

APPENDIX E

Air Quality and GHG Emissions Calculations

Available on CD & City Website at:

<http://www.cityofsantacruz.com/government/city-departments/planning-and-community-development-2/environmental-documents>

Santa Cruz Downtown Recovery Plan

CalEEMod Version 2016.3.1 Outputs

Annual, Summer, Winter, Mitigation Report

Santa Cruz Downtown Recovery Plan - Santa Cruz County, Annual

Santa Cruz Downtown Recovery Plan

Santa Cruz County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.19	1000sqft	0.05	2,191.00	0
Enclosed Parking with Elevator	1,991.00	Space	0.00	796,400.00	0
Apartments Mid Rise	390.00	Dwelling Unit	6.00	390,000.00	944
Condo/Townhouse	321.00	Dwelling Unit	5.00	321,000.00	777

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Adjusted population based on average City household size of 2.42 persons per du

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Water And Wastewater - Water demand based on City Water Department

Energy Mitigation - Residences and commercial uses that comply with 2016 Title 24 are 28% and 5% more efficient than 2013 Title 24, respectively.

Weighted average for project = 28%

Waste Mitigation - 75% waste diversion consistent with AB 341

APPENDIX E

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	2,190.00	2,191.00
tblLandUse	LandUseSquareFeet	2,190.00	2,191.00
tblLandUse	LotAcreage	17.92	0.00
tblLandUse	LotAcreage	10.26	6.00
tblLandUse	LotAcreage	20.06	5.00
tblLandUse	Population	1,115.00	944.00
tblLandUse	Population	918.00	777.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	169.00	0.00
tblVehicleTrips	ST_TR	6.39	3.83
tblVehicleTrips	ST_TR	5.67	4.39
tblVehicleTrips	ST_TR	2.46	1.47
tblVehicleTrips	SU_TR	5.86	3.52
tblVehicleTrips	SU_TR	4.84	3.75
tblVehicleTrips	SU_TR	1.05	0.63
tblVehicleTrips	WD_TR	6.65	3.99
tblVehicleTrips	WD_TR	5.81	4.50
tblVehicleTrips	WD_TR	11.03	6.57
tblWater	IndoorWaterUseRate	25,410,069.99	16,370,250.00
tblWater	IndoorWaterUseRate	20,914,442.22	13,473,975.00
tblWater	IndoorWaterUseRate	389,236.91	39,438.00
tblWater	OutdoorWaterUseRate	16,019,391.95	543,037.50
tblWater	OutdoorWaterUseRate	13,185,191.84	543,037.50
tblWater	OutdoorWaterUseRate	238,564.56	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	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148
Energy	0.0729	0.6228	0.2659	3.9700e-003		0.0503	0.0503		0.0503	0.0503	0.0000	2,221.9672	2,221.9672	0.1306	0.0374	2,236.3673
Mobile	0.3995	1.8629	5.2304	0.0250	3.1397	0.0124	3.1521	0.8410	0.0115	0.8526	0.0000	2,297.2355	2,297.2355	0.0616	0.0000	2,298.7764
Waste						0.0000	0.0000		0.0000	0.0000	66.8043	0.0000	66.8043	3.9480	0.0000	165.5049
Water						0.0000	0.0000		0.0000	0.0000	9.4807	27.9922	37.4729	0.9759	0.0234	68.8574
Total	3.9929	2.5702	12.8217	0.0293	3.1397	0.1035	3.2432	0.8410	0.1026	0.9437	76.2850	4,559.2215	4,635.5066	5.1277	0.0608	4,781.8208

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	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148
Energy	0.0553	0.4724	0.2017	3.0100e-003		0.0382	0.0382		0.0382	0.0382	0.0000	1,813.3595	1,813.3595	0.1090	0.0304	1,825.1446
Mobile	0.3995	1.8629	5.2304	0.0250	3.1397	0.0124	3.1521	0.8410	0.0115	0.8526	0.0000	2,297.2355	2,297.2355	0.0616	0.0000	2,298.7764
Waste						0.0000	0.0000		0.0000	0.0000	16.7011	0.0000	16.7011	0.9870	0.0000	41.3762
Water						0.0000	0.0000		0.0000	0.0000	9.4807	27.9922	37.4729	0.9759	0.0234	68.8574
Total	3.9753	2.4198	12.7575	0.0284	3.1397	0.0914	3.2311	0.8410	0.0905	0.9315	26.1818	4,150.6139	4,176.7957	2.1451	0.0539	4,246.4694

	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	0.44	5.85	0.50	3.27	0.00	11.74	0.37	0.00	11.84	1.29	65.68	8.96	9.90	58.17	11.45	11.20

