

APPENDIX J

AIR QUALITY

APPENDIX J-1

URBEMIS COMBINED ANNUAL EMISSIONS REPORT, JANUARY 2011

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.41	0.57	0.89	0.00	0.00	0.00	670.70
TOTALS (tons/year, mitigated)	0.30	0.45	0.71	0.00	0.00	0.00	536.71
Percent Reduction	26.83	21.05	20.22	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	9.96	10.70	98.55	0.10	9.76	2.05	10,008.13
TOTALS (tons/year, mitigated)	9.38	10.06	92.69	0.09	9.17	1.93	9,413.91
Percent Reduction	5.82	5.98	5.95	10.00	6.05	5.85	5.94

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	10.37	11.27	99.44	0.10	9.76	2.05	10,678.83
TOTALS (tons/year, mitigated)	9.68	10.51	93.40	0.09	9.17	1.93	9,950.62
Percent Reduction	6.65	6.74	6.07	10.00	6.05	5.85	6.82

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

ROG NOx CO SO2 PM10 Dust PM10 Exhaust PM10 PM2.5 Dust PM2.5 Exhaust PM2.5 CO2

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2013	3.32	2.64	4.36	0.00	0.02	0.17	0.19	0.01	0.16	0.17	605.50
Building 11/01/2012-03/31/2014	0.47	2.19	4.00	0.00	0.02	0.14	0.15	0.01	0.13	0.13	553.86
Building Off Road Diesel	0.38	1.81	1.33	0.00	0.00	0.12	0.12	0.00	0.11	0.11	211.57
Building Vendor Trips	0.02	0.24	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01	67.83
Building Worker Trips	0.08	0.13	2.45	0.00	0.01	0.01	0.02	0.00	0.01	0.01	274.47
Coating 01/01/2013-03/31/2014	2.77	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Architectural Coating	2.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Asphalt 10/01/2013-12/31/2013	0.08	0.45	0.33	0.00	0.00	0.04	0.04	0.00	0.03	0.03	48.33
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.07	0.42	0.26	0.00	0.00	0.04	0.04	0.00	0.03	0.03	37.35
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.24
Paving Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74
2014	0.78	0.50	0.93	0.00	0.00	0.03	0.03	0.00	0.03	0.03	136.66
Building 11/01/2012-03/31/2014	0.11	0.50	0.92	0.00	0.00	0.03	0.03	0.00	0.03	0.03	135.85
Building Off Road Diesel	0.08	0.42	0.32	0.00	0.00	0.03	0.03	0.00	0.02	0.02	51.88
Building Vendor Trips	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.63
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.01	0.00	0.00	0.00	67.34
Coating 01/01/2013-03/31/2014	0.68	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Architectural Coating	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/1/2012 - 8/1/2012 - Default Fine Site Grading Description

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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.56	0.47	0.00	0.00	0.00	669.94
Hearth							
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.34						
TOTALS (tons/year, unmitigated)	0.41	0.57	0.89	0.00	0.00	0.00	670.70

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.03	0.45	0.38	0.00	0.00	0.00	535.95
Hearth							
Landscape	0.03	0.00	0.33	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.24						
TOTALS (tons/year, mitigated)	0.30	0.45	0.71	0.00	0.00	0.00	536.71

Area Source Mitigation Measures Selected

<u>Mitigation Description</u>	<u>Percent Reduction</u>
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Nonresidential Interior Use Low VOC Coating	30.00
For Nonresidential Exterior Use Low VOC Coating	30.00

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Free-standing discount store	6.86	7.41	68.25	0.07	6.75	1.42	6,926.12
Home improvement superstore	2.78	2.90	26.71	0.03	2.63	0.55	2,698.00
General office building	0.32	0.39	3.59	0.00	0.38	0.08	384.01
TOTALS (tons/year, unmitigated)	9.96	10.70	98.55	0.10	9.76	2.05	10,008.13

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Free-standing discount store	6.46	6.97	64.19	0.06	6.35	1.34	6,514.89
Home improvement superstore	2.62	2.73	25.12	0.03	2.47	0.52	2,537.81
General office building	0.30	0.36	3.38	0.00	0.35	0.07	361.21
TOTALS (tons/year, mitigated)	9.38	10.06	92.69	0.09	9.17	1.93	9,413.91

Operational Mitigation Options Selected

Residential Mitigation Measures

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was NOT selected.

