
Appendix B Air Quality Data

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/1/2010-6/28/2010 Active Days: 20	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Demolition 06/01/2010-06/28/2010	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Fugitive Dust	0.00	0.00	0.00	0.00	3.95	0.00	3.95	0.82	0.00	0.82	0.00
Demo Off Road Diesel	3.50	26.25	15.30	0.00	0.00	1.62	1.62	0.00	1.49	1.49	2,281.38
Demo On Road Diesel	0.31	4.07	1.56	0.01	0.02	0.17	0.18	0.01	0.15	0.16	553.35
Demo Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 6/29/2010-7/30/2010 Active Days: 24	3.04	25.05	13.51	0.00	100.01	1.25	101.26	20.89	1.15	22.04	2,371.71
Mass Grading 06/29/2010-07/30/2010	3.04	25.05	13.51	0.00	100.01	1.25	101.26	20.89	1.15	22.04	2,371.71
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39

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Time Slice 8/2/2010-8/13/2010 Active Days: 10	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 8/16/2010-8/20/2010 Active Days: 5	6.30	51.50	28.06	0.00	<u>100.01</u>	2.68	<u>102.69</u>	<u>20.89</u>	2.46	<u>23.35</u>	5,002.00
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Trenching 08/16/2010-08/22/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 8/23/2010-9/14/2010 Active Days: 17	10.35	44.20	53.14	0.05	0.21	3.02	3.24	0.08	2.77	2.85	7,775.82
Asphalt 08/23/2010-09/14/2010	5.42	20.47	12.47	0.01	0.04	1.51	1.55	0.01	1.39	1.40	2,126.21
Paving Off-Gas	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	14.87	8.27	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,131.92
Paving On Road Diesel	0.42	5.48	2.10	0.01	0.02	0.22	0.25	0.01	0.21	0.21	745.51
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57

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Time Slice 9/15/2010-12/31/2010	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Active Days: 78											
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57
Time Slice 1/3/2011-10/14/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Active Days: 205											
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Time Slice 10/17/2011-11/30/2011	64.69	22.31	40.74	0.04	0.19	1.44	1.63	0.07	1.32	1.38	5,965.21
Active Days: 33											
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Coating 10/15/2011-11/30/2011	60.13	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23
Architectural Coating	60.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.08	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

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Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

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

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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

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

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- 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 8/22/2010 - 11/30/2011 - 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
- 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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
- Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100
- 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

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Construction Unmitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/1/2010-6/28/2010	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Active Days: 20											
Demolition 06/01/2010-06/28/2010	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Fugitive Dust	0.00	0.00	0.00	0.00	3.95	0.00	3.95	0.82	0.00	0.82	0.00
Demo Off Road Diesel	3.50	26.25	15.30	0.00	0.00	1.62	1.62	0.00	1.49	1.49	2,281.38
Demo On Road Diesel	0.31	4.07	1.56	0.01	0.02	0.17	0.18	0.01	0.15	0.16	553.35
Demo Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 6/29/2010-7/30/2010	3.04	25.05	13.51	0.00	100.01	1.25	101.26	20.89	1.15	22.04	2,371.71
Active Days: 24											
Mass Grading 06/29/2010-07/30/2010	3.04	25.05	13.51	0.00	100.01	1.25	101.26	20.89	1.15	22.04	2,371.71
Mass Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39

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Time Slice 8/2/2010-8/13/2010 Active Days: 10	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 8/16/2010-8/20/2010 Active Days: 5	6.30	51.50	28.06	0.00	100.01	2.68	102.69	20.89	2.46	23.35	5,002.00
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	100.01	1.80	101.81	20.89	1.65	22.54	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	100.00	0.00	100.00	20.88	0.00	20.88	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Trenching 08/16/2010-08/22/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 8/23/2010-9/14/2010 Active Days: 17	10.35	44.20	53.14	0.05	0.21	3.02	3.24	0.08	2.77	2.85	7,775.82
Asphalt 08/23/2010-09/14/2010	5.42	20.47	12.47	0.01	0.04	1.51	1.55	0.01	1.39	1.40	2,126.21
Paving Off-Gas	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	14.87	8.27	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,131.92
Paving On Road Diesel	0.42	5.48	2.10	0.01	0.02	0.22	0.25	0.01	0.21	0.21	745.51
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57

