Department of Finance (as cited by EMC Planning Group 2017). Off-site sources of emissions consist of roadway infrastructure improvements. Within the project site, approximately 0.9 acres of natural dune plant community would be preserved by conservation easements. The subject property is improved with a number of structures, occupied by single-family residential uses, commercial retail, light industrial, warehouse and gym uses, all of which would be demolished.

The project site is located within the North Central Coast Air Basin, which is within the jurisdiction of the Monterey Bay Air Resources District (air district). For the purposes of the California Environmental Quality Act (CEQA), an EIR is being prepared by the City of Sand City for the proposed project.

MEMORANDUM

Scope of Assessment

This assessment provides an estimate of the proposed project's proposed criteria air pollutant and greenhouse gas (GHG) emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 software, a modeling platform recommended by the California Air Resources Board and accepted by the air district. Model results are attached to this memorandum. For modeling purposes, data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicants and trip generation information from the project traffic report (Higgins 2017).

Emissions Model

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 CalEEMod platform allows calculations of both construction and operational criteria pollutant and GHG emissions from land use projects. The model also calculates indirect 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. CalEEMod also estimates changes in carbon sequestration potential due to changes in land use such as converting vegetation to built or paved surfaces, and from planting new trees.

Existing and Proposed Operational Emissions Sources

The size and type of existing and proposed sources of criteria air pollutant and GHG emissions on the project site and their respective CalEEMod land use default categories are presented in [Table 1, Project Characteristics](#).

Table 1 Project Characteristics¹

Emissions Sources	CalEEMod Land Use Category ²	Existing		Proposed	
		Size ³	Footprint ⁴	Size ³	Footprint ⁴
Residential	Single-family Residential	3 Units	0.97	0	0
Industrial/Warehouse	Light Industrial	82,500	1.89	0	0
Commercial Retail ⁵	Strip Mall	12,000	0.28	0	0
Gym	Health Club	22,000	0.51	0	0
Multifamily Residential	Apartments Mid-Rise	0	0	315 Units	N/A ⁶
Condominiums/Townhomes	Condo/Townhouse High Rise	0	0	105 Units	
Residential Parking Garage	Parking Garage with Elevator	0	N/A	637 Spaces	3.33
Hotel	Hotel	0	0	216 Rooms	1.06
Restaurant	Quality Restaurant	0	0	4,000	N/A
Parking Lot ⁷	Parking/Surface Parking Lot	88	0.79	224 Spaces	
Roadway Improvements ⁸	Parking/Other Asphalt Surfaces	152,7110	3.51	109,352	2.51
Patios, Courtyards, Sidewalks, etc.	Parking/Other Non-Asphalt Surfaces	65,015	1.49	48,519	1.11
Landscaping ⁹	Parking/Other Non-Asphalt Surfaces	143,662	N/A	72,656	1.66

Sources: BREEZE Software 2017, Whitson Engineers 2017, Higgins 2017, EMC Planning Group 2017.

Notes:

1. Amounts may vary due to rounding.
2. See model default land use category descriptions in the discussion of assumptions later in this document.
3. In square feet unless otherwise noted.
4. In acres unless otherwise noted.
5. Includes existing retail, plant nursery, and office uses.
6. Residential over parking garage footprint.
7. Includes access aisles.
8. Includes on- and off-site pavement.
9. Existing and proposed Landscaping are not sources of substantial emissions or sequestration potential. Proposed landscaping is included to capture construction emissions associated with development of the site.

Methodology

Unless otherwise noted, model inputs are based upon the information provided by the applicant regarding the proposed activities. Construction and operational GHG emissions estimates are derived from two modeling scenarios: Baseline (existing sources) and mitigated emissions. Changes in sequestration potential due to changes in natural communities on the

site from existing conditions and from the planting of new trees are also calculated based on information provided by the applicant and presented in the EIR.