Nonresidential Mitigation Measures

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%

Inputs Selected:

The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 23

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 10

The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.37%

Inputs Selected:

The Number of Intersections per Square Mile is 50

The Percent of Streets with Sidewalks on One Side is 10%

The Percent of Streets with Sidewalks on Both Sides is 90%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 80%

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2014 Season: Annual

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Free-standing discount store		56.02	1000 sq ft	174.17	9,757.00	40,647.24
Home improvement superstore		29.80	1000 sq ft	130.22	3,880.56	15,821.96
General office building		19.90	1000 sq ft	17.50	348.25	2,258.77
					13,985.81	58,727.97

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.8	0.4	99.4	0.2
Light Truck < 3750 lbs	12.7	0.8	96.8	2.4
Light Truck 3751-5750 lbs	19.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	50.0	50.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Free-standing discount store				2.0	1.0	97.0
Home improvement superstore				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults

APPENDIX J-2

URBEMIS COMBINED SUMMER EMISSIONS REPORT, JANUARY 2011

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\I&R Docs\2010\10-146 Petaluma Deer Creek AQ\PetalumaDeerCreek 2020.urb924

Project Name: Petaluma Deer Creek

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>
2012 TOTALS (lbs/day unmitigated)	7.31	61.10	142.22	2.90	145.12	29.70	2.67	32.37
2012 TOTALS (lbs/day mitigated)	7.31	57.31	9.93	2.21	12.13	2.08	2.03	4.11
2013 TOTALS (lbs/day unmitigated)	27.32	30.35	0.14	2.17	2.31	0.05	1.99	2.04
2013 TOTALS (lbs/day mitigated)	27.32	30.35	0.14	2.17	2.31	0.05	1.99	2.04
2014 TOTALS (lbs/day unmitigated)	24.52	15.55	0.12	0.94	1.06	0.04	0.86	0.90
2014 TOTALS (lbs/day mitigated)	24.52	15.55	0.12	0.94	1.06	0.04	0.86	0.90

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	2.47	3.12	0.03	0.03

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TOTALS (lbs/day, mitigated)	1.80	2.50	0.01	0.01
Percent Reduction	27.13	19.87	66.67	66.67

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	50.70	50.59	53.48	11.25
TOTALS (lbs/day, mitigated)	47.86	47.58	50.30	10.59
Percent Reduction	5.60	5.95	5.95	5.87

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	53.17	53.71	53.51	11.28
TOTALS (lbs/day, mitigated)	49.66	50.08	50.31	10.60
Percent Reduction	6.60	6.76	5.98	6.03

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>
Time Slice 4/2/2012-7/31/2012 Active Days: 87	5.48	45.80	142.21	2.17	144.38	29.70	1.99	31.70
Mass Grading 04/01/2012-08/01/2012	5.48	45.80	142.21	2.17	144.38	29.70	1.99	31.70
Mass Grading Dust	0.00	0.00	142.20	0.00	142.20	29.70	0.00	29.70
Mass Grading Off Road Diesel	5.38	44.86	0.00	2.13	2.13	0.00	1.96	1.96
Mass Grading On Road Diesel	0.06	0.86	0.01	0.03	0.04	0.00	0.03	0.03
Mass Grading Worker Trips	0.05	0.08	0.01	0.00	0.01	0.00	0.00	0.01

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Time Slice 8/1/2012-8/1/2012 Active Days: 1	<u>7.31</u>	<u>61.10</u>	<u>142.22</u>	<u>2.90</u>	<u>145.12</u>	<u>29.70</u>	<u>2.67</u>	<u>32.37</u>
Mass Grading 04/01/2012-08/01/2012	5.48	45.80	142.21	2.17	144.38	29.70	1.99	31.70
Mass Grading Dust	0.00	0.00	142.20	0.00	142.20	29.70	0.00	29.70
Mass Grading Off Road Diesel	5.38	44.86	0.00	2.13	2.13	0.00	1.96	1.96
Mass Grading On Road Diesel	0.06	0.86	0.01	0.03	0.04	0.00	0.03	0.03
Mass Grading Worker Trips	0.05	0.08	0.01	0.00	0.01	0.00	0.00	0.01
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 8/2/2012-10/31/2012 Active Days: 65	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 11/1/2012-11/1/2012 Active Days: 1	5.78	33.30	0.13	1.90	2.03	0.05	1.74	1.79
Building 11/01/2012-03/31/2014	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Building Off Road Diesel	3.14	14.81	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.16	2.08	0.02	0.08	0.10	0.01	0.07	0.08
Building Worker Trips	0.65	1.11	0.10	0.05	0.16	0.04	0.04	0.08
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00