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Time Slice 9/15/2010-12/31/2010 Active Days: 78	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57
Time Slice 1/3/2011-10/14/2011 Active Days: 205	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Time Slice 10/17/2011-11/30/2011 Active Days: 33	64.69	22.31	40.74	0.04	0.19	1.44	1.63	0.07	1.32	1.38	5,965.21
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Coating 10/15/2011-11/30/2011	60.13	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23
Architectural Coating	60.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.08	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

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Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

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

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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

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

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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 8/22/2010 - 11/30/2011 - 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

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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2010	0.39	2.20	2.55	0.00	2.00	0.13	2.13	0.42	0.12	0.54	373.11
Demolition 06/01/2010-06/28/2010	0.04	0.30	0.18	0.00	0.04	0.02	0.06	0.01	0.02	0.02	29.90
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.03	0.26	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.01	22.81
Demo On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55
Mass Grading 06/29/2010-07/30/2010	0.04	0.30	0.16	0.00	1.20	0.02	1.22	0.25	0.01	0.26	28.46
Mass Grading Dust	0.00	0.00	0.00	0.00	1.20	0.00	1.20	0.25	0.00	0.25	0.00
Mass Grading Off Road Diesel	0.04	0.30	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.97
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49
Fine Grading 08/01/2010-08/22/2010	0.03	0.25	0.14	0.00	0.75	0.01	0.76	0.16	0.01	0.17	23.72
Fine Grading Dust	0.00	0.00	0.00	0.00	0.75	0.00	0.75	0.16	0.00	0.16	0.00
Fine Grading Off Road Diesel	0.03	0.25	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.56
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17

Trenching 08/16/2010-08/22/2010	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60
Trenching Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.29
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Asphalt 08/23/2010-09/14/2010	0.05	0.17	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	18.07
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	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	9.62
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.34
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11
Building 08/22/2010-11/30/2011	0.23	1.13	1.93	0.00	0.01	0.07	0.08	0.00	0.07	0.07	268.36
Building Off Road Diesel	0.17	0.79	0.53	0.00	0.00	0.06	0.06	0.00	0.05	0.05	77.01
Building Vendor Trips	0.02	0.27	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.11
Building Worker Trips	0.04	0.07	1.19	0.00	0.01	0.00	0.01	0.00	0.00	0.01	141.24
2011	1.53	2.64	4.59	0.00	0.02	0.17	0.19	0.01	0.16	0.16	677.45
Building 08/22/2010-11/30/2011	0.54	2.64	4.55	0.00	0.02	0.17	0.19	0.01	0.16	0.16	672.23
Building Off Road Diesel	0.40	1.86	1.29	0.00	0.00	0.14	0.14	0.00	0.12	0.12	192.92
Building Vendor Trips	0.05	0.61	0.49	0.00	0.00	0.03	0.03	0.00	0.02	0.02	125.53
Building Worker Trips	0.09	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.01	353.78
Coating 10/15/2011-11/30/2011	0.99	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22
Architectural Coating	0.99	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	5.22

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

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

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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

Off-Road Equipment:

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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 8/22/2010 - 11/30/2011 - 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

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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/1/2010-6/28/2010 Active Days: 20	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Demolition 06/01/2010-06/28/2010	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Fugitive Dust	0.00	0.00	0.00	0.00	3.95	0.00	3.95	0.82	0.00	0.82	0.00
Demo Off Road Diesel	3.50	26.25	15.30	0.00	0.00	1.62	1.62	0.00	1.49	1.49	2,281.38
Demo On Road Diesel	0.31	4.07	1.56	0.01	0.02	0.17	0.18	0.01	0.15	0.16	553.35
Demo Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 6/29/2010-7/30/2010 Active Days: 24	3.04	25.05	13.51	0.00	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
Mass Grading 06/29/2010-07/30/2010	3.04	25.05	13.51	0.00	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
Mass Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39

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Time Slice 8/2/2010-8/13/2010 Active Days: 10	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 8/16/2010-8/20/2010 Active Days: 5	6.30	51.50	28.06	0.00	<u>6.05</u>	2.68	<u>8.73</u>	<u>1.27</u>	2.46	<u>3.73</u>	5,002.00
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Trenching 08/16/2010-08/22/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 8/23/2010-9/14/2010 Active Days: 17	10.35	44.20	53.14	0.05	0.21	3.02	3.24	0.08	2.77	2.85	7,775.82
Asphalt 08/23/2010-09/14/2010	5.42	20.47	12.47	0.01	0.04	1.51	1.55	0.01	1.39	1.40	2,126.21
Paving Off-Gas	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	14.87	8.27	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,131.92
Paving On Road Diesel	0.42	5.48	2.10	0.01	0.02	0.22	0.25	0.01	0.21	0.21	745.51
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57