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	0.3995	1.8629	5.2304	0.0250	3.1397	0.0124	3.1521	0.8410	0.0115	0.8526	0.0000	2,297.2355	2,297.2355	0.0616	0.0000	2,298.7764
Unmitigated	0.3995	1.8629	5.2304	0.0250	3.1397	0.0124	3.1521	0.8410	0.0115	0.8526	0.0000	2,297.2355	2,297.2355	0.0616	0.0000	2,298.7764

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,556.10	1,493.70	1372.80	4,381,832	4,381,832
Condo/Townhouse	1,444.50	1,409.19	1203.75	4,047,830	4,047,830
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	14.39	3.22	1.38	26,130	26,130
Total	3,014.99	2,906.11	2,577.93	8,455,792	8,455,792

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	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
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
General Office Building	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Enclosed Parking with Elevator	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

Apartments Mid Rise	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Condo/Townhouse	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	1,266.3759	1,266.3759	0.0985	0.0204	1,274.9106
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,500.8983	1,500.8983	0.1167	0.0242	1,511.0135
NaturalGas Mitigated	0.0553	0.4724	0.2017	3.0100e-003		0.0382	0.0382		0.0382	0.0382	0.0000	546.9836	546.9836	0.0105	0.0100	550.2340
NaturalGas Unmitigated	0.0729	0.6228	0.2659	3.9700e-003		0.0503	0.0503		0.0503	0.0503	0.0000	721.0689	721.0689	0.0138	0.0132	725.3539

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	4.46144e+006	0.0241	0.2056	0.0875	1.3100e-003		0.0166	0.0166		0.0166	0.0166	0.0000	238.0792	238.0792	4.5600e-003	4.3600e-003	239.4940
Condo/Townhouse	9.00834e+006	0.0486	0.4151	0.1766	2.6500e-003		0.0336	0.0336		0.0336	0.0336	0.0000	480.7191	480.7191	9.2100e-003	8.8100e-003	483.5758
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	42549.2	2.3000e-004	2.0900e-003	1.7500e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2706	2.2706	4.0000e-005	4.0000e-005	2.2841

APPENDIX E

Total		0.0729	0.6228	0.2659	3.9700e-003		0.0503	0.0503		0.0503	0.0503	0.0000	721.0689	721.0689	0.0138	0.0132	725.3538
-------	--	--------	--------	--------	-------------	--	--------	--------	--	--------	--------	--------	----------	----------	--------	--------	----------

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	3.49779e+006	0.0189	0.1612	0.0686	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	186.6555	186.6555	3.5800e-003	3.4200e-003	187.7647
Condo/Townhouse	6.72104e+006	0.0362	0.3097	0.1318	1.9800e-003		0.0250	0.0250		0.0250	0.0250	0.0000	358.6602	358.6602	6.8700e-003	6.5800e-003	360.7915
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	31255.1	1.7000e-004	1.5300e-003	1.2900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6679	1.6679	3.0000e-005	3.0000e-005	1.6778
Total		0.0553	0.4724	0.2017	3.0200e-003		0.0382	0.0382		0.0382	0.0382	0.0000	546.9836	546.9836	0.0105	0.0100	550.2340

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.76334e+006	298.2438	0.0232	4.8000e-003	300.2538
Condo/Townhouse	1.71488e+006	290.0474	0.0226	4.6700e-003	292.0021
Enclosed Parking with Elevator	5.36774e+006	907.8748	0.0706	0.0146	913.9934
General Office Building	27979.1	4.7323	3.7000e-004	8.0000e-005	4.7642
Total		1,500.8983	0.1167	0.0242	1,511.0135

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.66216e+006	281.1304	0.0219	4.5200e-003	283.0251
Condo/Townhouse	1.64265e+006	277.8300	0.0216	4.4700e-003	279.7024
Enclosed Parking with Elevator	4.15848e+006	703.3471	0.0547	0.0113	708.0872
General Office Building	24054.6	4.0685	3.2000e-004	7.0000e-005	4.0959
Total		1,266.3759	0.0985	0.0204	1,274.9106

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	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148
Unmitigated	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148

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	0.4630					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8369					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	0.2207	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148
Total	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148

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	0.4630					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8369					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	0.2207	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148
Total	3.5205	0.0845	7.3254	3.9000e-004		0.0408	0.0408		0.0408	0.0408	0.0000	12.0267	12.0267	0.0115	0.0000	12.3148

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.4729	0.9759	0.0234	68.8574
Unmitigated	37.4729	0.9759	0.0234	68.8574