Assumptions

Unless otherwise noted, data inputs for the project model are based on the following primary assumptions:

1. The assumed operational date for the proposed project is 2024.
2. Operational GHG emissions volumes from existing emissions sources on the site were estimated using the following CalEEMod default land use subtypes:
 - a. Emissions generated by existing residential units on the site are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Single Family Housing".
 - b. Emissions generated by existing industrial/warehouse uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use "General Light Industry", which are defined as free-standing facilities devoted to a single use. The facilities have an emphasis on activities other than manufacturing and typically have minimal office space.
 - c. Emissions generated by existing retail, office and plant nursery uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use "Strip Mall", which is defined as including a variety of retail shops and specializing in hard goods and services.
 - d. Emissions generated by existing gym uses are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use "Health Club", which is defined as a privately-owned facility primarily focusing on individual fitness or training.
3. Construction emissions and operational mobile-source and area-source emissions generated by the proposed project were estimated using the following CalEEMod default land use subtypes:
 - a. Emissions generated by the proposed 216-room hotel use are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Hotel", which is defined as a place of lodging that provides sleeping accommodations and supporting facilities such as

restaurants; cocktail lounges; meeting and banquet rooms or convention facilities; limited recreational facilities and other retail and service shops.

- b. Emissions generated by the proposed 315 multifamily apartment units are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Apartments Mid-rise", which are defined as apartments in rental buildings that have between 3 and 10 levels.
- c. Emissions generated by the proposed 105 condo/ownership residential units are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Condo/Townhouse High Rise", which are defined as ownership units that have three or more levels.
- d. Emissions generated by the proposed restaurant are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Quality Restaurant", which is defined as a high quality, full-service eating establishment with typical turnover rates of at least one hour or longer. Quality restaurants generally do not serve breakfast, some do not serve lunch; all serve dinner. This type of restaurant usually requires reservations and is generally not part of a chain. Patrons commonly wait to be seated, are served by a waiter, order from menus and pay for meals after they eat.
- e. Emissions from the proposed residential parking garages are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "enclosed Parking with Elevator", which is defined as an enclosed parking structure that may be above or below ground. It is not covered in asphalt. This land use will require lighting and ventilation, and will be more than one floor with an elevator.
- f. Emissions from the proposed hotel parking lots are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Parking Lot", which is defined as a surface parking lot typically covered with asphalt.
- g. Emissions from internal and off-site paved roadways and access routes are assumed to be generally similar to emissions that would be generated by the CalEEMod default land use subtype "Other Asphalt Surfaces", which is described as an asphalt area not used as a parking lot.
- h. Emissions from sidewalks, patios, equipment pads, or other non-asphalt impervious surfaces, and landscaping are assumed to be generally similar to

emissions that would be generated by the CalEEMod default land use subtype “Non-Asphalt Surfaces” which includes sidewalks, courtyards, patios, equipment pads, loading dock areas, etc., not composed of asphalt.

4. For the proposed project, the model’s default CO₂ intensity factor of 641 pounds/megawatt hour is adjusted to 349 pounds/megawatt hour to reflect Pacific Gas & Electric carbon intensity projections for its 2020 energy production profile, which is the horizon year for Pacific Gas & Electric’s current carbon intensity projections. The intensity factor has been falling, in significant part due to the increasing percentage of Pacific Gas & Electric’s energy portfolio obtained from renewable energy. Emissions intensity data is from Pacific Gas & Electric’s Greenhouse Gas Factors: Guidance for PG&E Customers, dated November 2015.

Modeling Scenarios

Baseline

The baseline for criteria air pollutant emissions that affect air quality are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. The baseline scenario consists of the emissions volumes that are generated by existing use of the project site (refer to Table 1).

Proposed Project

The proposed project modeling scenario assumes buildout in the year 2024.

Operational Emissions Data Inputs

Unmitigated operational emissions are modeled for baseline conditions (existing project site land use conditions) and for proposed project conditions. The proposed project conditions model run includes unmitigated operational emissions, as well as mitigated operational emissions that reflect adjustments made for applicable local regulations and for CalEEMod mitigations that are applicable to the project given its type and location.

Each air district (or county) assigns trip lengths for urban and rural settings, which are incorporated into the CalEEMod defaults. The air district default values for the North Central Coast Air Basin are the same regardless of a project’s location within the tri-county area; therefore, the model’s unmitigated defaults were set to “urban” and the jurisdictional authority parameters are based on the model defaults for the Monterey Bay Air Resources District. The model trip generation rates for condominium and apartment uses are adjusted per the average daily trips at project buildout identified in the traffic impact report (Higgins

2017, Exhibit 6). Model default trip generation rates are used for all other proposed land uses.