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Time Slice 9/15/2010-12/31/2010 Active Days: 78	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57
Time Slice 1/3/2011-10/14/2011 Active Days: 205	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Time Slice 10/17/2011-11/30/2011 Active Days: 33	64.69	22.31	40.74	0.04	0.19	1.44	1.63	0.07	1.32	1.38	5,965.21
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Coating 10/15/2011-11/30/2011	60.13	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23
Architectural Coating	60.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.08	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation
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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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

PM10: 69% PM25: 69%

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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%

The following mitigation measures apply to Phase: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation
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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

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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
- 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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

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 8/22/2010 - 11/30/2011 - Default Building Construction Description

Off-Road Equipment:

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

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- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Construction Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Winter Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/1/2010-6/28/2010 Active Days: 20	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Demolition 06/01/2010-06/28/2010	3.85	30.40	18.17	0.01	3.97	1.80	5.77	0.83	1.65	2.48	2,990.22
Fugitive Dust	0.00	0.00	0.00	0.00	3.95	0.00	3.95	0.82	0.00	0.82	0.00
Demo Off Road Diesel	3.50	26.25	15.30	0.00	0.00	1.62	1.62	0.00	1.49	1.49	2,281.38
Demo On Road Diesel	0.31	4.07	1.56	0.01	0.02	0.17	0.18	0.01	0.15	0.16	553.35
Demo Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 6/29/2010-7/30/2010 Active Days: 24	3.04	25.05	13.51	0.00	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
Mass Grading 06/29/2010-07/30/2010	3.04	25.05	13.51	0.00	6.04	1.25	7.30	1.26	1.15	2.41	2,371.71
Mass Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39

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Time Slice 8/2/2010-8/13/2010 Active Days: 10	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 8/16/2010-8/20/2010 Active Days: 5	6.30	51.50	28.06	0.00	<u>6.05</u>	2.68	<u>8.73</u>	<u>1.27</u>	2.46	<u>3.73</u>	5,002.00
Fine Grading 08/01/2010-08/22/2010	4.21	33.75	18.79	0.00	6.05	1.80	7.84	1.26	1.65	2.92	3,162.97
Fine Grading Dust	0.00	0.00	0.00	0.00	6.04	0.00	6.04	1.26	0.00	1.26	0.00
Fine Grading Off Road Diesel	4.16	33.67	17.48	0.00	0.00	1.79	1.79	0.00	1.65	1.65	3,007.48
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.08	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Trenching 08/16/2010-08/22/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 8/23/2010-9/14/2010 Active Days: 17	10.35	44.20	53.14	0.05	0.21	3.02	3.24	0.08	2.77	2.85	7,775.82
Asphalt 08/23/2010-09/14/2010	5.42	20.47	12.47	0.01	0.04	1.51	1.55	0.01	1.39	1.40	2,126.21
Paving Off-Gas	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	14.87	8.27	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,131.92
Paving On Road Diesel	0.42	5.48	2.10	0.01	0.02	0.22	0.25	0.01	0.21	0.21	745.51
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57

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Time Slice 9/15/2010-12/31/2010 Active Days: 78	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building 08/22/2010-11/30/2011	4.93	23.73	40.67	0.04	0.18	1.51	1.69	0.06	1.38	1.45	5,649.61
Building Off Road Diesel	3.65	16.55	11.20	0.00	0.00	1.19	1.19	0.00	1.10	1.10	1,621.20
Building Vendor Trips	0.49	5.71	4.41	0.01	0.04	0.24	0.28	0.01	0.22	0.23	1,054.84
Building Worker Trips	0.79	1.48	25.06	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,973.57
Time Slice 1/3/2011-10/14/2011 Active Days: 205	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Time Slice 10/17/2011-11/30/2011 Active Days: 33	64.69	22.31	40.74	0.04	0.19	1.44	1.63	0.07	1.32	1.38	5,965.21
Building 08/22/2010-11/30/2011	4.56	22.17	38.26	0.04	0.18	1.43	1.61	0.06	1.31	1.37	5,648.98
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.46	5.15	4.09	0.01	0.04	0.21	0.25	0.01	0.19	0.21	1,054.86
Building Worker Trips	0.72	1.35	23.32	0.03	0.14	0.08	0.22	0.05	0.07	0.12	2,972.92
Coating 10/15/2011-11/30/2011	60.13	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23
Architectural Coating	60.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.08	0.14	2.48	0.00	0.01	0.01	0.02	0.01	0.01	0.01	316.23