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Time Slice 11/2/2012-12/31/2012	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Active Days: 42								
Building 11/01/2012-03/31/2014	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Building Off Road Diesel	3.14	14.81	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.16	2.08	0.02	0.08	0.10	0.01	0.07	0.08
Building Worker Trips	0.65	1.11	0.10	0.05	0.16	0.04	0.04	0.08
Time Slice 1/1/2013-9/30/2013	24.84	16.78	0.12	1.05	1.18	0.04	0.96	1.01
Active Days: 195								
Building 11/01/2012-03/31/2014	3.61	16.77	0.12	1.05	1.18	0.04	0.96	1.01
Building Off Road Diesel	2.88	13.91	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.15	1.85	0.02	0.07	0.09	0.01	0.06	0.07
Building Worker Trips	0.58	1.01	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 10/1/2013-12/31/2013	<u>27.32</u>	<u>30.35</u>	<u>0.14</u>	<u>2.17</u>	<u>2.31</u>	<u>0.05</u>	<u>1.99</u>	<u>2.04</u>
Active Days: 66								
Asphalt 10/01/2013-12/31/2013	2.48	13.57	0.01	1.12	1.13	0.01	1.03	1.03
Paving Off-Gas	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	0.00	1.09	1.09	0.00	1.00	1.00
Paving On Road Diesel	0.04	0.64	0.00	0.02	0.03	0.00	0.02	0.02
Paving Worker Trips	0.06	0.10	0.01	0.01	0.02	0.00	0.00	0.01
Building 11/01/2012-03/31/2014	3.61	16.77	0.12	1.05	1.18	0.04	0.96	1.01
Building Off Road Diesel	2.88	13.91	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.15	1.85	0.02	0.07	0.09	0.01	0.06	0.07
Building Worker Trips	0.58	1.01	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2014-3/31/2014	<u>24.52</u>	<u>15.55</u>	<u>0.12</u>	<u>0.94</u>	<u>1.06</u>	<u>0.04</u>	<u>0.86</u>	<u>0.90</u>
Active Days: 64								
Building 11/01/2012-03/31/2014	3.30	15.54	0.12	0.94	1.06	0.04	0.86	0.90
Building Off Road Diesel	2.63	12.97	0.00	0.82	0.82	0.00	0.76	0.76
Building Vendor Trips	0.14	1.64	0.02	0.06	0.08	0.01	0.06	0.06
Building Worker Trips	0.53	0.92	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Mass Grading 4/1/2012 - 8/1/2012 - Default Fine Site Grading Description

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Total Acres Disturbed: 28.45

Maximum Daily Acreage Disturbed: 7.11

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 38.2

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 8/1/2012 - 11/1/2012 - Utility trenching

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 10/1/2013 - 12/31/2013 - Default Paving Description

Acres to be Paved: 7.11

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 11/1/2012 - 3/31/2014 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2013 - 3/31/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>
Time Slice 4/2/2012-7/31/2012 Active Days: 87	5.48	42.02	9.92	1.47	11.39	2.07	1.36	3.43
Mass Grading 04/01/2012-08/01/2012	5.48	42.02	9.92	1.47	11.39	2.07	1.36	3.43
Mass Grading Dust	0.00	0.00	9.91	0.00	9.91	2.07	0.00	2.07
Mass Grading Off Road Diesel	5.38	41.08	0.00	1.44	1.44	0.00	1.32	1.32
Mass Grading On Road Diesel	0.06	0.86	0.01	0.03	0.04	0.00	0.03	0.03
Mass Grading Worker Trips	0.05	0.08	0.01	0.00	0.01	0.00	0.00	0.01