Modeling for the mitigated proposed project conditions includes adjustments for compliance with Monterey Peninsula Water Management District (water district) permitting requirements for the use of residential low-flow interior water fixtures, and compliance with air district recommendations for prohibitions of wood-burning stoves/fireplaces and its recommendations for the use of low VOC-emitting solvents, paints and other coatings.

Further adjustments were made using mitigation options included in CalEEMod. Descriptions of mitigation options included in CalEEMod and their related applicability criteria are included in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association 2010). Several of the traffic (land use and site enhancement) mitigations are applicable to the proposed project. Due to its density, type, and location, the proposed project qualifies for several reduction measures LUT-1, LUT-3, LUT-4, and LUT-5 as described in *Quantifying Greenhouse Gas Mitigation Measures*. Each of these measures has potential to reduce VMT associated with the proposed project, thereby reducing mobile source GHG emissions produced during its operation. However, for reasons described in *Quantifying Greenhouse Gas Mitigation Measures*, the total VMT reduction possible (as a percentage of total project VMT) from any one or more of these measures is capped in the model, in part based on the project location setting.

The project location setting for reducing VMT related emissions was adjusted to Suburban Center, as the project location closely aligns with the definition of this setting identified in *Quantifying Greenhouse Gas Mitigation Measures*. Given the model's internal VMT reduction cap, application of any two of the four measures noted above would yield a VMT reduction percentage that meets the cap. For modeling purposes, only the following two mitigation options were applied:

- Increase Density (LUT-1): The proposed project includes residential uses at high density (about 40 units/gross acre). Increased density reduces VMT and GHG emissions by reducing the distance people travel and provides greater options for the mode of travel they choose. Increased density also provides a foundation for implementing many other GHG reduction strategies, such as increased transit ridership.

- Increase Diversity of Development (Mixed Use) (LUT-3): Having a mix of land uses near each other can reduce VMT and GHG emissions because trip lengths between uses can be shorter and or trips can be taken by non-auto modes of transportation such as bicycling or walking. The proposed project includes multiple types of uses within the project boundary, and the project site is located adjacent to extensive retail and service commercial development and within one-quarter mile of Del Monte Beach/Monterey Bay (an open space/park use).

Construction Emissions Data Inputs

The CalEEMod program models construction GHG emissions associated with land use development projects and allows for the input of project-specific construction information including phasing and equipment information, if known. The modeling results for unmitigated construction emissions volumes are attached to this memorandum.

CalEEMod default construction parameters allow estimates of short-term construction GHG emissions based upon empirical data collected and analyzed by the California Air Resources Board, and use of the model's default construction emissions data is recommended by the air district if construction information is not yet available. The district also recommends amortizing the short-term GHG construction emissions over a 30-year time period to yield an annual emissions volume.

Information regarding type of construction equipment by phase for the proposed project was not yet available in detail sufficient to provide data inputs to the model; therefore, consistent with air district guidance, the model defaults were utilized for construction equipment, based on the project size. Information on off-site improvements (refer to Table 1), disposal of demolition spoils and cut and fill estimates are taken from the cut and fill exhibits prepared by Whitson Engineers for the proposed project. The model default for hauling trip length is 20 miles.

Carbon Sequestration Potential Data Inputs

CalEEMod also estimates a one-time only change in sequestration potential resulting from changes in natural communities, and also calculates a carbon "offset" based upon the number of net new trees proposed, averaged over a 20-year growth cycle. The proposed project would replace approximately 0.2 acres of coastal dune habitat with project improvements. There are no trees on the site. According to the preliminary landscape plans

189 new trees would be planted on the site (Hirsch and Associates 2017). An estimate of the carbon sequestration potential of these new trees is included in the assessment.

Results

Criteria air pollutant emissions results are reported in pounds per day. GHG construction and operational emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent (CO_{2e}). Detailed model results for criteria pollutant (winter) and annual GHG emissions are included as attachments to this assessment.

Operational Criteria Pollutant Emissions

Criteria pollutant emissions are greatest during the winter months in the North Central Coast Air Basin; therefore, only winter emissions are reported in this assessment. Unmitigated operational criteria pollutant emissions resulting from project operations are summarized in [Table 2, Unmitigated Operational Criteria Pollutant Winter Emissions \(Pounds per Day\)](#).

Table 2 Unmitigated Operational Criteria Pollutant Winter Emissions (Pounds per Day)¹

Emissions	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Suspended Particulate Matter (PM ₁₀)	Carbon Monoxide (CO)
Unmitigated	28.84	49.56	26.21	138.68

SOURCE: CalEEMod Winter Emissions Results, EMC Planning Group 2017

NOTES: Results may vary due to rounding.

GHG Emissions

Baseline GHG Emissions

Baseline (existing) uses on the site generate approximately 2,317.32 MT CO_{2e} of GHG emissions per year.

Construction GHG Emissions

Construction activity would generate an estimated 2,277.85 MT CO_{2e} of unmitigated GHG emissions. When averaged over a thirty-year operational project lifetime, the annual amortized emissions equal 75.93 MT CO_{2e} per year.

Operational GHG Emissions

The model results for both unmitigated and mitigated annual GHG emissions are attached to this memorandum. The proposed project would generate annual unmitigated operational GHG emissions of 6,716.23 MT CO₂e. As noted previously, mitigated results assume compliance with water district residential permit requirements to install low flow water fixtures, air district recommendations to restrict wood-burning appliances and to use low VOC-emitting paints and solvents, and application of CalEEMod mitigations LUT-1 and LUT-3. The mitigated emissions estimates are summarized in [Table 3, Annual Mitigated Operational GHG Emissions](#). Mitigated GHG emissions are projected 6,259.01 MT CO₂e per year.

Table 3 Annual Mitigated Operational GHG Emissions^{1,2}

Emissions Sources	Bio CO ₂	NBio CO ₂	CH ₄	N ₂ O	CO ₂ e
Area ³	0.00	7.11	<0.01	0.00	7.28
Energy	0.00	1,487.97	0.09	0.03	1,499.90
Mobile	0.00	4,530.58	0.22	0.00	4,536.11
Waste	63.97	0.00	3.78	0.00	156.47
Water ⁴	8.64	19.93	0.89	0.02	57.26
Total	72.61	6,489.60	5.00	0.05	6,259.01

Source: CalEEMod Results for Annual Emissions, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. MT CO₂e per year.
3. Results reflect minor co-benefit of emissions reductions from compliance with air district prohibitions on wood-burning appliances and recommendations for the use of low-VOC paints and solvents in maintenance activities.
4. Includes use of water conserving indoor fixtures required by the water district.

Carbon Sequestration Potential

Model results indicating the change in carbon sequestration potential on the site is shown in Section 2.3 of the model results for annual emissions. The estimated sequestration potential gained by planting trees on the site outweighs the loss of sequestration potential from the proposed change in vegetation. The model estimates a gain in sequestration potential equal to 133.81 MT CO₂e over the lifetime of the project. Averaged over a thirty-year lifetime, the annual gain in sequestration potential would be equivalent to 4.46 MT CO₂e per year. This amount is deducted from the project's annual operational GHG emissions.

GHG Emissions Attributable to the Proposed Project

The total GHG emissions that would be attributable to the proposed project consist of amortized construction emissions and the amortized annual loss of carbon sequestration potential added to the mitigated operational emissions, less the estimated baseline emissions generated by existing uses on the site. The net mitigated GHG emissions of 4,013.16 MT CO_{2e} per year attributable to the proposed project are presented in [Table 4, Summary of Mitigated GHG Emissions Attributable to the Project \(MT CO_{2e} per Year\)](#).

Table 4 Summary of Mitigated GHG Emissions Attributable to the Project (MT CO_{2e} per Year)¹

Annual Operations ²	Amortized Construction	Annual Project Emissions ³	Existing Emissions ⁴	Sequestration Potential	Project Net Emissions
6,259.01	75.93	6,334.94	<2,317.32 >	<4.46>	4,013.16

Source: CalEEMod Results, EMC Planning Group 2017

Notes:

1. Results may vary due to rounding.
2. Mitigated Annual MT CO_{2e} (See Table 3)
3. Amortized unmitigated construction and mitigated operational emissions.
4. <Brackets> indicate deductions.