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation
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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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

PM10: 69% PM25: 69%

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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%

The following mitigation measures apply to Phase: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation
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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

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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
- 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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

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 8/22/2010 - 11/30/2011 - Default Building Construction Description

Off-Road Equipment:

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

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- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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

Detail Report for Annual Construction Mitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Redevelopment Agency Parcels.urb924

Project Name: Santa Ana Redevelopment Agency Parcels

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2010	0.39	2.20	2.55	0.00	0.17	0.13	0.30	0.04	0.12	0.16	373.11
Demolition 06/01/2010-06/28/2010	0.04	0.30	0.18	0.00	0.04	0.02	0.06	0.01	0.02	0.02	29.90
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.03	0.26	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.01	22.81
Demo On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55
Mass Grading 06/29/2010-07/30/2010	0.04	0.30	0.16	0.00	0.07	0.02	0.09	0.02	0.01	0.03	28.46
Mass Grading Dust	0.00	0.00	0.00	0.00	0.07	0.00	0.07	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.04	0.30	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.97
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49
Fine Grading 08/01/2010-08/22/2010	0.03	0.25	0.14	0.00	0.05	0.01	0.06	0.01	0.01	0.02	23.72
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.03	0.25	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.56
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17

Trenching 08/16/2010-08/22/2010	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60
Trenching Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.29
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Asphalt 08/23/2010-09/14/2010	0.05	0.17	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	18.07
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	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	9.62
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.34
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11
Building 08/22/2010-11/30/2011	0.23	1.13	1.93	0.00	0.01	0.07	0.08	0.00	0.07	0.07	268.36
Building Off Road Diesel	0.17	0.79	0.53	0.00	0.00	0.06	0.06	0.00	0.05	0.05	77.01
Building Vendor Trips	0.02	0.27	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.11
Building Worker Trips	0.04	0.07	1.19	0.00	0.01	0.00	0.01	0.00	0.00	0.01	141.24
2011	1.53	2.64	4.59	0.00	0.02	0.17	0.19	0.01	0.16	0.16	677.45
Building 08/22/2010-11/30/2011	0.54	2.64	4.55	0.00	0.02	0.17	0.19	0.01	0.16	0.16	672.23
Building Off Road Diesel	0.40	1.86	1.29	0.00	0.00	0.14	0.14	0.00	0.12	0.12	192.92
Building Vendor Trips	0.05	0.61	0.49	0.00	0.00	0.03	0.03	0.00	0.02	0.02	125.53
Building Worker Trips	0.09	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.01	353.78
Coating 10/15/2011-11/30/2011	0.99	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.22
Architectural Coating	0.99	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	5.22

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation 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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Demolition 6/1/2010 - 6/28/2010 - Default Demolition Description

Building Volume Total (cubic feet): 120131.4

Building Volume Daily (cubic feet): 9400

On Road Truck Travel (VMT): 130.56

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 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

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

Phase: Fine Grading 8/1/2010 - 8/22/2010 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

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20 lbs per acre-day

On Road Truck Travel (VMT): 0

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

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: Mass Grading 6/29/2010 - 7/30/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 9.7

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 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 8/16/2010 - 8/22/2010 - Default Trenching Description

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 8/23/2010 - 9/14/2010 - Default Paving Description

Acres to be Paved: 8.33

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 8/22/2010 - 11/30/2011 - Default Building Construction Description

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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
- 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 10/15/2011 - 11/30/2011 - Default Architectural Coating Description

- Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
- Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50
- Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250
- Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100
- 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

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	3.53	45.87	21.07	0.00	0.09	0.09	58,264.85
Hearth - No Summer Emissions							
Landscape	3.23	0.21	20.67	0.00	0.06	0.06	32.68
Consumer Products	209.05						
Architectural Coatings	8.87						
TOTALS (lbs/day, mitigated)	224.68	46.08	41.74	0.00	0.15	0.15	58,297.53

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Residential Interior Use Low VOC Coating	10.00
For Residential Exterior Use Low VOC Coating	10.00
For Nonresidential Interior Use Low VOC Coating	10.00
For Nonresidential Exterior Use Low VOC Coating	10.00