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Time Slice 8/1/2012-8/1/2012 Active Days: 1	<u>7.31</u>	<u>57.31</u>	<u>9.93</u>	<u>2.21</u>	<u>12.13</u>	<u>2.08</u>	<u>2.03</u>	<u>4.11</u>
Mass Grading 04/01/2012-08/01/2012	5.48	42.02	9.92	1.47	11.39	2.07	1.36	3.43
Mass Grading Dust	0.00	0.00	9.91	0.00	9.91	2.07	0.00	2.07
Mass Grading Off Road Diesel	5.38	41.08	0.00	1.44	1.44	0.00	1.32	1.32
Mass Grading On Road Diesel	0.06	0.86	0.01	0.03	0.04	0.00	0.03	0.03
Mass Grading Worker Trips	0.05	0.08	0.01	0.00	0.01	0.00	0.00	0.01
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 8/2/2012-10/31/2012 Active Days: 65	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 11/1/2012-11/1/2012 Active Days: 1	5.78	33.30	0.13	1.90	2.03	0.05	1.74	1.79
Building 11/01/2012-03/31/2014	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Building Off Road Diesel	3.14	14.81	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.16	2.08	0.02	0.08	0.10	0.01	0.07	0.08
Building Worker Trips	0.65	1.11	0.10	0.05	0.16	0.04	0.04	0.08
Trenching 08/01/2012-11/01/2012	1.84	15.30	0.00	0.74	0.74	0.00	0.68	0.68
Trenching Off Road Diesel	1.80	15.24	0.00	0.73	0.73	0.00	0.67	0.67
Trenching Worker Trips	0.03	0.05	0.00	0.00	0.01	0.00	0.00	0.00

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Time Slice 11/2/2012-12/31/2012	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Active Days: 42								
Building 11/01/2012-03/31/2014	3.95	18.01	0.12	1.17	1.29	0.04	1.07	1.11
Building Off Road Diesel	3.14	14.81	0.00	1.04	1.04	0.00	0.95	0.95
Building Vendor Trips	0.16	2.08	0.02	0.08	0.10	0.01	0.07	0.08
Building Worker Trips	0.65	1.11	0.10	0.05	0.16	0.04	0.04	0.08
Time Slice 1/1/2013-9/30/2013	24.84	16.78	0.12	1.05	1.18	0.04	0.96	1.01
Active Days: 195								
Building 11/01/2012-03/31/2014	3.61	16.77	0.12	1.05	1.18	0.04	0.96	1.01
Building Off Road Diesel	2.88	13.91	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.15	1.85	0.02	0.07	0.09	0.01	0.06	0.07
Building Worker Trips	0.58	1.01	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 10/1/2013-12/31/2013	<u>27.32</u>	<u>30.35</u>	<u>0.14</u>	<u>2.17</u>	<u>2.31</u>	<u>0.05</u>	<u>1.99</u>	<u>2.04</u>
Active Days: 66								
Asphalt 10/01/2013-12/31/2013	2.48	13.57	0.01	1.12	1.13	0.01	1.03	1.03
Paving Off-Gas	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	0.00	1.09	1.09	0.00	1.00	1.00
Paving On Road Diesel	0.04	0.64	0.00	0.02	0.03	0.00	0.02	0.02
Paving Worker Trips	0.06	0.10	0.01	0.01	0.02	0.00	0.00	0.01
Building 11/01/2012-03/31/2014	3.61	16.77	0.12	1.05	1.18	0.04	0.96	1.01
Building Off Road Diesel	2.88	13.91	0.00	0.93	0.93	0.00	0.86	0.86
Building Vendor Trips	0.15	1.85	0.02	0.07	0.09	0.01	0.06	0.07
Building Worker Trips	0.58	1.01	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2014-3/31/2014	<u>24.52</u>	<u>15.55</u>	<u>0.12</u>	<u>0.94</u>	<u>1.06</u>	<u>0.04</u>	<u>0.86</u>	<u>0.90</u>
Active Days: 64								
Building 11/01/2012-03/31/2014	3.30	15.54	0.12	0.94	1.06	0.04	0.86	0.90
Building Off Road Diesel	2.63	12.97	0.00	0.82	0.82	0.00	0.76	0.76
Building Vendor Trips	0.14	1.64	0.02	0.06	0.08	0.01	0.06	0.06
Building Worker Trips	0.53	0.92	0.10	0.05	0.16	0.04	0.04	0.08
Coating 01/01/2013-03/31/2014	21.22	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	21.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/1/2012 - 8/1/2012 - Default Fine Site Grading Description

