
APPENDIX 4.2-5
URBEMIS
(VERSION 9.2.4)
FOR CO₂, CH₄ AND N₂O

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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	0.58	0.76	0.00	0.00	0.00	693.26

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)	26.43	45.15	314.00	0.22	19.76	4.54	22,656.98

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)	26.84	45.73	314.76	0.22	19.76	4.54	23,350.24

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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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Trenching 09/01/2009-10/31/2009	0.03	0.26	0.17	0.00	0.00	0.01	0.02	0.00	0.01	0.01	26.32
Trenching Off Road Diesel	0.03	0.26	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.07
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25
Asphalt 11/01/2009-11/30/2009	0.03	0.11	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	11.88
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.71
Paving On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.63
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54
Building 12/01/2009-05/31/2010	0.04	0.25	0.41	0.00	0.00	0.02	0.02	0.00	0.02	0.02	47.59
Building Off Road Diesel	0.03	0.20	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	16.89
Building Vendor Trips	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07
Building Worker Trips	0.01	0.02	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.63
2010	3.69	1.11	1.86	0.00	0.01	0.08	0.09	0.00	0.07	0.08	225.62
Building 12/01/2009-05/31/2010	0.19	1.11	1.82	0.00	0.01	0.08	0.09	0.00	0.07	0.08	221.43
Building Off Road Diesel	0.14	0.90	0.51	0.00	0.00	0.07	0.07	0.00	0.07	0.07	78.58
Building Vendor Trips	0.01	0.14	0.12	0.00	0.00	0.01	0.01	0.00	0.00	0.01	28.25
Building Worker Trips	0.04	0.06	1.19	0.00	0.01	0.00	0.01	0.00	0.00	0.00	114.61
Coating 03/01/2010-06/30/2010	3.51	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18
Architectural Coating	3.50	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18

Phase Assumptions

Phase: Demolition 7/1/2008 - 7/15/2009 - Demolition of Onsite Structure

Building Volume Total (cubic feet): 108032.5

Building Volume Daily (cubic feet): 9811.5

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On Road Truck Travel (VMT): 90.85

Off-Road Equipment:

- 1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
- 1 Excavators (168 hp) operating at a 0.57 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 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 8/1/2008 - 8/31/2009 - Site Grading

Total Acres Disturbed: 26.8

Maximum Daily Acreage Disturbed: 6.7

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 35.46

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 6 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 9/1/2009 - 10/31/2009 - Trenching and Underground Utilities

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 11/1/2009 - 11/30/2009 - Paving

Acres to be Paved: 13.4

Off-Road Equipment:

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

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1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 12/1/2009 - 5/31/2010 - Building Construction

Off-Road Equipment:

10 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

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

Phase: Architectural Coating 3/1/2010 - 6/30/2010 - Architectural Coatings

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

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

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	0.58	0.48	0.00	0.00	0.00	692.75
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.35						
TOTALS (tons/year, unmitigated)	0.41	0.58	0.76	0.00	0.00	0.00	693.26

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Free-standing discount store	18.79	32.14	223.52	0.16	14.07	3.23	16,128.21
Regnl shop. center	7.64	13.01	90.48	0.06	5.69	1.31	6,528.77
TOTALS (tons/year, unmitigated)	26.43	45.15	314.00	0.22	19.76	4.54	22,656.98

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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	214.14	11,996.12	88,687.34
Regnl shop. center		42.94	1000 sq ft	113.09	4,856.08	35,901.03
					16,852.20	124,588.37

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	43.0	1.6	98.2	0.2
Light Truck < 3750 lbs	12.2	3.3	88.5	8.2
Light Truck 3751-5750 lbs	20.8	1.4	98.1	0.5
Med Truck 5751-8500 lbs	11.8	0.8	99.2	0.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	72.0	28.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.4	7.1	14.3	78.6
Heavy-Heavy Truck 33,001-60,000 lbs	1.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.4	68.2	31.8	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

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
Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: W:\Ceres, city of\Mitchell Ranch Center EIR\Work Product\Admin DEIR\Appendices to DEIR_Organized\4.2 Air Quality\Reports\Mitchell Ranch CO2.urb924

Project Name: Michell Ranch GHG Analysis

Project Location: Stanislaus County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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>
2008 TOTALS (lbs/day unmitigated)	22.05	193.17	97.95	0.01	138.16	9.33	147.49	28.86	8.58	37.44	16,807.09
2008 TOTALS (lbs/day mitigated)	22.05	193.17	97.95	0.01	49.53	9.33	58.86	10.35	8.58	18.93	16,807.09
2009 TOTALS (lbs/day unmitigated)	21.03	182.61	92.24	0.03	138.16	8.79	146.95	28.86	8.08	36.94	16,807.07
2009 TOTALS (lbs/day mitigated)	21.03	182.61	92.24	0.03	49.53	8.79	58.32	10.35	8.08	18.43	16,807.07
2010 TOTALS (lbs/day unmitigated)	83.21	20.82	35.03	0.03	0.13	1.49	1.61	0.05	1.36	1.41	4,234.06
2010 TOTALS (lbs/day mitigated)	83.21	20.82	35.03	0.03	0.13	1.49	1.61	0.05	1.36	1.41	4,234.06

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 (lbs/day, unmitigated)	2.40	3.20	5.75	0.00	0.02	0.02	3,801.49

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 (lbs/day, unmitigated)	133.19	216.90	1,643.76	1.28	108.27	24.84	129,388.28

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 (lbs/day, unmitigated)	133.59	220.10	1,649.51	1.28	108.29	24.86	133,189.77

Construction Unmitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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>
Time Slice 7/1/2008-7/31/2008	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Active Days: 23											
Demolition 07/01/2008-07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Time Slice 8/1/2008-12/31/2008	<u>22.05</u>	<u>193.17</u>	<u>97.95</u>	<u>0.01</u>	<u>138.16</u>	<u>9.33</u>	<u>147.49</u>	<u>28.86</u>	<u>8.58</u>	<u>37.44</u>	<u>16,807.09</u>
Active Days: 109											
Demolition 07/01/2008-07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Mass Grading 08/01/2008-08/31/2009	15.73	142.53	70.27	0.00	134.02	6.44	140.45	27.99	5.92	33.91	12,389.09
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	15.54	141.15	66.56	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,965.07
Mass Grading On Road Diesel	0.07	1.18	0.37	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.11	0.19	3.34	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.26

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Time Slice 1/1/2009-7/15/2009 Active Days: 140	<u>21.03</u>	<u>182.61</u>	<u>92.24</u>	0.01	<u>138.16</u>	<u>8.79</u>	<u>146.95</u>	<u>28.86</u>	<u>8.08</u>	<u>36.94</u>	<u>16,807.07</u>
Demolition 07/01/2008- 07/15/2009	6.00	47.68	26.67	0.01	4.14	2.72	6.86	0.86	2.50	3.36	4,417.99
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	5.76	44.71	23.51	0.00	0.00	2.61	2.61	0.00	2.40	2.40	3,847.69
Demo On Road Diesel	0.17	2.85	0.88	0.00	0.01	0.10	0.12	0.00	0.10	0.10	365.75
Demo Worker Trips	0.08	0.13	2.28	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.54
Mass Grading 08/01/2008- 08/31/2009	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 7/16/2009-8/31/2009 Active Days: 33	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading 08/01/2008- 08/31/2009	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 9/1/2009-10/30/2009 Active Days: 44	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching 09/01/2009-10/31/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching Off Road Diesel	1.52	11.71	6.55	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,094.18
Trenching Worker Trips	0.04	0.06	1.14	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.27

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Time Slice 11/2/2009-11/30/2009 Active Days: 21	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Asphalt 11/01/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Paving Off-Gas	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.02	4.52	3.03	0.00	0.00	0.40	0.40	0.00	0.37	0.37	353.02
Paving On Road Diesel	0.33	5.66	1.74	0.01	0.03	0.21	0.23	0.01	0.19	0.20	726.96
Paving Worker Trips	0.02	0.03	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.14
Time Slice 12/1/2009-12/31/2009 Active Days: 23	3.77	22.03	35.92	<u>0.03</u>	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building 12/01/2009-05/31/2010	3.77	22.03	35.92	0.03	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building Off Road Diesel	2.76	17.75	9.58	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,468.72
Building Vendor Trips	0.22	2.96	2.49	0.00	0.02	0.11	0.13	0.01	0.10	0.11	527.90
Building Worker Trips	0.79	1.32	23.85	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,141.85
Time Slice 1/1/2010-2/26/2010 Active Days: 41	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24

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Time Slice 3/1/2010-5/31/2010	<u>83.21</u>	<u>20.82</u>	<u>35.03</u>	<u>0.03</u>	<u>0.13</u>	<u>1.49</u>	<u>1.61</u>	<u>0.05</u>	<u>1.36</u>	<u>1.41</u>	<u>4,234.06</u>
Active Days: 66											
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Time Slice 6/1/2010-6/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Active Days: 22											
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09

Phase Assumptions

Phase: Demolition 7/1/2008 - 7/15/2009 - Demolition of Onsite Structure

Building Volume Total (cubic feet): 108032.5

Building Volume Daily (cubic feet): 9811.5

On Road Truck Travel (VMT): 90.85

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 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 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

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

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

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Phase: Mass Grading 8/1/2008 - 8/31/2009 - Site Grading

Total Acres Disturbed: 26.8

Maximum Daily Acreage Disturbed: 6.7

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 35.46

Off-Road Equipment:

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

6 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 9/1/2009 - 10/31/2009 - Trenching and Underground Utilities

Off-Road Equipment:

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

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

Phase: Paving 11/1/2009 - 11/30/2009 - Paving

Acres to be Paved: 13.4

Off-Road Equipment:

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

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 12/1/2009 - 5/31/2010 - Building Construction

Off-Road Equipment:

10 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

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

Phase: Architectural Coating 3/1/2010 - 6/30/2010 - Architectural Coatings

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

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>CO</u>	<u>SO2</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>
Time Slice 7/1/2008-7/31/2008 Active Days: 23	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Demolition 07/01/2008- 07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55

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Time Slice 8/1/2008-12/31/2008 Active Days: 109	<u>22.05</u>	<u>193.17</u>	<u>97.95</u>	<u>0.01</u>	<u>49.53</u>	<u>9.33</u>	<u>58.86</u>	<u>10.35</u>	<u>8.58</u>	<u>18.93</u>	<u>16,807.09</u>
Demolition 07/01/2008- 07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Mass Grading 08/01/2008- 08/31/2009	15.73	142.53	70.27	0.00	45.39	6.44	51.82	9.48	5.92	15.40	12,389.09
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	15.54	141.15	66.56	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,965.07
Mass Grading On Road Diesel	0.07	1.18	0.37	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.11	0.19	3.34	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.26
Time Slice 1/1/2009-7/15/2009 Active Days: 140	<u>21.03</u>	<u>182.61</u>	<u>92.24</u>	<u>0.01</u>	<u>49.53</u>	<u>8.79</u>	<u>58.32</u>	<u>10.35</u>	<u>8.08</u>	<u>18.43</u>	<u>16,807.07</u>
Demolition 07/01/2008- 07/15/2009	6.00	47.68	26.67	0.01	4.14	2.72	6.86	0.86	2.50	3.36	4,417.99
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	5.76	44.71	23.51	0.00	0.00	2.61	2.61	0.00	2.40	2.40	3,847.69
Demo On Road Diesel	0.17	2.85	0.88	0.00	0.01	0.10	0.12	0.00	0.10	0.10	365.75
Demo Worker Trips	0.08	0.13	2.28	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.54
Mass Grading 08/01/2008- 08/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25

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Time Slice 7/16/2009-8/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Active Days: 33											
Mass Grading 08/01/2008-08/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 9/1/2009-10/30/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Active Days: 44											
Trenching 09/01/2009-10/31/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching Off Road Diesel	1.52	11.71	6.55	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,094.18
Trenching Worker Trips	0.04	0.06	1.14	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.27
Time Slice 11/2/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Active Days: 21											
Asphalt 11/01/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Paving Off-Gas	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.02	4.52	3.03	0.00	0.00	0.40	0.40	0.00	0.37	0.37	353.02
Paving On Road Diesel	0.33	5.66	1.74	0.01	0.03	0.21	0.23	0.01	0.19	0.20	726.96
Paving Worker Trips	0.02	0.03	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.14
Time Slice 12/1/2009-12/31/2009	3.77	22.03	35.92	<u>0.03</u>	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Active Days: 23											
Building 12/01/2009-05/31/2010	3.77	22.03	35.92	0.03	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building Off Road Diesel	2.76	17.75	9.58	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,468.72
Building Vendor Trips	0.22	2.96	2.49	0.00	0.02	0.11	0.13	0.01	0.10	0.11	527.90
Building Worker Trips	0.79	1.32	23.85	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,141.85

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Time Slice 1/1/2010-2/26/2010 Active Days: 41	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Time Slice 3/1/2010-5/31/2010 Active Days: 66	<u>83.21</u>	<u>20.82</u>	<u>35.03</u>	<u>0.03</u>	<u>0.13</u>	<u>1.49</u>	<u>1.61</u>	<u>0.05</u>	<u>1.36</u>	<u>1.41</u>	<u>4,234.06</u>
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Time Slice 6/1/2010-6/30/2010 Active Days: 22	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 8/1/2008 - 8/31/2009 - Site Grading

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, 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	0.23	3.16	2.66	0.00	0.01	0.01	3,795.87
Hearth - No Summer Emissions							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	0.00						
Architectural Coatings	1.92						
TOTALS (lbs/day, unmitigated)	2.40	3.20	5.75	0.00	0.02	0.02	3,801.49

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Free-standing discount store	94.59	154.40	1,170.10	0.91	77.07	17.68	92,104.12
Regnl shop. center	38.60	62.50	473.66	0.37	31.20	7.16	37,284.16
TOTALS (lbs/day, unmitigated)	133.19	216.90	1,643.76	1.28	108.27	24.84	129,388.28

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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	214.14	11,996.12	88,687.34
Regnl shop. center		42.94	1000 sq ft	113.09	4,856.08	35,901.03
					16,852.20	124,588.37

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	43.0	1.6	98.2	0.2
Light Truck < 3750 lbs	12.2	3.3	88.5	8.2
Light Truck 3751-5750 lbs	20.8	1.4	98.1	0.5
Med Truck 5751-8500 lbs	11.8	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	72.0	28.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.4	7.1	14.3	78.6
Heavy-Heavy Truck 33,001-60,000 lbs	1.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.4	68.2	31.8	0.0
School Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	1.1	0.0	90.9	9.1

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
Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: W:\Ceres, city of\Mitchell Ranch Center EIR\Work Product\Admin DEIR\Appendices to DEIR_Organized\4.2 Air Quality\Reports\Mitchell Ranch CO2.urb924