Area Source Changes to Defaults

Urbemis 2007 Version 9.2.4

Detail Report for Winter Area Source Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Winter Pounds Per Day, Mitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	3.53	45.87	21.07	0.00	0.09	0.09	58,264.85
Hearth	638.31	49.23	1,768.56	4.94	274.18	263.93	66,321.71
Landscaping - No Winter Emissions							
Consumer Products	209.05						
Architectural Coatings	8.87						
TOTALS (lbs/day, Mitigated)	859.76	95.10	1,789.63	4.94	274.27	264.02	124,586.56

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
For Residential Interior Use Low VOC Coating	10.00
For Residential Exterior Use Low VOC Coating	10.00
For Nonresidential Interior Use Low VOC Coating	10.00
For Nonresidential Exterior Use Low VOC Coating	10.00

Area Source Changes to Defaults

Detail Report for Annual Area Source Mitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.64	8.37	3.84	0.00	0.02	0.02	10,633.33
Hearth	7.97	0.38	22.01	0.06	3.41	3.28	523.56
Landscape	0.59	0.04	3.77	0.00	0.01	0.01	5.96
Consumer Products	38.15						
Architectural Coatings	1.62						
TOTALS (tons/year, mitigated)	48.97	8.79	29.62	0.06	3.44	3.31	11,162.85

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Residential Interior Use Low VOC Coating	10.00
For Residential Exterior Use Low VOC Coating	10.00
For Nonresidential Interior Use Low VOC Coating	10.00
For Nonresidential Exterior Use Low VOC Coating	10.00

Area Source Changes to Defaults

Detail Report for Summer Operational Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	12.04	12.65	134.08	0.34	55.92	10.87	33,864.59
Condo/townhouse general	90.47	90.91	963.24	2.47	401.76	78.06	243,290.16
Condo/townhouse high rise	7.30	6.66	70.61	0.18	29.45	5.72	17,834.64
City park	0.14	0.09	0.90	0.00	0.39	0.08	233.72
Strip mall	49.70	58.53	591.62	1.57	257.31	49.89	154,534.33
TOTALS (lbs/day, mitigated)	159.65	168.84	1,760.45	4.56	744.83	144.62	449,757.44

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2025 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day))

Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips

Inputs Selected:

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

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.

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	15.61	24.82	225.43

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		42.94	1000 sq ft	387.00	16,617.78	149,111.33
					44,569.15	431,473.11

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.2	0.0	98.6	1.4
Light Truck 3751-5750 lbs	23.6	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	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	2.8	35.7	64.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

Operational Changes to Defaults

Detail Report for Winter Operational Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	12.81	15.19	125.66	0.29	55.92	10.87	30,633.79
Condo/townhouse general	94.05	109.11	902.75	2.06	401.76	78.06	220,079.43
Condo/townhouse high rise	7.23	8.00	66.18	0.15	29.45	5.72	16,133.16
City park	0.12	0.11	0.84	0.00	0.39	0.08	211.24
Strip mall	55.73	70.17	557.74	1.30	257.31	49.89	139,660.51
TOTALS (lbs/day, mitigated)	169.94	202.58	1,653.17	3.80	744.83	144.62	406,718.13

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2025 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day))

Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips

Inputs Selected:

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

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.

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	15.61	24.82	225.43

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		42.94	1000 sq ft	387.00	16,617.78	149,111.33
					44,569.15	431,473.11

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.2	0.0	98.6	1.4
Light Truck 3751-5750 lbs	23.6	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	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	2.8	35.7	64.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

Operational Changes to Defaults

Detail Report for Annual Operational Mitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Proposed Project\Santa Ana SP - Operational Emissions 01-18-2010.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	2.24	2.46	23.96	0.06	10.21	1.98	5,983.75
Condo/townhouse general	16.73	17.70	172.11	0.43	73.32	14.25	42,988.47
Condo/townhouse high rise	1.33	1.30	12.62	0.03	5.37	1.04	3,151.32
City park	0.02	0.02	0.16	0.00	0.07	0.01	41.29
Strip mall	9.44	11.39	105.91	0.27	46.96	9.11	27,297.69
TOTALS (tons/year, mitigated)	29.76	32.87	314.76	0.79	135.93	26.39	79,462.52

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2025 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day))

Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips

Inputs Selected:

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

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.

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	15.61	24.82	225.43

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		42.94	1000 sq ft	387.00	16,617.78	149,111.33
					44,569.15	431,473.11

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.2	0.0	98.6	1.4
Light Truck 3751-5750 lbs	23.6	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	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	2.8	35.7	64.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

Operational Changes to Defaults