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For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	0.22	3.06	0.01	0.01
Hearth				
Landscape	0.37	0.06	0.02	0.02
Consumer Products	0.00			
Architectural Coatings	1.88			
TOTALS (lbs/day, unmitigated)	2.47	3.12	0.03	0.03

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	0.18	2.45	0.00	0.00
Hearth				
Landscape	0.30	0.05	0.01	0.01
Consumer Products	0.00			
Architectural Coatings	1.32			
TOTALS (lbs/day, mitigated)	1.80	2.50	0.01	0.01

Area Source Mitigation Measures Selected

<u>Mitigation Description</u>	<u>Percent Reduction</u>
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Nonresidential Interior Use Low VOC Coating	30.00
For Nonresidential Exterior Use Low VOC Coating	30.00

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 100%

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	ROG	NOX	PM10	PM25
Free-standing discount store	34.77	35.06	37.01	7.79
Home improvement superstore	14.27	13.71	14.41	3.03
General office building	1.66	1.82	2.06	0.43
TOTALS (lbs/day, unmitigated)	50.70	50.59	53.48	11.25

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	ROG	NOX	PM10	PM25
Free-standing discount store	32.80	32.98	34.82	7.33
Home improvement superstore	13.49	12.89	13.55	2.85
General office building	1.57	1.71	1.93	0.41
TOTALS (lbs/day, mitigated)	47.86	47.58	50.30	10.59

Operational Mitigation Options Selected

Residential Mitigation Measures

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was NOT selected.

Nonresidential Mitigation Measures

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%

Inputs Selected:

The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 23

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 10

The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.37%

Inputs Selected:

The Number of Intersections per Square Mile is 50

The Percent of Streets with Sidewalks on One Side is 10%

The Percent of Streets with Sidewalks on Both Sides is 90%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 80%

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2014 Temperature (F): 85 Season: Summer

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Free-standing discount store		56.02	1000 sq ft	174.17	9,757.00	40,647.24
Home improvement superstore		29.80	1000 sq ft	130.22	3,880.56	15,821.96
General office building		19.90	1000 sq ft	17.50	348.25	2,258.77
					13,985.81	58,727.97

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.8	0.4	99.4	0.2
Light Truck < 3750 lbs	12.7	0.8	96.8	2.4
Light Truck 3751-5750 lbs	19.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	50.0	50.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Free-standing discount store				2.0	1.0	97.0
Home improvement superstore				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults

APPENDIX J-3

ANNUAL GREENHOUSE GAS EMISSIONS, OCTOBER 2010

Petaluma Deer Creek Shopping Center Annual GHG Emissions
Year: 2020 (in metric tons)

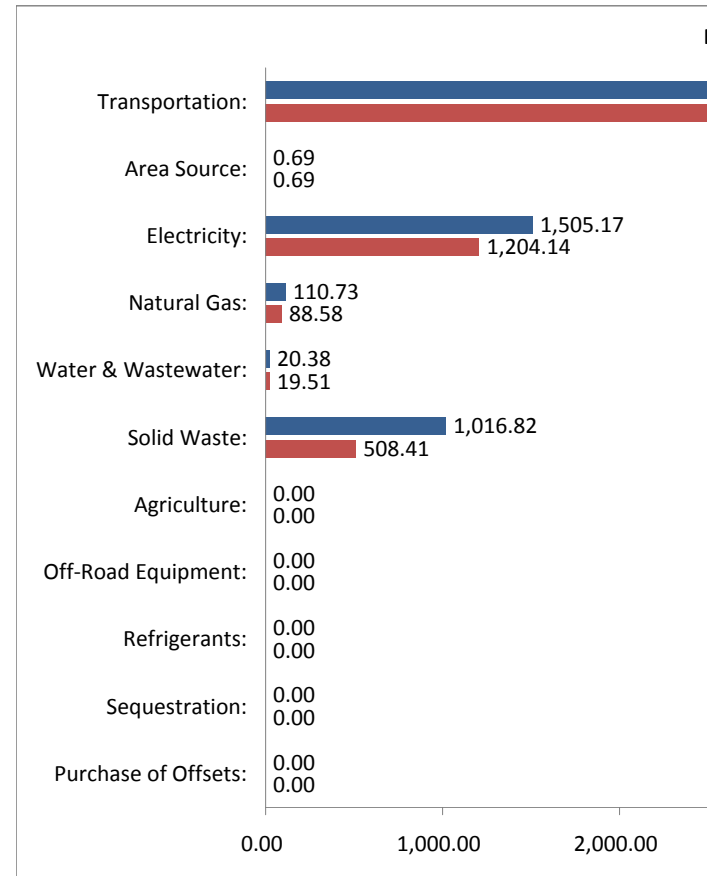
Source	Unmitigated Emissions		Mitigated Emissions		
	Project Emissions from BGM	Adjusted for PG&E Power Mix	Project Emissions from BGM	Adjusted for PG&E Power Mix	Percent of Total
Transportation:	7091	7091	6949	6949	83%
Area Source:	1	1	1	1	0%
Electricity:	1505	983	1204	786	9%
Natural Gas:	111	111	89	89	1%
Water & Wastewater:	20	13	20	13	0%
Solid Waste:	508	508	508	508	6%
Total		8707		8346	4%
Population		0		0	
Employees		644		644	
Per Capita Emissions		13.5		13.0	