Project Name: Michell Ranch GHG Analysis

Project Location: Stanislaus County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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>
2008 TOTALS (lbs/day unmitigated)	22.05	193.17	97.95	0.01	138.16	9.33	147.49	28.86	8.58	37.44	16,807.09
2008 TOTALS (lbs/day mitigated)	22.05	193.17	97.95	0.01	49.53	9.33	58.86	10.35	8.58	18.93	16,807.09
2009 TOTALS (lbs/day unmitigated)	21.03	182.61	92.24	0.03	138.16	8.79	146.95	28.86	8.08	36.94	16,807.07
2009 TOTALS (lbs/day mitigated)	21.03	182.61	92.24	0.03	49.53	8.79	58.32	10.35	8.08	18.43	16,807.07
2010 TOTALS (lbs/day unmitigated)	83.21	20.82	35.03	0.03	0.13	1.49	1.61	0.05	1.36	1.41	4,234.06
2010 TOTALS (lbs/day mitigated)	83.21	20.82	35.03	0.03	0.13	1.49	1.61	0.05	1.36	1.41	4,234.06

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 (lbs/day, unmitigated)	2.15	3.16	2.66	0.00	0.01	0.01	3,795.87

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 (lbs/day, unmitigated)	168.04	308.47	1,874.18	1.13	108.27	24.84	113,666.98

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 (lbs/day, unmitigated)	170.19	311.63	1,876.84	1.13	108.28	24.85	117,462.85

Construction Unmitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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>
Time Slice 7/1/2008-7/31/2008 Active Days: 23	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Demolition 07/01/2008- 07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Time Slice 8/1/2008-12/31/2008 Active Days: 109	22.05	193.17	97.95	0.01	138.16	9.33	147.49	28.86	8.58	37.44	16,807.09
Demolition 07/01/2008- 07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Mass Grading 08/01/2008- 08/31/2009	15.73	142.53	70.27	0.00	134.02	6.44	140.45	27.99	5.92	33.91	12,389.09
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	15.54	141.15	66.56	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,965.07
Mass Grading On Road Diesel	0.07	1.18	0.37	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.11	0.19	3.34	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.26

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Time Slice 1/1/2009-7/15/2009 Active Days: 140	<u>21.03</u>	<u>182.61</u>	<u>92.24</u>	0.01	<u>138.16</u>	<u>8.79</u>	<u>146.95</u>	<u>28.86</u>	<u>8.08</u>	<u>36.94</u>	<u>16,807.07</u>
Demolition 07/01/2008-07/15/2009	6.00	47.68	26.67	0.01	4.14	2.72	6.86	0.86	2.50	3.36	4,417.99
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	5.76	44.71	23.51	0.00	0.00	2.61	2.61	0.00	2.40	2.40	3,847.69
Demo On Road Diesel	0.17	2.85	0.88	0.00	0.01	0.10	0.12	0.00	0.10	0.10	365.75
Demo Worker Trips	0.08	0.13	2.28	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.54
Mass Grading 08/01/2008-08/31/2009	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 7/16/2009-8/31/2009 Active Days: 33	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading 08/01/2008-08/31/2009	15.03	134.93	65.57	0.00	134.02	6.07	140.09	27.99	5.59	33.58	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	134.00	0.00	134.00	27.98	0.00	27.98	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 9/1/2009-10/30/2009 Active Days: 44	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching 09/01/2009-10/31/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching Off Road Diesel	1.52	11.71	6.55	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,094.18
Trenching Worker Trips	0.04	0.06	1.14	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.27

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Time Slice 11/2/2009-11/30/2009 Active Days: 21	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Asphalt 11/01/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Paving Off-Gas	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.02	4.52	3.03	0.00	0.00	0.40	0.40	0.00	0.37	0.37	353.02
Paving On Road Diesel	0.33	5.66	1.74	0.01	0.03	0.21	0.23	0.01	0.19	0.20	726.96
Paving Worker Trips	0.02	0.03	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.14
Time Slice 12/1/2009-12/31/2009 Active Days: 23	3.77	22.03	35.92	<u>0.03</u>	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building 12/01/2009-05/31/2010	3.77	22.03	35.92	0.03	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building Off Road Diesel	2.76	17.75	9.58	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,468.72
Building Vendor Trips	0.22	2.96	2.49	0.00	0.02	0.11	0.13	0.01	0.10	0.11	527.90
Building Worker Trips	0.79	1.32	23.85	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,141.85
Time Slice 1/1/2010-2/26/2010 Active Days: 41	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24

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Time Slice 3/1/2010-5/31/2010 Active Days: 66	<u>83.21</u>	<u>20.82</u>	<u>35.03</u>	<u>0.03</u>	<u>0.13</u>	<u>1.49</u>	<u>1.61</u>	<u>0.05</u>	<u>1.36</u>	<u>1.41</u>	<u>4,234.06</u>
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Time Slice 6/1/2010-6/30/2010 Active Days: 22	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09

Phase Assumptions

Phase: Demolition 7/1/2008 - 7/15/2009 - Demolition of Onsite Structure

Building Volume Total (cubic feet): 108032.5

Building Volume Daily (cubic feet): 9811.5

On Road Truck Travel (VMT): 90.85

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 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 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

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

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

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Phase: Mass Grading 8/1/2008 - 8/31/2009 - Site Grading

Total Acres Disturbed: 26.8

Maximum Daily Acreage Disturbed: 6.7

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 35.46

Off-Road Equipment:

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

6 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 9/1/2009 - 10/31/2009 - Trenching and Underground Utilities

Off-Road Equipment:

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

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

Phase: Paving 11/1/2009 - 11/30/2009 - Paving

Acres to be Paved: 13.4

Off-Road Equipment:

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

1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 12/1/2009 - 5/31/2010 - Building Construction

Off-Road Equipment:

10 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

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

Phase: Architectural Coating 3/1/2010 - 6/30/2010 - Architectural Coatings

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

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 Winter Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</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>
Time Slice 7/1/2008-7/31/2008 Active Days: 23	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Demolition 07/01/2008- 07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55

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Time Slice 8/1/2008-12/31/2008	<u>22.05</u>	<u>193.17</u>	<u>97.95</u>	<u>0.01</u>	<u>49.53</u>	<u>9.33</u>	<u>58.86</u>	<u>10.35</u>	<u>8.58</u>	<u>18.93</u>	<u>16,807.09</u>
Active Days: 109											
Demolition 07/01/2008-07/15/2009	6.33	50.65	27.69	0.01	4.14	2.90	7.04	0.86	2.66	3.53	4,418.00
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	6.07	47.48	24.32	0.00	0.00	2.78	2.78	0.00	2.55	2.55	3,847.69
Demo On Road Diesel	0.18	3.03	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	365.75
Demo Worker Trips	0.08	0.14	2.43	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.55
Mass Grading 08/01/2008-08/31/2009	15.73	142.53	70.27	0.00	45.39	6.44	51.82	9.48	5.92	15.40	12,389.09
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	15.54	141.15	66.56	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,965.07
Mass Grading On Road Diesel	0.07	1.18	0.37	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.11	0.19	3.34	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.26
Time Slice 1/1/2009-7/15/2009	<u>21.03</u>	<u>182.61</u>	<u>92.24</u>	<u>0.01</u>	<u>49.53</u>	<u>8.79</u>	<u>58.32</u>	<u>10.35</u>	<u>8.08</u>	<u>18.43</u>	<u>16,807.07</u>
Active Days: 140											
Demolition 07/01/2008-07/15/2009	6.00	47.68	26.67	0.01	4.14	2.72	6.86	0.86	2.50	3.36	4,417.99
Fugitive Dust	0.00	0.00	0.00	0.00	4.12	0.00	4.12	0.86	0.00	0.86	0.00
Demo Off Road Diesel	5.76	44.71	23.51	0.00	0.00	2.61	2.61	0.00	2.40	2.40	3,847.69
Demo On Road Diesel	0.17	2.85	0.88	0.00	0.01	0.10	0.12	0.00	0.10	0.10	365.75
Demo Worker Trips	0.08	0.13	2.28	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.54
Mass Grading 08/01/2008-08/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25

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Time Slice 7/16/2009-8/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Active Days: 33											
Mass Grading 08/01/2008-08/31/2009	15.03	134.93	65.57	0.00	45.39	6.07	51.46	9.48	5.59	15.07	12,389.08
Mass Grading Dust	0.00	0.00	0.00	0.00	45.37	0.00	45.37	9.47	0.00	9.47	0.00
Mass Grading Off Road Diesel	14.86	133.65	62.10	0.00	0.00	6.02	6.02	0.00	5.54	5.54	11,965.07
Mass Grading On Road Diesel	0.07	1.11	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	142.77
Mass Grading Worker Trips	0.10	0.17	3.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.25
Time Slice 9/1/2009-10/30/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Active Days: 44											
Trenching 09/01/2009-10/31/2009	1.56	11.77	7.69	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,196.45
Trenching Off Road Diesel	1.52	11.71	6.55	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,094.18
Trenching Worker Trips	0.04	0.06	1.14	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.27
Time Slice 11/2/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Active Days: 21											
Asphalt 11/01/2009-11/30/2009	2.96	10.21	5.34	0.01	0.03	0.61	0.64	0.01	0.56	0.57	1,131.11
Paving Off-Gas	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.02	4.52	3.03	0.00	0.00	0.40	0.40	0.00	0.37	0.37	353.02
Paving On Road Diesel	0.33	5.66	1.74	0.01	0.03	0.21	0.23	0.01	0.19	0.20	726.96
Paving Worker Trips	0.02	0.03	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.14
Time Slice 12/1/2009-12/31/2009	3.77	22.03	35.92	<u>0.03</u>	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Active Days: 23											
Building 12/01/2009-05/31/2010	3.77	22.03	35.92	0.03	0.12	1.55	1.68	0.04	1.42	1.47	4,138.46
Building Off Road Diesel	2.76	17.75	9.58	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,468.72
Building Vendor Trips	0.22	2.96	2.49	0.00	0.02	0.11	0.13	0.01	0.10	0.11	527.90
Building Worker Trips	0.79	1.32	23.85	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,141.85

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Time Slice 1/1/2010-2/26/2010 Active Days: 41	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Time Slice 3/1/2010-5/31/2010 Active Days: 66	<u>83.21</u>	<u>20.82</u>	<u>35.03</u>	<u>0.03</u>	<u>0.13</u>	<u>1.49</u>	<u>1.61</u>	<u>0.05</u>	<u>1.36</u>	<u>1.41</u>	<u>4,234.06</u>
Building 12/01/2009-05/31/2010	3.52	20.77	34.04	0.03	0.12	1.48	1.61	0.04	1.36	1.40	4,138.97
Building Off Road Diesel	2.59	16.86	9.48	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,468.72
Building Vendor Trips	0.20	2.70	2.32	0.00	0.02	0.10	0.12	0.01	0.09	0.10	528.01
Building Worker Trips	0.72	1.21	22.24	0.02	0.10	0.05	0.16	0.04	0.04	0.08	2,142.24
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Time Slice 6/1/2010-6/30/2010 Active Days: 22	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Coating 03/01/2010-06/30/2010	79.69	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09
Architectural Coating	79.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.99	0.00	0.00	0.00	0.01	0.00	0.00	0.00	95.09

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 8/1/2008 - 8/31/2009 - Site Grading

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, 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	0.23	3.16	2.66	0.00	0.01	0.01	3,795.87
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	1.92						
TOTALS (lbs/day, unmitigated)	2.15	3.16	2.66	0.00	0.01	0.01	3,795.87

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Free-standing discount store	119.62	219.58	1,334.12	0.80	77.07	17.68	80,913.02
Regnl shop. center	48.42	88.89	540.06	0.33	31.20	7.16	32,753.96
TOTALS (lbs/day, unmitigated)	168.04	308.47	1,874.18	1.13	108.27	24.84	113,666.98

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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	214.14	11,996.12	88,687.34
Regnl shop. center		42.94	1000 sq ft	113.09	4,856.08	35,901.03
					16,852.20	124,588.37

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	43.0	1.6	98.2	0.2
Light Truck < 3750 lbs	12.2	3.3	88.5	8.2
Light Truck 3751-5750 lbs	20.8	1.4	98.1	0.5
Med Truck 5751-8500 lbs	11.8	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	72.0	28.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.4	7.1	14.3	78.6
Heavy-Heavy Truck 33,001-60,000 lbs	1.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.4	68.2	31.8	0.0
School Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	1.1	0.0	90.9	9.1

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		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
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults

Phase	Equipment	Quantity	Hours/Day	Trips	Miles per Trip	Total Miles
Demolition	Excavator	1	8			
	Rubber Tired Loader	1	8			
	Water Truck	1	8			
	Haul Truck	1	8	5	19.3	96.5
	Passenger Vehicle (commuting)			5	14.7	73.5
	Total					
Grading	Scraper	6	8			
	Excavator	2	8			
	Tractor/Loader/Backhoe	2	8			
	Water Truck	1	8			
	Haul Truck	9	8	5	20	900
	Passenger Vehicle (commuting)			25	14.7	367.5
	Total					
Underground Utilities	Excavator	2	8			
	Tractor/Loader/Backhoe	2	8			
	Passenger Vehicle (commuting)			5	14.7	73.5
	Total					
Paving	Paving Equipment	1	8		13.4	
	Skid/Steer Loader	1	8			
	Passenger Vehicle (commuting)			2.5	14.7	36.75
	Total					
Construction	Aerial/Boom/Scissor Lift	10	8			
	Forklift	2	8			
	Passenger Vehicle (commuting)			15	14.7	220.5
	Total					
Architectural Coatings	Heavy Duty Vehicle	4	8			
	Passenger Vehicle (commuting)			5	14.7	73.5
	Total					

WORST-CASE SCENARIO

Fuel Type	Emission Factors		Total Emissions			
	CH4 (g/mi)	N2O (g/mile)	CH4 (lb/day)	N2O (lb/day)	CH4 (t/y)	N2O (t/y)
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.001	0.001	0.00	0.00
Gasoline	0.0346	0.0621	0.006	0.010	0.00	0.00
			0.007	0.011	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.010	0.010	0.00	0.00
Gasoline	0.0346	0.0621	0.028	0.050	0.00	0.01
			0.038	0.060	0.00	0.01
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Gasoline	0.0346	0.0621	0.006	0.010	0.00	0.00
			0.006	0.010	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Gasoline	0.0346	0.0621	0.003	0.005	0.00	0.00
			0.003	0.005	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Gasoline	0.0493	0.1092	0.000	0.000	0.00	0.00
Gasoline	0.0346	0.0621	0.017	0.030	0.00	0.00
			0.017	0.030	0.00	0.00
Diesel	0.0051	0.0048	0.000	0.000	0.00	0.00
Gasoline	0.0346	0.0621	0.006	0.010	0.00	0.00
			0.006	0.010	0.00	0.00
			0.076	0.126	0.01	0.01

Year	Vehicle Class	Percent of Vel	Percent of Du	Weighted Peri	Net Vehicle T	Net VMT (per day)
2010	Light Duty Auto (Gasoline)	43.0%	99.8%	42.9%	5,815	46,519
	Light Duty Auto (Diesel)	43.0%	0.2%	0.1%	12	93
	Light Duty Truck (Gasoline < 3,7	12.2%	91.8%	11.2%	1,518	12,140
	Light Duty Truck (Diesel< 3,750	12.2%	8.2%	1.0%	136	1,084
	Light Duty Truck (Gasoline 3,75	20.8%	99.5%	20.7%	2,804	22,434
	Light Duty Truck (Diesel 3,751-5	20.8%	0.5%	0.1%	14	113
	Medium Duty Trucks (Gasoline)	11.8%	100.0%	11.8%	1,599	12,791
	Medium Duty Trucks (Diesel)	11.8%	0.0%	0.0%	-	-
	Light-Heavy Duty Trucks (Gasol	2.5%	72.0%	1.8%	244	1,951
	Light-Heavy Duty Trucks Diesel:	2.5%	28.0%	0.7%	95	759
	Light-Heavy Duty Trucks (Gasol	0.9%	44.4%	0.4%	54	433
	Light-Heavy Duty Trucks Disel:	0.9%	55.6%	0.5%	68	542
	Medium-Heavy Duty Trucks (Ga	1.4%	14.3%	0.2%	27	217
	Medium-Heavy Duty Trucks Die:	1.4%	85.7%	1.2%	163	1,301
	Heavy-Heavy Duty Trucks (Gas	1.7%	0.0%	0.0%	-	-
	Heavy-Heavy Duty Trucks Diese	1.7%	100.0%	1.7%	230	1,843
	Other Bus (Diesel)	0.1%	100.0%	0.1%	14	108
	Urban Bus	0.0%	0.0%	0.0%	-	-
	Motorcycle (Gasoline)	4.4%	100.0%	4.4%	596	4,770
	School Bus (Diesel)	0.1%	100.0%	0.1%	14	108
	Motor Home (Gasoline)	1.1%	90.9%	1.0%	135	1,084
	Motor Home (Diesel)	1.1%	9.1%	0.1%	14	109
		100.0%		100.0%	13,550	108,400

Default CH4 and N2O Emission Factors for Highway Vehicles by Model Year*

Gasoline Passenger Cars

Model Year	N2O (g/mi)	CH4 (g/mi)
1984-1993	0.0647	0.0704
1994	0.0560	0.0531
1995	0.0473	0.0358
1996	0.0426	0.0272
1997	0.0422	0.0268
1998	0.0393	0.0249
1999	0.0337	0.0216
2000	0.0273	0.0178
2001	0.0158	0.0110
2002	0.0153	0.0107
2003	0.0135	0.0114
2004	0.0083	0.0145
2005	0.0079	0.0147

Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)

Model Year	N2O (g/mi)	CH4 (g/mi)
1987-1993	0.1035	0.0813
1994	0.0982	0.0646
1995	0.0908	0.0517
1996	0.0871	0.0452
1997	0.0871	0.0452
1998	0.0728	0.0391
1999	0.0564	0.0321
2000	0.0621	0.0346
2001	0.0164	0.0151
2002	0.0228	0.0178
2003	0.0114	0.0155

2004	0.0132	0.0152
2005	0.0101	0.0157

Gasoline Heavy-Duty Vehicles

Model Year	N2O (g/mi)	CH4 (g/mi)
1985-1986	0.0515	0.4090
1987	0.0849	0.3675
1988-1989	0.0933	0.3492
1990-1995	0.1142	0.3246
1996	0.1680	0.1278
1997	0.1726	0.0924
1998	0.1693	0.0641
1999	0.1435	0.0578
2000	0.1092	0.0493
2001	0.1235	0.0528
2002	0.1307	0.0546
2003	0.1240	0.0533
2004	0.0285	0.0341
2005	0.0177	0.0326

Diesel Passenger Cars

Model Year	N2O (g/mi)	CH4 (g/mi)
1960-1982	0.0012	0.0006
1983-2004	0.0010	0.0005

Diesel Light Trucks

Model Year	N2O (g/mi)	CH4 (g/mi)
1960-1982	0.0017	0.0011
1983-1995	0.0014	0.0009
1996-2004	0.0015	0.0010

Diesel Heavy-Duty Vehicles

Model Year	N2O (g/mi)	CH4 (g/mi)
All	0.0048	0.0051

Source: Gasoline vehicle factors from EPA Climate Leaders, Mobile Combustion Guidance, (2007) based on U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005 (2007). Diesel vehicle factors based on U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 3.2, Table A-98.

* Currently, CCAR's General Reporting Protocol Version 3.0 (April 2008) uses different CH4 and N2O emission factors. CCAR will be replacing the current CH4 and N2O emission factors with these emission factors in the next version of its GRP. CCAR members are encouraged to use these emission factors for consistency with The Climate Registry and this Protocol.

Year	Vehicle Class	Net VMT (per	N2O factor	CH4 factor	N2O (lb/day)	CH4 (lb/day)	N2O (tons/year)	CH4 (tons/year)
2010	Light Duty Auto (Gasoline)	46,519	0.0079	0.0147	0.81	1.51	0.148	0.275
	Light Duty Auto (Diesel)	93	0.001	0.0005	0.00	0.00	0.000	0.000
	Light Duty Truck (Gasoline < 3,750 GVW)	12,140	0.0101	0.0157	0.27	0.42	0.049	0.077
	Light Duty Truck (Diesel< 3,750 GVW)	1,084	0.0015	0.001	0.00	0.00	0.001	0.000
	Light Duty Truck (Gasoline 3,751=5,750 GVW)	22,434	0.0101	0.0157	0.50	0.78	0.091	0.142
	Light Duty Truck (Diesel 3,751-5,750 GVW)	113	0.0015	0.001	0.00	0.00	0.000	0.000
	Medium Duty Trucks (Gasoline)	12,791	0.0177	0.0326	0.50	0.92	0.091	0.168
	Medium Duty Trucks (Diesel)	-	0.0048	0.0051	0.00	0.00	0.000	0.000
	Light-Heavy Duty Trucks (Gasoline: 8,500-10,000 GVW)	1,951	0.0177	0.0326	0.08	0.14	0.014	0.026
	Light-Heavy Duty Trucks Diesel: 8,500-10,000 GVW)	759	0.0048	0.0051	0.01	0.01	0.001	0.002
	Light-Heavy Duty Trucks (Gasoline: 10,001-14,000 GVW)	433	0.0177	0.0326	0.02	0.03	0.003	0.006
	Light-Heavy Duty Trucks Disel: 10,001-14,000 GVW)	542	0.0048	0.0051	0.01	0.01	0.001	0.001
	Medium-Heavy Duty Trucks (Gasoline: 14,001-33,000 GVW)	217	0.0177	0.0326	0.01	0.02	0.002	0.003
	Medium-Heavy Duty Trucks Diesel: 14,001-33,000 GVW)	1,301	0.0048	0.0051	0.01	0.01	0.003	0.003
	Heavy-Heavy Duty Trucks (Gasoline: 33,001-60,000 GVW)	-	0.0177	0.0326	0.00	0.00	0.000	0.000
	Heavy-Heavy Duty Trucks Diesel: 33,001-60,000 GVW)	1,843	0.0048	0.0051	0.02	0.02	0.004	0.004
	Other Bus (Diesel)	108	0.0177	0.0326	0.00	0.01	0.001	0.001
	Urban Bus	-	0.0177	0.0326	0.00	0.00	0.000	0.000
	Motorcycle (Gasoline)	4,770	0.0177	0.0326	0.19	0.34	0.034	0.063
	School Bus (Diesel)	108	0.0048	0.0051	0.00	0.00	0.000	0.000
	Motor Home (Gasoline)	1,084	0.0177	0.0326	0.04	0.08	0.008	0.014
	Motor Home (Diesel)	109	0.0048	0.0051	0.00	0.00	0.000	0.000
		108,400			2.46	4.29	0.450	0.783

	Emission Factors		Total Emissions		Total Emissions	
	CH4 (lb/MWh)	N2O (lb/MWh)	CH4 (lb/day)	N2O (lb/day)	CH4 (t/y)	N2O (t/y)
1990	0.04	0.014				
1991	0.037	0.013				
1992	0.03	0.012				
1993	0.037	0.013				
1994	0.03	0.013				
1995	0.031	0.012				
1996	0.029	0.011				
1997	0.029	0.011				
1998	0.029	0.011				
1999	0.031	0.011				
2000	0.029	0.009				
2001	0.033	0.011				
2002	0.031	0.01				
2003	0.031	0.011				
2004	0.029	0.011	0.7	0.3	0.12	0.04

	kWh	MWh
Total Project (year)	8,876,538.0	8,876.5
Total Project (day)	24,319.3	24.3

Land Use Type	Size	Unit	Natural Gas Usage Rate (CF/Unit/Mc)	Natural Gas Usafe (CF/Day)
Single Family Residential		Unit	6,665.0	-
Multi Family Residential		Unit	4,011.5	-
Retail/Shopping	327329	Sq. Ft.	2.9	31,208.4
Hotel/Motel		Sq. Ft.	4.8	-
Office		Sq. Ft.	2.0	-
Industrial		Industry	241,611.0	-

MMBtu (daily)	Emission Factors		Total Emissions	
	CH4 (g/MMBtu)	N2O (g/MMBtu)	CH4 (lb/day)	N2O (lb/day)
-	5	0.1	0.000	0.000
-	5	0.1	0.000	0.000
30.4	5	0.1	0.334	0.007
-	5	0.1	0.000	0.000
-	5	0.1	0.000	0.000
-	1	0.1	0.000	0.000
			0.334	0.007

CH4 (t/y)	N2O (t/y)
0.000	0.000
0.000	0.000
0.055	0.001
0.000	0.000
0.000	0.000
0.000	0.000
0.055	0.001