Sources

1. BREEZE Software. A Division of Trinity Consultants. California Emissions Estimator (CalEEMod) Version 2016.3.2. October 2017. Available online at: <http://www.aqmd.gov/caleemod.htm>
2. BREEZE Software. A Division of Trinity Consultants. CalEEMod User's Guide (Version 2016.3.2). October 2017. Available online at: <http://www.aqmd.gov/caleemod/guide.htm>
3. Monterey Bay Air Resources District (MBARD), 2008. CEQA Air Quality Guidelines. Available online at: <http://mbard.org>
4. Monterey Bay Air Resources District (MBARD), 2016. Guidelines for Implementing the California Environmental Quality Act. Available online at: <http://mbard.org>
5. Pacific Gas & Electric. Greenhouse Gas Factors: Guidance for PG&E Customers. November 2015. Accessed online September 29, 2016 at: https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

6. Higgins. 2017. *West End Sand City Traffic Impact Analysis Final Draft Report*, Sand City, CA.
7. EMC Planning Group. 2017. *Administrative Draft EIR South of Tioga*. Sand City, CA.
8. Matt Nohr. October 16, 2017. Email communication with consultant Aug 17, 2017. Subject: West End South of Tioga. Sand City, CA
9. TCA Architects. June 5, 2017. *West End Sand City Entitlement Package*. Sand City, CA.
10. Whitson Engineers. June 5, 2017. *West End Sand City Tentative Map Cut and Fill Exhibit*. Sand City, CA.
11. California Air Pollution Control Officers Association. August 2010. *Quantifying Greenhouse Gas Mitigation Measures*.

South of Tioga Proposed Project - Monterey Bay Unified APCD Air District, Summer

**South of Tioga Proposed Project
Monterey Bay Unified APCD Air District, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	637.00	Space	3.33	179,252.00	0
Other Asphalt Surfaces	109.35	1000sqft	2.51	109,350.00	0
Other Non-Asphalt Surfaces	121.17	1000sqft	2.78	121,170.00	0
Parking Lot	224.00	Space	2.02	89,600.00	0
Hotel	216.00	Room	1.06	313,632.00	0
Quality Restaurant	4.00	1000sqft	0.00	4,000.00	0
Apartments Mid Rise	320.00	Dwelling Unit	0.00	320,000.00	727
Condo/Townhouse High Rise	100.00	Dwelling Unit	0.00	100,000.00	227

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2024		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	209	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity reflects PG&E projections for 2020

Land Use - Adjusted per project plans (June 2017) and applicant information (Matt Nohr, Orosco Group,10-10-17.

DU aboveParking. Total Footprint 3.33 acres

DEIR project description avg. 2.27 persons per household (DOF 2017)

Trips and VMT -

Demolition -

Grading -

Vehicle Trips - Hotel and Condo Weekday trips adjusted per TIA (Higgins 2017)

Energy Use -

Land Use Change -

Sequestration - Baed on Preliminary Landscape Plan (Hirsch and Associates June 2017)

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - MBARD . recommendations

Energy Mitigation - .

Water Mitigation - MPWMD Low Flow fixtures

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LandUseSquareFeet	254,800.00	179,252.00
tblLandUse	LotAcreage	5.73	3.33
tblLandUse	LotAcreage	7.20	1.06
tblLandUse	LotAcreage	0.09	0.00
tblLandUse	LotAcreage	8.42	0.00
tblLandUse	LotAcreage	1.56	0.00
tblLandUse	Population	915.00	727.00
tblLandUse	Population	286.00	227.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	209
tblSequestration	NumberOfNewTrees	0.00	189.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	6,062.00
tblVehicleTrips	WD_TR	4.18	5.81
tblVehicleTrips	WD_TR	8.17	8.92

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	lb/day										lb/day					
Area	19.7231	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925	0.0000	62.6790	62.6790	0.0606	0.0000	64.1943
Energy	0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419
Mobile	9.3230	42.2346	95.3852	0.3252	25.3803	0.2578	25.6381	6.7963	0.2407	7.0370		32,977.5803	32,977.5803	1.4973		33,015.0116
Total	29.5885	47.5071	133.8678	0.3566	25.3803	0.8250	26.2053	6.7963	0.8079	7.6042	0.0000	38,957.1402	38,957.1402	1.6713	0.1085	39,031.2478