Summary Results

Project Name: Petaluma Deer Creek
 Project and Baseline Years: 2020 N/A

Results	Unmitigated Project- Baseline CO2e (metric tons/year)	Mitigated Project- Baseline CO2e (metric tons/year)
Transportation:	7,538.09	7,090.52
Area Source:	0.69	0.69
Electricity:	1,505.17	1,204.14
Natural Gas:	110.73	88.58
Water & Wastewater:	20.38	19.51
Solid Waste:	1,016.82	508.41
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	10,191.88	8,911.85

Baseline is currently: **OFF**
 Baseline Project Name:
 Go to Settings Tab to Turn On Baseline



Detailed Results

Unmitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				7,538.09	73.96%
Area Source:	0.69	0.00	0.00	0.69	0.01%
Electricity:	1,502.76	0.01	0.01	1,505.17	14.77%
Natural Gas:	110.45	0.01	0.00	110.73	1.09%
Water & Wastewater:	20.35	0.00	0.00	20.38	0.20%
Solid Waste:	7.04	48.08	N/A	1,016.82	9.98%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				10,191.88	100.00%

* Several adjustments were made to transportation emissions after they have been imported from URBEMIS.

After importing from URBEMIS, CO2 emissions are converted to metric tons and then adjusted to account for the "Pavley" regulation. Then, CO2 is converted to CO2e by multiplying by 100/95 to account for the contribution of other GHGs (CH4, N2O, and HFCs [from leaking air conditioning]). Finally, CO2e is adjusted to account for the low carbon fuels rule.

Mitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				7,090.52	79.56%
Area Source:	0.69	0.00	0.00	0.69	0.01%
Electricity:	1,202.21	0.01	0.01	1,204.14	13.51%
Natural Gas:	88.36	0.01	0.00	88.58	0.99%
Water & Wastewater:	19.48	0.00	0.00	19.51	0.22%
Solid Waste:	3.52	24.04	N/A	508.41	5.70%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	0.00	0.00%
Purchase of Offsets:	N/A	N/A	N/A	0.00	0.00%
Total:				8,911.85	100.00%

Mitigation Measures Selected:

Transportation: Go to the following tab: [Transp. Detail Mit](#) for a list of the transportation mitigation measures selected (in URBE

Electricity: The following mitigation measure(s) have been selected to reduce electricity emissions.

Natural Gas: The following mitigation measure(s) have been selected to reduce natural gas emissions.

Water and Wastewater: The following mitigation measure(s) have been selected to reduce water and wastewater emissions.

Drought Tolerant Landscaping	10 % Reduction Outdoor Use
Low Flush Toilets	2 % Reduction Indoor Use

Solid Waste: The following mitigation measure has been selected to reduce solid waste related GHG emissions.

Reduce Solid Waste by the Following Percentage	50 Solid Waste Reduction %
--	----------------------------

Ag: No existing mitigation measures available.

Off-Road Equipment: No existing mitigation measures available.

Refrigerants: The following mitigation measure has ben selected to reduce refrigerant emissions:

Carbon Sequestration: Project does not include carbon sequestration through tree planting.

Emission Offsets/Credits: Project does not include purchase of emission offsets/credits.