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.3702 / 0.543037	20.4969	0.5346	0.0128	37.6891
Condo/Townhouse	13.474 / 0.543037	16.9274	0.4400	0.0106	31.0783
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.039438 / 0	0.0486	1.2900e-003	3.0000e-005	0.0900
Total		37.4729	0.9759	0.0234	68.8574

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
--	--------------------	-----------	-----	-----	------

Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.3702 / 0.543037	20.4969	0.5346	0.0128	37.6891
Condo/Townhouse	13.474 / 0.543037	16.9274	0.4400	0.0106	31.0783
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.039438 / 0	0.0486	1.2900e-003	3.0000e-005	0.0900
Total		37.4729	0.9759	0.0234	68.8574

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.7011	0.9870	0.0000	41.3762
Unmitigated	66.8043	3.9480	0.0000	165.5049

8.2 Waste by Land Use

Unmitigated

Waste Disposed	Total CO2	CH4	N2O	CO2e
----------------	-----------	-----	-----	------

Land Use	tons	MT/yr			
Apartments Mid Rise	179.4	36.4166	2.1522	0.0000	90.2205
Condo/Townhouse	147.66	29.9737	1.7714	0.0000	74.2584
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.04	0.4141	0.0245	0.0000	1.0259
Total		66.8043	3.9480	0.0000	165.5049

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	44.85	9.1041	0.5380	0.0000	22.5551
Condo/Townhouse	36.915	7.4934	0.4429	0.0000	18.5646
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.51	0.1035	6.1200e-003	0.0000	0.2565
Total		16.7011	0.9870	0.0000	41.3762

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Santa Cruz Downtown Recovery Plan - Santa Cruz County, Summer

Santa Cruz Downtown Recovery Plan

Santa Cruz County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.19	1000sqft	0.05	2,191.00	0
Enclosed Parking with Elevator	1,991.00	Space	0.00	796,400.00	0
Apartments Mid Rise	390.00	Dwelling Unit	6.00	390,000.00	944
Condo/Townhouse	321.00	Dwelling Unit	5.00	321,000.00	777

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Adjusted population based on average City household size of 2.42 persons per du

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Water And Wastewater - Water demand based on City Water Department

Energy Mitigation - Residences and commercial uses that comply with 2016 Title 24 are 28% and 5% more efficient than 2013 Title 24, respectively.

Weighted average for project = 28%

Waste Mitigation - 75% waste diversion consistent with AB 341

APPENDIX E

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	2,190.00	2,191.00
tblLandUse	LandUseSquareFeet	2,190.00	2,191.00
tblLandUse	LotAcreage	17.92	0.00
tblLandUse	LotAcreage	10.26	6.00
tblLandUse	LotAcreage	20.06	5.00
tblLandUse	Population	1,115.00	944.00
tblLandUse	Population	918.00	777.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	169.00	0.00
tblVehicleTrips	ST_TR	6.39	3.83
tblVehicleTrips	ST_TR	5.67	4.39
tblVehicleTrips	ST_TR	2.46	1.47
tblVehicleTrips	SU_TR	5.86	3.52
tblVehicleTrips	SU_TR	4.84	3.75
tblVehicleTrips	SU_TR	1.05	0.63
tblVehicleTrips	WD_TR	6.65	3.99
tblVehicleTrips	WD_TR	5.81	4.50
tblVehicleTrips	WD_TR	11.03	6.57
tblWater	IndoorWaterUseRate	25,410,069.99	16,370,250.00
tblWater	IndoorWaterUseRate	20,914,442.22	13,473,975.00
tblWater	IndoorWaterUseRate	389,236.91	39,438.00
tblWater	OutdoorWaterUseRate	16,019,391.95	543,037.50
tblWater	OutdoorWaterUseRate	13,185,191.84	543,037.50
tblWater	OutdoorWaterUseRate	238,564.56	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	lb/day										lb/day					
Area	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Energy	0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0799	4,381.1822
Mobile	2.4401	10.1922	30.1498	0.1463	18.3647	0.0701	18.4348	4.9046	0.0651	4.9697		14,831.5765	14,831.5765	0.3827		14,841.1427
Total	22.6861	14.2805	90.2095	0.1712	18.3647	0.6719	19.0366	4.9046	0.6669	5.5715	0.0000	19,292.9342	19,292.9342	0.5678	0.0799	19,330.9233

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	lb/day										lb/day					
Area	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Energy	0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475
Mobile	2.4401	10.1922	30.1498	0.1463	18.3647	0.0701	18.4348	4.9046	0.0651	4.9697		14,831.5765	14,831.5765	0.3827		14,841.1427
Total	22.5897	13.4566	89.8576	0.1660	18.3647	0.6053	18.9700	4.9046	0.6003	5.5049	0.0000	18,241.4480	18,241.4480	0.5476	0.0606	18,273.1886

	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	0.42	5.77	0.39	3.07	0.00	9.91	0.35	0.00	9.99	1.20	0.00	5.45	5.45	3.55	24.15	5.47

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	lb/day										lb/day					
Mitigated	2.4401	10.1922	30.1498	0.1463	18.3647	0.0701	18.4348	4.9046	0.0651	4.9697		14,831.5765	14,831.5765	0.3827		14,841.1427
Unmitigated	2.4401	10.1922	30.1498	0.1463	18.3647	0.0701	18.4348	4.9046	0.0651	4.9697		14,831.5765	14,831.5765	0.3827		14,841.1427

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,556.10	1,493.70	1372.80	4,381,832	4,381,832
Condo/Townhouse	1,444.50	1,409.19	1203.75	4,047,830	4,047,830
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	14.39	3.22	1.38	26,130	26,130
Total	3,014.99	2,906.11	2,577.93	8,455,792	8,455,792

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	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
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
General Office Building	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Enclosed Parking with Elevator	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Apartments Mid Rise	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Condo/Townhouse	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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					
NaturalGas Mitigated	0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475
NaturalGas Unmitigated	0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0799	4,381.1822

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	lb/day										lb/day					
Apartments Mid Rise	12223.1	0.1318	1.1264	0.4793	7.1900e-003		0.0911	0.0911		0.0911	0.0911		1,438.0133	1,438.0133	0.0276	0.0264	1,446.5587
Condo/Townhouse	24680.4	0.2662	2.2745	0.9679	0.0145		0.1839	0.1839		0.1839	0.1839		2,903.5730	2,903.5730	0.0557	0.0532	2,920.8275
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	116.573	1.2600e-003	0.0114	9.6000e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		13.7145	13.7145	2.6000e-004	2.5000e-004	13.7960
Total		0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0798	4,381.1822

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	lb/day										lb/day					
Apartments Mid Rise	9.58299	0.1034	0.8831	0.3758	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.4108	1,127.4108	0.0216	0.0207	1,134.1105
Condo/Townhouse	18.4138	0.1986	1.6970	0.7221	0.0108		0.1372	0.1372		0.1372	0.1372		2,166.3296	2,166.3296	0.0415	0.0397	2,179.2030
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	0.0856303	9.2000e-004	8.4000e-003	7.0500e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.0742	10.0742	1.9000e-004	1.8000e-004	10.1340
Total		0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475

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	lb/day										lb/day					
Mitigated	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Unmitigated	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

6.2 Area by SubCategory

Unmitigated

APPENDIX E

	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	2.5371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5444					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	1.7652	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260		106.0569	106.0569	0.1017		108.5983
Total	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

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	2.5371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5444					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	1.7652	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260		106.0569	106.0569	0.1017		108.5983
Total	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Santa Cruz Downtown Recovery Plan - Santa Cruz County, Winter

Santa Cruz Downtown Recovery Plan

Santa Cruz County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.19	1000sqft	0.05	2,191.00	0
Enclosed Parking with Elevator	1,991.00	Space	0.00	796,400.00	0
Apartments Mid Rise	390.00	Dwelling Unit	6.00	390,000.00	944
Condo/Townhouse	321.00	Dwelling Unit	5.00	321,000.00	777

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Adjusted population based on average City household size of 2.42 persons per du

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Water And Wastewater - Water demand based on City Water Department

Energy Mitigation - Residences and commercial uses that comply with 2016 Title 24 are 28% and 5% more efficient than 2013 Title 24, respectively.

Weighted average for project = 28%

Waste Mitigation - 75% waste diversion consistent with AB 341

APPENDIX E

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	2,190.00	2,191.00
tblLandUse	LandUseSquareFeet	2,190.00	2,191.00
tblLandUse	LotAcreage	17.92	0.00
tblLandUse	LotAcreage	10.26	6.00
tblLandUse	LotAcreage	20.06	5.00
tblLandUse	Population	1,115.00	944.00
tblLandUse	Population	918.00	777.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	169.00	0.00
tblVehicleTrips	ST_TR	6.39	3.83
tblVehicleTrips	ST_TR	5.67	4.39
tblVehicleTrips	ST_TR	2.46	1.47
tblVehicleTrips	SU_TR	5.86	3.52
tblVehicleTrips	SU_TR	4.84	3.75
tblVehicleTrips	SU_TR	1.05	0.63
tblVehicleTrips	WD_TR	6.65	3.99
tblVehicleTrips	WD_TR	5.81	4.50
tblVehicleTrips	WD_TR	11.03	6.57
tblWater	IndoorWaterUseRate	25,410,069.99	16,370,250.00
tblWater	IndoorWaterUseRate	20,914,442.22	13,473,975.00
tblWater	IndoorWaterUseRate	389,236.91	39,438.00
tblWater	OutdoorWaterUseRate	16,019,391.95	543,037.50
tblWater	OutdoorWaterUseRate	13,185,191.84	543,037.50
tblWater	OutdoorWaterUseRate	238,564.56	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	lb/day										lb/day					
Area	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Energy	0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0799	4,381.1822
Mobile	2.2278	10.6877	30.8462	0.1407	18.3647	0.0702	18.4349	4.9046	0.0652	4.9698		14,256.9926	14,256.9926	0.3909		14,266.7649
Total	22.4737	14.7760	90.9059	0.1655	18.3647	0.6720	19.0367	4.9046	0.6670	5.5716	0.0000	18,718.3503	18,718.3503	0.5760	0.0799	18,756.5454

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	lb/day										lb/day					
Area	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Energy	0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475
Mobile	2.2278	10.6877	30.8462	0.1407	18.3647	0.0702	18.4349	4.9046	0.0652	4.9698		14,256.9926	14,256.9926	0.3909		14,266.7649
Total	22.3773	13.9521	90.5541	0.1603	18.3647	0.6054	18.9701	4.9046	0.6004	5.5050	0.0000	17,666.8641	17,666.8641	0.5559	0.0606	17,698.8107

	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	0.43	5.58	0.39	3.18	0.00	9.91	0.35	0.00	9.98	1.20	0.00	5.62	5.62	3.50	24.15	5.64

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	lb/day										lb/day					
Mitigated	2.2278	10.6877	30.8462	0.1407	18.3647	0.0702	18.4349	4.9046	0.0652	4.9698		14,256.99 26	14,256.99 26	0.3909		14,266.76 49
Unmitigated	2.2278	10.6877	30.8462	0.1407	18.3647	0.0702	18.4349	4.9046	0.0652	4.9698		14,256.99 26	14,256.99 26	0.3909		14,266.76 49

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,556.10	1,493.70	1372.80	4,381,832	4,381,832
Condo/Townhouse	1,444.50	1,409.19	1203.75	4,047,830	4,047,830
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	14.39	3.22	1.38	26,130	26,130
Total	3,014.99	2,906.11	2,577.93	8,455,792	8,455,792

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	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
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
General Office Building	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Enclosed Parking with Elevator	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Apartments Mid Rise	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515
Condo/Townhouse	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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					
NaturalGas Mitigated	0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475
NaturalGas Unmitigated	0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0799	4,381.1822

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	lb/day										lb/day					
Apartments Mid Rise	12223.1	0.1318	1.1264	0.4793	7.1900e-003		0.0911	0.0911		0.0911	0.0911		1,438.0133	1,438.0133	0.0276	0.0264	1,446.5587
Condo/Townhouse	24680.4	0.2662	2.2745	0.9679	0.0145		0.1839	0.1839		0.1839	0.1839		2,903.5730	2,903.5730	0.0557	0.0532	2,920.8275
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	116.573	1.2600e-003	0.0114	9.6000e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004		13.7145	13.7145	2.6000e-004	2.5000e-004	13.7960
Total		0.3992	3.4123	1.4568	0.0218		0.2758	0.2758		0.2758	0.2758		4,355.3008	4,355.3008	0.0835	0.0798	4,381.1822

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	lb/day										lb/day					
Apartments Mid Rise	9.58299	0.1034	0.8831	0.3758	5.6400e-003		0.0714	0.0714		0.0714	0.0714		1,127.4108	1,127.4108	0.0216	0.0207	1,134.1105
Condo/Townhouse	18.4138	0.1986	1.6970	0.7221	0.0108		0.1372	0.1372		0.1372	0.1372		2,166.3296	2,166.3296	0.0415	0.0397	2,179.2030
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	0.0856303	9.2000e-004	8.4000e-003	7.0500e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.0742	10.0742	1.9000e-004	1.8000e-004	10.1340
Total		0.3029	2.5885	1.1050	0.0165		0.2092	0.2092		0.2092	0.2092		3,303.8146	3,303.8146	0.0633	0.0606	3,323.4475

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	lb/day										lb/day					
Mitigated	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983
Unmitigated	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

6.2 Area by SubCategory

Unmitigated

APPENDIX E

	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	2.5371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5444					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	1.7652	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260		106.0569	106.0569	0.1017		108.5983
Total	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

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	2.5371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5444					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	1.7652	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260		106.0569	106.0569	0.1017		108.5983
Total	19.8467	0.6759	58.6029	3.1100e-003		0.3260	0.3260		0.3260	0.3260	0.0000	106.0569	106.0569	0.1017	0.0000	108.5983

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

CalEEMod Version: CalEEMod.2016.3.1

Date: 5/24/2017 11:34 AM

Santa Cruz Downtown Recovery Plan
Santa Cruz County, Mitigation Report

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.63	15.63	15.63	15.65	15.63
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	24.14	24.15	24.15	23.93	24.14	24.14	0.00	24.14	24.14	24.11	24.07	24.14
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.09	0.31		
No	Land Use	Improve Walkability Design	0.00			

APPENDIX E

No	Land Use	Improve Destination Accessibility	0.00		
No	Land Use	Increase Transit Accessibility	0.25		
No	Land Use	Integrate Below Market Rate Housing	0.00		
	Land Use	Land Use SubTotal	0.00		
No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			

APPENDIX E

	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	28.00	
Yes	Install High Efficiency Lighting	16.00	
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00

Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	

**Santa Cruz Downtown Recovery Plan –
Reduced Commercial Uses**

CalEEMod Version 2016.3.1 Outputs

Annual, Summer, Winter, Mitigation Report

Santa Cruz DRP - Reduced Commercial - Santa Cruz County, Annual

Santa Cruz DRP - Reduced Commercial
Santa Cruz County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	14.69	1000sqft	0.34	14,693.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Amount of commercial uses reduced

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Energy Use - Historical energy use factors assumed for commercial uses to be removed

Water And Wastewater - Water use based on City Water Department

Waste Mitigation - 75% waste diversion consistent with AB 341

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	14,690.00	14,693.00
tblLandUse	LandUseSquareFeet	14,690.00	14,693.00

APPENDIX E

tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	1.00	0.00
tblVehicleTrips	ST_TR	42.04	25.10
tblVehicleTrips	SU_TR	20.43	12.20
tblVehicleTrips	WD_TR	44.32	26.46
tblWater	IndoorWaterUseRate	1,088,125.34	969,738.00
tblWater	OutdoorWaterUseRate	666,915.53	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	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004
Energy	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	34.3875	34.3875	2.4300e-003	5.6000e-004	34.6159
Mobile	0.0378	0.1777	0.3923	1.6900e-003	0.2035	8.9000e-004	0.2044	0.0545	8.2000e-004	0.0553	0.0000	155.0775	155.0775	4.5300e-003	0.0000	155.1907
Waste						0.0000	0.0000		0.0000	0.0000	3.1301	0.0000	3.1301	0.1850	0.0000	7.7547
Water						0.0000	0.0000		0.0000	0.0000	0.3077	0.8875	1.1952	0.0317	7.6000e-004	2.2135
Total	0.1059	0.1815	0.3957	1.7100e-003	0.2035	1.1800e-003	0.2047	0.0545	1.1100e-003	0.0556	3.4378	190.3529	193.7906	0.2236	1.3200e-003	199.7752

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	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004
Energy	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	34.3875	34.3875	2.4300e-003	5.6000e-004	34.6159
Mobile	0.0378	0.1777	0.3923	1.6900e-003	0.2035	8.9000e-004	0.2044	0.0545	8.2000e-004	0.0553	0.0000	155.0775	155.0775	4.5300e-003	0.0000	155.1907
Waste						0.0000	0.0000		0.0000	0.0000	0.7825	0.0000	0.7825	0.0463	0.0000	1.9387
Water						0.0000	0.0000		0.0000	0.0000	0.3077	0.8875	1.1952	0.0317	7.6000e-004	2.2135
Total	0.1059	0.1815	0.3957	1.7100e-003	0.2035	1.1800e-003	0.2047	0.0545	1.1100e-003	0.0556	1.0902	190.3529	191.4430	0.0849	1.3200e-003	193.9591

	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	68.29	0.00	1.21	62.04	0.00	2.91

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	0.0378	0.1777	0.3923	1.6900e-003	0.2035	8.9000e-004	0.2044	0.0545	8.2000e-004	0.0553	0.0000	155.0775	155.0775	4.5300e-003	0.0000	155.1907
Unmitigated	0.0378	0.1777	0.3923	1.6900e-003	0.2035	8.9000e-004	0.2044	0.0545	8.2000e-004	0.0553	0.0000	155.0775	155.0775	4.5300e-003	0.0000	155.1907

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	388.70	368.72	179.22	548,125	548,125
Total	388.70	368.72	179.22	548,125	548,125

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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: Y

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	30.1692	30.1692	2.3500e-003	4.9000e-004	30.3725
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.1692	30.1692	2.3500e-003	4.9000e-004	30.3725
NaturalGas Mitigated	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434
NaturalGas Unmitigated	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434

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					
Strip Mall	79048.3	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434
Total		4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434

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					
Strip Mall	79048.3	4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434

Total		4.3000e-004	3.8700e-003	3.2500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.2183	4.2183	8.0000e-005	8.0000e-005	4.2434
-------	--	-------------	-------------	-------------	-------------	--	-------------	-------------	--	-------------	-------------	--------	--------	--------	-------------	-------------	--------

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	178373	30.1692	2.3500e-003	4.9000e-004	30.3725
Total		30.1692	2.3500e-003	4.9000e-004	30.3725

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	178373	30.1692	2.3500e-003	4.9000e-004	30.3725
Total		30.1692	2.3500e-003	4.9000e-004	30.3725

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	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004
Unmitigated	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004

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	0.0102					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004
Total	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004

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	0.0102					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0574					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004
Total	0.0676	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.9000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.1952	0.0317	7.6000e-004	2.2135
Unmitigated	1.1952	0.0317	7.6000e-004	2.2135

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	0.969738 / 0	1.1952	0.0317	7.6000e-004	2.2135
Total		1.1952	0.0317	7.6000e-004	2.2135

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	0.96973870	1.1952	0.0317	7.6000e-004	2.2135
Total		1.1952	0.0317	7.6000e-004	2.2135

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7825	0.0463	0.0000	1.9387
Unmitigated	3.1301	0.1850	0.0000	7.7547

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	15.42	3.1301	0.1850	0.0000	7.7547
Total		3.1301	0.1850	0.0000	7.7547

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	3.855	0.7825	0.0463	0.0000	1.9387
Total		0.7825	0.0463	0.0000	1.9387

9.0 Operational Offroad

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

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Santa Cruz DRP - Reduced Commercial - Santa Cruz County, Summer

Santa Cruz DRP - Reduced Commercial
Santa Cruz County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	14.69	1000sqft	0.34	14,693.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5	Operational Year	2040		
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Amount of commercial uses reduced

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Energy Use - Historical energy use factors assumed for commercial uses to be removed

Water And Wastewater - Water use based on City Water Department

Waste Mitigation - 75% waste diversion consistent with AB 341

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	14,690.00	14,693.00
tblLandUse	LandUseSquareFeet	14,690.00	14,693.00
tblOffRoadEquipment	UsageHours	6.00	0.00

APPENDIX E

tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	1.00	0.00
tblVehicleTrips	ST_TR	42.04	25.10
tblVehicleTrips	SU_TR	20.43	12.20
tblVehicleTrips	WD_TR	44.32	26.46
tblWater	IndoorWaterUseRate	1,088,125.34	969,738.00
tblWater	OutdoorWaterUseRate	666,915.53	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	lb/day										lb/day					
Area	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Energy	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Mobile	0.2513	1.0449	2.3423	0.0105	1.2667	5.3200e-003	1.2720	0.3383	4.9300e-003	0.3432		1,065.1892	1,065.1892	0.0296		1,065.9295
Total	0.6242	1.0661	2.3616	0.0106	1.2667	6.9400e-003	1.2736	0.3383	6.5500e-003	0.3448		1,090.6713	1,090.6713	0.0301	4.7000e-004	1,091.5632

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	lb/day										lb/day					
Area	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Energy	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Mobile	0.2513	1.0449	2.3423	0.0105	1.2667	5.3200e-003	1.2720	0.3383	4.9300e-003	0.3432		1,065.1892	1,065.1892	0.0296		1,065.9295
Total	0.6242	1.0661	2.3616	0.0106	1.2667	6.9400e-003	1.2736	0.3383	6.5500e-003	0.3448		1,090.6713	1,090.6713	0.0301	4.7000e-004	1,091.5632

	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	lb/day										lb/day					
Mitigated	0.2513	1.0449	2.3423	0.0105	1.2667	5.3200e-003	1.2720	0.3383	4.9300e-003	0.3432		1,065.1892	1,065.1892	0.0296		1,065.9295
Unmitigated	0.2513	1.0449	2.3423	0.0105	1.2667	5.3200e-003	1.2720	0.3383	4.9300e-003	0.3432		1,065.1892	1,065.1892	0.0296		1,065.9295

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	388.70	368.72	179.22	548,125	548,125
Total	388.70	368.72	179.22	548,125	548,125

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: Y

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	lb/day										lb/day					

NaturalGas Mitigated	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
NaturalGas Unmitigated	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Strip Mall	216.571	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Total		2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Strip Mall	0.216571	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Total		2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Mitigated	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Unmitigated	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-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	lb/day										lb/day					
Architectural Coating	0.0560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Total	0.3706	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003

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	0.0560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Total	0.3706	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Santa Cruz DRP - Reduced Commercial - Santa Cruz County, Winter

Santa Cruz DRP - Reduced Commercial

Santa Cruz County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	14.69	1000sqft	0.34	14,693.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	1.8	Precipitation Freq (Days)	61
Climate Zone	5			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	372.88	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 adjusted based on 50% RPS by year 2030

Land Use - Amount of commercial uses reduced

Construction Phase - Modeling operations only

Vehicle Trips - Trip rates from TIA adjusted based on City-recommended 40% reduction based on mixed-use in Downtown Santa Cruz

Energy Use - Historical energy use factors assumed for commercial uses to be removed

Water And Wastewater - Water use based on City Water Department

Waste Mitigation - 75% waste diversion consistent with AB 341

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	14,690.00	14,693.00
tblLandUse	LandUseSquareFeet	14,690.00	14,693.00
tblOffRoadEquipment	UsageHours	6.00	0.00

APPENDIX E

tblProjectCharacteristics	CO2IntensityFactor	641.35	372.88
tblProjectCharacteristics	OperationalYear	2018	2040
tblTripsAndVMT	WorkerTripNumber	1.00	0.00
tblVehicleTrips	ST_TR	42.04	25.10
tblVehicleTrips	SU_TR	20.43	12.20
tblVehicleTrips	WD_TR	44.32	26.46
tblWater	IndoorWaterUseRate	1,088,125.34	969,738.00
tblWater	OutdoorWaterUseRate	666,915.53	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	lb/day										lb/day					
Area	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Energy	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Mobile	0.2229	1.0772	2.4956	0.0101	1.2667	5.3300e-003	1.2720	0.3383	4.9500e-003	0.3432		1,022.2697	1,022.2697	0.0308		1,023.0394
Total	0.5958	1.0985	2.5149	0.0102	1.2667	6.9500e-003	1.2736	0.3383	6.5700e-003	0.3449		1,047.7519	1,047.7519	0.0313	4.7000e-004	1,048.6731

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	lb/day										lb/day					
Area	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Energy	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Mobile	0.2229	1.0772	2.4956	0.0101	1.2667	5.3300e-003	1.2720	0.3383	4.9500e-003	0.3432		1,022.2697	1,022.2697	0.0308		1,023.0394
Total	0.5958	1.0985	2.5149	0.0102	1.2667	6.9500e-003	1.2736	0.3383	6.5700e-003	0.3449		1,047.7519	1,047.7519	0.0313	4.7000e-004	1,048.6731

	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	lb/day										lb/day					
Mitigated	0.2229	1.0772	2.4956	0.0101	1.2667	5.3300e-003	1.2720	0.3383	4.9500e-003	0.3432		1,022.2697	1,022.2697	0.0308		1,023.0394
Unmitigated	0.2229	1.0772	2.4956	0.0101	1.2667	5.3300e-003	1.2720	0.3383	4.9500e-003	0.3432		1,022.2697	1,022.2697	0.0308		1,023.0394

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	388.70	368.72	179.22	548,125	548,125
Total	388.70	368.72	179.22	548,125	548,125

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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.607849	0.022927	0.205901	0.103922	0.009867	0.003828	0.022612	0.014637	0.001269	0.001293	0.004540	0.000840	0.000515

5.0 Energy Detail

Historical Energy Use: Y

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	lb/day										lb/day					
NaturalGas Mitigated	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
NaturalGas Unmitigated	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Strip Mall	216.571	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Total		2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Strip Mall	0.216571	2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303
Total		2.3400e-003	0.0212	0.0178	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003		25.4789	25.4789	4.9000e-004	4.7000e-004	25.6303

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	lb/day										lb/day					
Mitigated	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Unmitigated	0.3705	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-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	lb/day										lb/day					
Architectural Coating	0.0560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Total	0.3706	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003

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	0.0560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4000e-004	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003
Total	0.3706	1.0000e-005	1.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.2100e-003	3.2100e-003	1.0000e-005		3.4200e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

CalEEMod Version: CalEEMod.2016.3.1

Date: 5/24/2017 11:43 AM

Santa Cruz DRP - Reduced Commercial
Santa Cruz County, Mitigation Report

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			

APPENDIX E

No	Land Use	Improve Destination Accessibility	0.00		
No	Land Use	Increase Transit Accessibility	0.25		
No	Land Use	Integrate Below Market Rate Housing	0.00		
	Land Use	Land Use SubTotal	0.00		
No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00		
No	Transit Improvements	Expand Transit Network	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge			
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program			

APPENDIX E

	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00

Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services	75.00
Percent Reduction in Waste Disposed	