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	lb/day										lb/day					
Mitigated	9.3230	42.2346	95.3852	0.3252	25.3803	0.2578	25.6381	6.7963	0.2407	7.0370		32,977.5803	32,977.5803	1.4973		33,015.0116
Unmitigated	9.3230	42.2346	95.3852	0.3252	25.3803	0.2578	25.6381	6.7963	0.2407	7.0370		32,977.5803	32,977.5803	1.4973		33,015.0116

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,128.00	2,044.80	1875.20	5,992,249	5,992,249
Condo/Townhouse High Rise	581.00	431.00	343.00	1,514,113	1,514,113
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	1,926.72	1,769.04	1285.20	3,443,717	3,443,717
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	359.80	377.44	288.64	417,714	417,714
Total	4,995.52	4,622.28	3,792.04	11,367,792	11,367,792

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	7.30	7.50	44.00	18.80	37.20	86	11	3
Condo/Townhouse High Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Condo/Townhouse High Rise	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Enclosed Parking with Elevator	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Hotel	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Other Asphalt Surfaces	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Other Non-Asphalt Surfaces	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Parking Lot	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Quality Restaurant	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786

5.0 Energy Detail

Historical Energy Use: N

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
	lb/day										lb/day					
NaturalGas Unmitigated	0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Apartments Mid Rise	7574.31	0.0817	0.6980	0.2970	4.4600e-003		0.0564	0.0564		0.0564	0.0564		891.0956	891.0956	0.0171	0.0163	896.3909
Condo/Townhouse High Rise	2366.97	0.0255	0.2181	0.0928	1.3900e-003		0.0176	0.0176		0.0176	0.0176		278.4674	278.4674	5.3400e-003	5.1100e-003	280.1222
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
Hotel	38074.1	0.4106	3.7328	3.1355	0.0224		0.2837	0.2837		0.2837	0.2837		4,479.3018	4,479.3018	0.0859	0.0821	4,505.9201
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
Other Non-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
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
Quality Restaurant	2278.14	0.0246	0.2234	0.1876	1.3400e-003		0.0170	0.0170		0.0170	0.0170		268.0161	268.0161	5.1400e-003	4.9100e-003	269.6088
Total		0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419

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	lb/day										lb/day					
Mitigated	19.7231	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925	0.0000	62.6790	62.6790	0.0606	0.0000	64.1943

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	lb/day										lb/day					
Architectural Coating	2.7071					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.9622					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	1.0538	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925		62.6790	62.6790	0.0606		64.1943
Total	19.7231	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925	0.0000	62.6790	62.6790	0.0606	0.0000	64.1943

South of Tioga Proposed Project - Monterey Bay Unified APCD Air District, Winter

South of Tioga Proposed Project
Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	637.00	Space	3.33	179,252.00	0
Other Asphalt Surfaces	109.35	1000sqft	2.51	109,350.00	0
Other Non-Asphalt Surfaces	121.17	1000sqft	2.78	121,170.00	0
Parking Lot	224.00	Space	2.02	89,600.00	0
Hotel	216.00	Room	1.06	313,632.00	0
Quality Restaurant	4.00	1000sqft	0.00	4,000.00	0
Apartments Mid Rise	320.00	Dwelling Unit	0.00	320,000.00	727
Condo/Townhouse High Rise	100.00	Dwelling Unit	0.00	100,000.00	227

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	53
Climate Zone	4	Operational Year	2024		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	209	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity reflects PG&E projections for 2020

Land Use - Adjusted per project plans (June 2017) and applicant information (Matt Nohr, Orosco Group,10-10-17.
 DU aboveParking. Total Footprint 3.33 acres
 DEIR project description avg. 2.27 persons per household (DOF 2017)

Trips and VMT -

Demolition -

Grading -

Vehicle Trips - Hotel and Condo Weekday trips adjusted per TIA (Higgins 2017)

Energy Use -

Land Use Change -

Sequestration - Baed on Preliminary Landscape Plan (Hirsch and Associates June 2017)

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - MBARD . recommendations

Energy Mitigation - .

Water Mitigation - MPWMD Low Flow fixtures

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LandUseSquareFeet	254,800.00	179,252.00
tblLandUse	LotAcreage	5.73	3.33
tblLandUse	LotAcreage	7.20	1.06
tblLandUse	LotAcreage	0.09	0.00
tblLandUse	LotAcreage	8.42	0.00
tblLandUse	LotAcreage	1.56	0.00
tblLandUse	Population	915.00	727.00
tblLandUse	Population	286.00	227.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	209
tblSequestration	NumberOfNewTrees	0.00	189.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	HaulingTripNumber	0.00	6,062.00
tblVehicleTrips	WD_TR	4.18	5.81

tblVehicleTrips	WD_TR	8.17	8.92
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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	lb/day										lb/day					
Area	19.7231	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925	0.0000	62.6790	62.6790	0.0606	0.0000	64.1943
Energy	0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419
Mobile	8.5706	44.2912	100.1943	0.3088	25.3803	0.2593	25.6396	6.7963	0.2422	7.0384		31,304.9425	31,304.9425	1.5519		31,343.7397
Total	28.8361	49.5638	138.6770	0.3402	25.3803	0.8265	26.2068	6.7963	0.8094	7.6056	0.0000	37,284.5024	37,284.5024	1.7259	0.1085	37,359.9760

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	lb/day										lb/day					
Unmitigated	8.5706	44.2912	100.1943	0.3088	25.3803	0.2593	25.6396	6.7963	0.2422	7.0384		31,304.9425	31,304.9425	1.5519		31,343.7397

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,128.00	2,044.80	1875.20	5,992,249	5,992,249
Condo/Townhouse High Rise	581.00	431.00	343.00	1,514,113	1,514,113
Enclosed Parking with Elevator	0.00	0.00	0.00		
Hotel	1,926.72	1,769.04	1285.20	3,443,717	3,443,717
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	359.80	377.44	288.64	417,714	417,714
Total	4,995.52	4,622.28	3,792.04	11,367,792	11,367,792

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
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Condo/Townhouse High Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Condo/Townhouse High Rise	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Enclosed Parking with Elevator	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Hotel	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Other Asphalt Surfaces	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Other Non-Asphalt Surfaces	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Parking Lot	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786
Quality Restaurant	0.552293	0.026858	0.203057	0.118966	0.019018	0.004857	0.019364	0.041479	0.003068	0.002366	0.006793	0.001094	0.000786

5.0 Energy Detail

Historical Energy Use: N

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
	lb/day										lb/day					
NaturalGas Unmitigated	0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Apartments Mid Rise	7574.31	0.0817	0.6980	0.2970	4.4600e-003		0.0564	0.0564		0.0564	0.0564		891.0956	891.0956	0.0171	0.0163	896.3909
Condo/Townhouse High Rise	2366.97	0.0255	0.2181	0.0928	1.3900e-003		0.0176	0.0176		0.0176	0.0176		278.4674	278.4674	5.3400e-003	5.1100e-003	280.1222
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
Hotel	38074.1	0.4106	3.7328	3.1355	0.0224		0.2837	0.2837		0.2837	0.2837		4,479.3018	4,479.3018	0.0859	0.0821	4,505.9201
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
Other Non-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
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
Quality Restaurant	2278.14	0.0246	0.2234	0.1876	1.3400e-003		0.0170	0.0170		0.0170	0.0170		268.0161	268.0161	5.1400e-003	4.9100e-003	269.6088
Total		0.5424	4.8723	3.7130	0.0296		0.3747	0.3747		0.3747	0.3747		5,916.8809	5,916.8809	0.1134	0.1085	5,952.0419

6.0 Area Detail

6.1 Mitigation Measures Area

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	lb/day										lb/day					
Architectural Coating	2.7071					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.9622					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	1.0538	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925		62.6790	62.6790	0.0606		64.1943
Total	19.7231	0.4003	34.7697	1.8400e-003		0.1925	0.1925		0.1925	0.1925	0.0000	62.6790	62.6790	0.0606	0.0000	64.1943

7.0 Water Detail