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AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.41	0.57	0.00	0.00	670.70
TOTALS (tons/year, mitigated)	0.30	0.45	0.00	0.00	536.71
Percent Reduction	26.83	21.05	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	6.77	6.43	9.72	2.03	9,961.12
TOTALS (tons/year, mitigated)	6.39	6.05	9.15	1.90	9,369.69
Percent Reduction	5.61	5.91	5.86	6.40	5.94

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	7.18	7.00	9.72	2.03	10,631.82
TOTALS (tons/year, mitigated)	6.69	6.50	9.15	1.90	9,906.40
Percent Reduction	6.82	7.14	5.86	6.40	6.82

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>ROG</u>	<u>NOx</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2013	3.24	2.19	0.02	0.14	0.15	0.01	0.13	0.13	557.16
Building 11/01/2012-03/31/2014	0.47	2.19	0.02	0.14	0.15	0.01	0.13	0.13	553.86
Building Off Road Diesel	0.38	1.81	0.00	0.12	0.12	0.00	0.11	0.11	211.57
Building Vendor Trips	0.02	0.24	0.00	0.01	0.01	0.00	0.01	0.01	67.83
Building Worker Trips	0.08	0.13	0.01	0.01	0.02	0.00	0.01	0.01	274.47
Coating 01/01/2013-03/31/2014	2.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Architectural Coating	2.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
2014	0.78	0.50	0.00	0.03	0.03	0.00	0.03	0.03	136.66
Building 11/01/2012-03/31/2014	0.11	0.50	0.00	0.03	0.03	0.00	0.03	0.03	135.85
Building Off Road Diesel	0.08	0.42	0.00	0.03	0.03	0.00	0.02	0.02	51.88
Building Vendor Trips	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	16.63
Building Worker Trips	0.02	0.03	0.00	0.00	0.01	0.00	0.00	0.00	67.34
Coating 01/01/2013-03/31/2014	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Architectural Coating	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/1/2012 - 8/1/2012 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stabilizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

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PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.56	0.00	0.00	669.94
Hearth					
Landscape	0.03	0.01	0.00	0.00	0.76
Consumer Products	0.00				
Architectural Coatings	0.34				
TOTALS (tons/year, unmitigated)	0.41	0.57	0.00	0.00	670.70

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.03	0.45	0.00	0.00	535.95
Hearth					
Landscape	0.03	0.00	0.00	0.00	0.76
Consumer Products	0.00				
Architectural Coatings	0.24				
TOTALS (tons/year, mitigated)	0.30	0.45	0.00	0.00	536.71

Area Source Mitigation Measures Selected

<u>Mitigation Description</u>	<u>Percent Reduction</u>
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Nonresidential Interior Use Low VOC Coating	30.00
For Nonresidential Exterior Use Low VOC Coating	30.00

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	PM10	PM25	CO2
Free-standing discount store	4.66	4.46	6.73	1.40	6,893.56
Home improvement superstore	1.89	1.74	2.62	0.55	2,685.30
General office building	0.22	0.23	0.37	0.08	382.26
TOTALS (tons/year, unmitigated)	6.77	6.43	9.72	2.03	9,961.12

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	PM10	PM25	CO2
Free-standing discount store	4.40	4.19	6.33	1.32	6,484.27
Home improvement superstore	1.79	1.64	2.47	0.51	2,525.86
General office building	0.20	0.22	0.35	0.07	359.56
TOTALS (tons/year, mitigated)	6.39	6.05	9.15	1.90	9,369.69

Operational Mitigation Options Selected

Residential Mitigation Measures

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was NOT selected.

Nonresidential Mitigation Measures

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.57%

Inputs Selected:

The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 23

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 10

The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.37%

Inputs Selected:

The Number of Intersections per Square Mile is 50

The Percent of Streets with Sidewalks on One Side is 10%

The Percent of Streets with Sidewalks on Both Sides is 90%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 80%

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Free-standing discount store		56.02	1000 sq ft	174.17	9,757.00	40,647.24
Home improvement superstore		29.80	1000 sq ft	130.22	3,880.56	15,821.96
General office building		19.90	1000 sq ft	17.50	348.25	2,258.77
					13,985.81	58,727.97

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Free-standing discount store				2.0	1.0	97.0
Home improvement superstore				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults