APPENDIX D

AIR QUALITY DATA

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Big Wave-San Mateo County\URBEMIS\Big Wave Wellness Center.urb924

Project Name: Big Wave Wellness Center

Project Location: San Mateo County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	19.67	173.38	88.51	0.04	84.43	6.90	89.10	17.64	6.35	21.93	23,220.56
2010 TOTALS (lbs/day mitigated)	19.67	173.38	88.51	0.04	5.39	6.90	10.06	1.13	6.35	6.40	23,220.56
2011 TOTALS (lbs/day unmitigated)	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
2011 TOTALS (lbs/day mitigated)	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
2012 TOTALS (lbs/day unmitigated)	17.58	145.40	78.81	0.04	14.81	5.60	16.98	3.09	5.14	5.20	23,223.79
2012 TOTALS (lbs/day mitigated)	17.58	145.40	78.81	0.04	0.95	5.60	5.75	0.20	5.14	5.20	23,223.79

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	6.30	2.84	11.33	0.00	0.03	0.03	3,319.51

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TOTALS (lbs/day, mitigated)	6.26	2.29	10.92	0.00	0.03	0.03	2,658.97
Percent Reduction	0.63	19.37	3.62	NaN	0.00	0.00	19.90

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	12.45	9.64	142.05	0.15	28.59	5.34	15,898.29
TOTALS (lbs/day, mitigated)	12.46	9.67	142.44	0.15	28.67	5.36	15,942.00
Percent Reduction	-0.08	-0.31	-0.27	0.00	-0.28	-0.37	-0.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	18.75	12.48	153.38	0.15	28.62	5.37	19,217.80
TOTALS (lbs/day, mitigated)	18.72	11.96	153.36	0.15	28.70	5.39	18,600.97
Percent Reduction	0.16	4.17	0.01	0.00	-0.28	-0.37	3.21

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/1/2010-6/30/2010 Active Days: 22	12.33	115.91	48.31	0.01	**84.43**	4.67	**89.10**	**17.64**	4.29	**21.93**	11,792.68
Fine Grading 06/01/2010-06/30/2010	12.33	115.91	48.31	0.01	84.43	4.67	89.10	17.64	4.29	21.93	11,792.68
Fine Grading Dust	0.00	0.00	0.00	0.00	84.40	0.00	84.40	17.63	0.00	17.63	0.00
Fine Grading Off Road Diesel	11.98	111.07	45.03	0.00	0.00	4.49	4.49	0.00	4.13	4.13	10,882.72
Fine Grading On Road Diesel	0.30	4.75	1.56	0.01	0.03	0.18	0.21	0.01	0.16	0.17	750.30
Fine Grading Worker Trips	0.05	0.09	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	159.66

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Time Slice 7/1/2010-7/30/2010 Active Days: 22	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching 07/01/2010-07/31/2010	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching Off Road Diesel	4.94	43.24	16.91	0.00	0.00	1.82	1.82	0.00	1.67	1.67	4,823.25
Trenching Worker Trips	0.08	0.13	2.56	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.50
Time Slice 8/2/2010-9/30/2010 Active Days: 44	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 08/01/2010-09/30/2010	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 10/1/2010-12/31/2010 Active Days: 66	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 10/01/2010-03/31/2012	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 1/3/2011-12/30/2011 Active Days: 260	18.37	158.73	83.29	**0.04**	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building 10/01/2010-03/31/2012	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building Off Road Diesel	17.29	152.49	56.22	0.00	0.00	6.02	6.02	0.00	5.54	5.54	19,659.21
Building Vendor Trips	0.39	5.09	3.93	0.01	0.04	0.19	0.24	0.01	0.18	0.19	1,223.18
Building Worker Trips	0.69	1.15	23.14	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,339.99

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Time Slice 1/2/2012-3/30/2012 Active Days: 65	17.58	145.40	78.81	**0.04**	0.15	5.60	5.75	0.05	5.14	5.20	**23,223.79**
Building 10/01/2010-03/31/2012	17.58	145.40	78.81	0.04	0.15	5.60	5.75	0.05	5.14	5.20	23,223.79
Building Off Road Diesel	16.59	139.82	53.72	0.00	0.00	5.37	5.37	0.00	4.94	4.94	19,659.21
Building Vendor Trips	0.36	4.53	3.68	0.01	0.04	0.17	0.22	0.01	0.16	0.17	1,223.06
Building Worker Trips	0.63	1.05	21.41	0.02	0.11	0.06	0.17	0.04	0.05	0.09	2,341.52
Time Slice 4/2/2012-4/30/2012 Active Days: 21	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Asphalt 04/01/2012-04/30/2012	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.65	16.20	10.06	0.00	0.00	1.41	1.41	0.00	1.29	1.29	1,418.44
Paving On Road Diesel	0.07	1.08	0.37	0.00	0.01	0.04	0.05	0.00	0.04	0.04	215.37
Paving Worker Trips	0.06	0.11	2.19	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.85
Time Slice 5/1/2012-10/31/2012 Active Days: 132	6.57	54.55	22.13	0.00	14.81	2.17	16.98	3.09	2.00	5.09	7,538.91
Fine Grading 05/01/2012-10/31/2012	6.57	54.55	22.13	0.00	14.81	2.17	16.98	3.09	2.00	5.09	7,538.91
Fine Grading Dust	0.00	0.00	0.00	0.00	14.80	0.00	14.80	3.09	0.00	3.09	0.00
Fine Grading Off Road Diesel	6.52	54.47	20.42	0.00	0.00	2.17	2.17	0.00	1.99	1.99	7,352.36
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	0.05	0.08	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	186.55

Phase Assumptions

Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

Total Acres Disturbed: 11.6

Maximum Daily Acreage Disturbed: 4.22

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 186.36

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Scrapers (637 hp) operating at a 0.72 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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

Total Acres Disturbed: 0.74

Maximum Daily Acreage Disturbed: 0.74

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

4 Off Highway Trucks (479 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 7 hours per day

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

Phase: Trenching 7/1/2010 - 7/31/2010 - Utilities Installation

Off-Road Equipment:

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

2 Off Highway Trucks (479 hp) operating at a 0.57 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

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

Phase: Paving 4/1/2012 - 4/30/2012 - permeable parking lots and fire trails

Acres to be Paved: 3.97

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

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

Phase: Building Construction 8/1/2010 - 9/30/2010 - Foundation construction

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Phase: Building Construction 10/1/2010 - 3/31/2012 - Wellness Center & Office Park

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/1/2010-6/30/2010 Active Days: 22	12.33	115.91	48.31	0.01	5.39	4.67	10.06	1.13	4.29	5.43	11,792.68
Fine Grading 06/01/2010-06/30/2010	12.33	115.91	48.31	0.01	5.39	4.67	10.06	1.13	4.29	5.43	11,792.68
Fine Grading Dust	0.00	0.00	0.00	0.00	5.36	0.00	5.36	1.12	0.00	1.12	0.00
Fine Grading Off Road Diesel	11.98	111.07	45.03	0.00	0.00	4.49	4.49	0.00	4.13	4.13	10,882.72
Fine Grading On Road Diesel	0.30	4.75	1.56	0.01	0.03	0.18	0.21	0.01	0.16	0.17	750.30
Fine Grading Worker Trips	0.05	0.09	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	159.66
Time Slice 7/1/2010-7/30/2010 Active Days: 22	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching 07/01/2010-07/31/2010	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching Off Road Diesel	4.94	43.24	16.91	0.00	0.00	1.82	1.82	0.00	1.67	1.67	4,823.25
Trenching Worker Trips	0.08	0.13	2.56	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.50
Time Slice 8/2/2010-9/30/2010 Active Days: 44	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 08/01/2010-09/30/2010	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 10/1/2010-12/31/2010 Active Days: 66	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 10/01/2010-03/31/2012	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09

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Time Slice 1/3/2011-12/30/2011 Active Days: 260	18.37	158.73	83.29	**0.04**	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building 10/01/2010-03/31/2012	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building Off Road Diesel	17.29	152.49	56.22	0.00	0.00	6.02	6.02	0.00	5.54	5.54	19,659.21
Building Vendor Trips	0.39	5.09	3.93	0.01	0.04	0.19	0.24	0.01	0.18	0.19	1,223.18
Building Worker Trips	0.69	1.15	23.14	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,339.99
Time Slice 1/2/2012-3/30/2012 Active Days: 65	17.58	145.40	78.81	**0.04**	0.15	5.60	5.75	0.05	5.14	5.20	**23,223.79**
Building 10/01/2010-03/31/2012	17.58	145.40	78.81	0.04	0.15	5.60	5.75	0.05	5.14	5.20	23,223.79
Building Off Road Diesel	16.59	139.82	53.72	0.00	0.00	5.37	5.37	0.00	4.94	4.94	19,659.21
Building Vendor Trips	0.36	4.53	3.68	0.01	0.04	0.17	0.22	0.01	0.16	0.17	1,223.06
Building Worker Trips	0.63	1.05	21.41	0.02	0.11	0.06	0.17	0.04	0.05	0.09	2,341.52
Time Slice 4/2/2012-4/30/2012 Active Days: 21	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Asphalt 04/01/2012-04/30/2012	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.65	16.20	10.06	0.00	0.00	1.41	1.41	0.00	1.29	1.29	1,418.44
Paving On Road Diesel	0.07	1.08	0.37	0.00	0.01	0.04	0.05	0.00	0.04	0.04	215.37
Paving Worker Trips	0.06	0.11	2.19	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.85
Time Slice 5/1/2012-10/31/2012 Active Days: 132	6.57	54.55	22.13	0.00	0.95	2.17	3.12	0.20	2.00	2.20	7,538.91
Fine Grading 05/01/2012-10/31/2012	6.57	54.55	22.13	0.00	0.95	2.17	3.12	0.20	2.00	2.20	7,538.91
Fine Grading Dust	0.00	0.00	0.00	0.00	0.94	0.00	0.94	0.20	0.00	0.20	0.00
Fine Grading Off Road Diesel	6.52	54.47	20.42	0.00	0.00	2.17	2.17	0.00	1.99	1.99	7,352.36
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	0.05	0.08	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	186.55

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.20	2.72	2.06	0.00	0.00	0.00	3,302.66
Hearth							
Landscape	0.74	0.12	9.27	0.00	0.03	0.03	16.85
Consumer Products	3.42						
Architectural Coatings	1.94						
TOTALS (lbs/day, unmitigated)	6.30	2.84	11.33	0.00	0.03	0.03	3,319.51

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.16	2.17	1.65	0.00	0.00	0.00	2,642.12
Hearth							
Landscape	0.74	0.12	9.27	0.00	0.03	0.03	16.85
Consumer Products	3.42						
Architectural Coatings	1.94						
TOTALS (lbs/day, mitigated)	6.26	2.29	10.92	0.00	0.03	0.03	2,658.97

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00

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Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	1.33	0.65	9.90	0.01	1.94	0.36	1,086.81
Racquetball/health	0.79	0.77	11.15	0.01	2.28	0.43	1,264.41
General office building	5.35	4.62	68.67	0.08	13.72	2.56	7,640.69
Manufacturing	1.25	0.83	12.44	0.01	2.46	0.46	1,374.11
Research & Development	2.42	1.95	28.10	0.03	5.77	1.08	3,192.93
Storage	1.31	0.82	11.79	0.01	2.42	0.45	1,339.34
TOTALS (lbs/day, unmitigated)	12.45	9.64	142.05	0.15	28.59	5.34	15,898.29

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	1.33	0.66	10.00	0.01	1.96	0.37	1,098.61
Racquetball/health	0.79	0.77	11.18	0.01	2.29	0.43	1,267.13
General office building	5.36	4.63	68.82	0.08	13.75	2.57	7,657.15
Manufacturing	1.25	0.83	12.47	0.01	2.47	0.46	1,377.07
Research & Development	2.42	1.96	28.16	0.03	5.78	1.08	3,199.81
Storage	1.31	0.82	11.81	0.01	2.42	0.45	1,342.23
TOTALS (lbs/day, mitigated)	12.46	9.67	142.44	0.15	28.67	5.36	15,942.00

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Mix of Uses Mitigation

NOTE this mitigation measure INCREASES Trips by 0.22%

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 number of housing units within a 1/2 mile radius of the project, plus the

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Residential Local-Serving Retail Mitigation

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 Mix of Uses Mitigation

NOTE this mitigation measure INCREASES Trips by 0.22%

Inputs Selected:

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Nonresidential Mitigation Measures

The number of housing units within a 1/2 mile radius of the project, plus the

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 90 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
Apartments low rise	4.38	1.90	dwelling units	70.00	133.00	1,137.11
Racquetball/health		33.80	1000 sq ft	5.30	179.14	1,335.94
General office building		11.01	1000 sq ft	90.00	990.90	8,028.77
Manufacturing		3.82	1000 sq ft	45.00	171.90	1,440.87
Research & Development		8.11	1000 sq ft	56.30	456.59	3,375.59

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Storage		3.56	1000 sq ft	53.80	191.53	1,415.97
					2,123.06	16,734.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	60.6	0.5	99.3	0.2
Light Truck < 3750 lbs	7.7	0.8	97.5	1.7
Light Truck 3751-5750 lbs	25.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	1.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.2	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.1	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	0.1	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.6	57.1	42.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	100.0	0.0

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

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)						
Racquetball/health				5.0	2.5	92.5
General office building				35.0	17.5	47.5
Manufacturing				48.0	24.0	28.0
Research & Development				2.0	1.0	97.0
Storage				2.0	1.0	97.0

Operational Changes to Defaults

Ambient summer temperature changed from 85 degrees F to 90 degrees F

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Big Wave-San Mateo County\URBEMIS\Big Wave Wellness Center.urb924

Project Name: Big Wave Wellness Center

Project Location: San Mateo County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	19.67	173.38	88.51	0.04	84.43	6.90	89.10	17.64	6.35	21.93	23,220.56
2010 TOTALS (lbs/day mitigated)	19.67	173.38	88.51	0.04	5.39	6.90	10.06	1.13	6.35	6.40	23,220.56
2011 TOTALS (lbs/day unmitigated)	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
2011 TOTALS (lbs/day mitigated)	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
2012 TOTALS (lbs/day unmitigated)	17.58	145.40	78.81	0.04	14.81	5.60	16.98	3.09	5.14	5.20	23,223.79
2012 TOTALS (lbs/day mitigated)	17.58	145.40	78.81	0.04	0.95	5.60	5.75	0.20	5.14	5.20	23,223.79

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.56	2.72	2.06	0.00	0.00	0.00	3,302.66

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TOTALS (lbs/day, mitigated)	5.52	2.17	1.65	0.00	0.00	0.00	2,642.12
Percent Reduction	0.72	20.22	19.90	NaN	NaN	NaN	20.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	11.14	15.69	138.46	0.13	28.59	5.34	12,995.77
TOTALS (lbs/day, mitigated)	11.17	15.74	138.85	0.13	28.67	5.36	13,031.50
Percent Reduction	-0.27	-0.32	-0.28	0.00	-0.28	-0.37	-0.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	16.70	18.41	140.52	0.13	28.59	5.34	16,298.43
TOTALS (lbs/day, mitigated)	16.69	17.91	140.50	0.13	28.67	5.36	15,673.62
Percent Reduction	0.06	2.72	0.01	0.00	-0.28	-0.37	3.83

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/1/2010-6/30/2010 Active Days: 22	12.33	115.91	48.31	0.01	**84.43**	4.67	**89.10**	**17.64**	4.29	**21.93**	11,792.68
Fine Grading 06/01/2010-06/30/2010	12.33	115.91	48.31	0.01	84.43	4.67	89.10	17.64	4.29	21.93	11,792.68
Fine Grading Dust	0.00	0.00	0.00	0.00	84.40	0.00	84.40	17.63	0.00	17.63	0.00
Fine Grading Off Road Diesel	11.98	111.07	45.03	0.00	0.00	4.49	4.49	0.00	4.13	4.13	10,882.72
Fine Grading On Road Diesel	0.30	4.75	1.56	0.01	0.03	0.18	0.21	0.01	0.16	0.17	750.30
Fine Grading Worker Trips	0.05	0.09	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	159.66

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Time Slice 7/1/2010-7/30/2010 Active Days: 22	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching 07/01/2010-07/31/2010	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching Off Road Diesel	4.94	43.24	16.91	0.00	0.00	1.82	1.82	0.00	1.67	1.67	4,823.25
Trenching Worker Trips	0.08	0.13	2.56	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.50
Time Slice 8/2/2010-9/30/2010 Active Days: 44	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 08/01/2010-09/30/2010	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 10/1/2010-12/31/2010 Active Days: 66	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 10/01/2010-03/31/2012	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 1/3/2011-12/30/2011 Active Days: 260	18.37	158.73	83.29	**0.04**	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building 10/01/2010-03/31/2012	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building Off Road Diesel	17.29	152.49	56.22	0.00	0.00	6.02	6.02	0.00	5.54	5.54	19,659.21
Building Vendor Trips	0.39	5.09	3.93	0.01	0.04	0.19	0.24	0.01	0.18	0.19	1,223.18
Building Worker Trips	0.69	1.15	23.14	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,339.99

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Time Slice 1/2/2012-3/30/2012 Active Days: 65	17.58	145.40	78.81	**0.04**	0.15	5.60	5.75	0.05	5.14	5.20	**23,223.79**
Building 10/01/2010-03/31/2012	17.58	145.40	78.81	0.04	0.15	5.60	5.75	0.05	5.14	5.20	23,223.79
Building Off Road Diesel	16.59	139.82	53.72	0.00	0.00	5.37	5.37	0.00	4.94	4.94	19,659.21
Building Vendor Trips	0.36	4.53	3.68	0.01	0.04	0.17	0.22	0.01	0.16	0.17	1,223.06
Building Worker Trips	0.63	1.05	21.41	0.02	0.11	0.06	0.17	0.04	0.05	0.09	2,341.52
Time Slice 4/2/2012-4/30/2012 Active Days: 21	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Asphalt 04/01/2012-04/30/2012	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.65	16.20	10.06	0.00	0.00	1.41	1.41	0.00	1.29	1.29	1,418.44
Paving On Road Diesel	0.07	1.08	0.37	0.00	0.01	0.04	0.05	0.00	0.04	0.04	215.37
Paving Worker Trips	0.06	0.11	2.19	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.85
Time Slice 5/1/2012-10/31/2012 Active Days: 132	6.57	54.55	22.13	0.00	14.81	2.17	16.98	3.09	2.00	5.09	7,538.91
Fine Grading 05/01/2012-10/31/2012	6.57	54.55	22.13	0.00	14.81	2.17	16.98	3.09	2.00	5.09	7,538.91
Fine Grading Dust	0.00	0.00	0.00	0.00	14.80	0.00	14.80	3.09	0.00	3.09	0.00
Fine Grading Off Road Diesel	6.52	54.47	20.42	0.00	0.00	2.17	2.17	0.00	1.99	1.99	7,352.36
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	0.05	0.08	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	186.55

Phase Assumptions

Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

Total Acres Disturbed: 11.6

Maximum Daily Acreage Disturbed: 4.22

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 186.36

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Scrapers (637 hp) operating at a 0.72 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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

Total Acres Disturbed: 0.74

Maximum Daily Acreage Disturbed: 0.74

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

4 Off Highway Trucks (479 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 7 hours per day

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

Phase: Trenching 7/1/2010 - 7/31/2010 - Utilities Installation

Off-Road Equipment:

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

2 Off Highway Trucks (479 hp) operating at a 0.57 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

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

Phase: Paving 4/1/2012 - 4/30/2012 - permeable parking lots and fire trails

Acres to be Paved: 3.97

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

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

Phase: Building Construction 8/1/2010 - 9/30/2010 - Foundation construction

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Phase: Building Construction 10/1/2010 - 3/31/2012 - Wellness Center & Office Park

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 6/1/2010-6/30/2010 Active Days: 22	12.33	115.91	48.31	0.01	5.39	4.67	10.06	1.13	4.29	5.43	11,792.68
Fine Grading 06/01/2010-06/30/2010	12.33	115.91	48.31	0.01	5.39	4.67	10.06	1.13	4.29	5.43	11,792.68
Fine Grading Dust	0.00	0.00	0.00	0.00	5.36	0.00	5.36	1.12	0.00	1.12	0.00
Fine Grading Off Road Diesel	11.98	111.07	45.03	0.00	0.00	4.49	4.49	0.00	4.13	4.13	10,882.72
Fine Grading On Road Diesel	0.30	4.75	1.56	0.01	0.03	0.18	0.21	0.01	0.16	0.17	750.30
Fine Grading Worker Trips	0.05	0.09	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	159.66
Time Slice 7/1/2010-7/30/2010 Active Days: 22	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching 07/01/2010-07/31/2010	5.01	43.37	19.48	0.00	0.01	1.82	1.84	0.00	1.68	1.68	5,062.75
Trenching Off Road Diesel	4.94	43.24	16.91	0.00	0.00	1.82	1.82	0.00	1.67	1.67	4,823.25
Trenching Worker Trips	0.08	0.13	2.56	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.50
Time Slice 8/2/2010-9/30/2010 Active Days: 44	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 08/01/2010-09/30/2010	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09
Time Slice 10/1/2010-12/31/2010 Active Days: 66	**19.67**	**173.38**	**88.51**	**0.04**	0.15	**6.90**	7.06	0.05	**6.35**	6.40	23,220.56
Building 10/01/2010-03/31/2012	19.67	173.38	88.51	0.04	0.15	6.90	7.06	0.05	6.35	6.40	23,220.56
Building Off Road Diesel	18.49	166.44	59.26	0.00	0.00	6.63	6.63	0.00	6.10	6.10	19,659.21
Building Vendor Trips	0.42	5.68	4.21	0.01	0.04	0.22	0.26	0.01	0.20	0.21	1,223.26
Building Worker Trips	0.76	1.27	25.04	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,338.09

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Time Slice 1/3/2011-12/30/2011 Active Days: 260	18.37	158.73	83.29	**0.04**	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building 10/01/2010-03/31/2012	18.37	158.73	83.29	0.04	0.15	6.27	6.43	0.05	5.76	5.82	23,222.38
Building Off Road Diesel	17.29	152.49	56.22	0.00	0.00	6.02	6.02	0.00	5.54	5.54	19,659.21
Building Vendor Trips	0.39	5.09	3.93	0.01	0.04	0.19	0.24	0.01	0.18	0.19	1,223.18
Building Worker Trips	0.69	1.15	23.14	0.02	0.11	0.05	0.16	0.04	0.04	0.08	2,339.99
Time Slice 1/2/2012-3/30/2012 Active Days: 65	17.58	145.40	78.81	**0.04**	0.15	5.60	5.75	0.05	5.14	5.20	**23,223.79**
Building 10/01/2010-03/31/2012	17.58	145.40	78.81	0.04	0.15	5.60	5.75	0.05	5.14	5.20	23,223.79
Building Off Road Diesel	16.59	139.82	53.72	0.00	0.00	5.37	5.37	0.00	4.94	4.94	19,659.21
Building Vendor Trips	0.36	4.53	3.68	0.01	0.04	0.17	0.22	0.01	0.16	0.17	1,223.06
Building Worker Trips	0.63	1.05	21.41	0.02	0.11	0.06	0.17	0.04	0.05	0.09	2,341.52
Time Slice 4/2/2012-4/30/2012 Active Days: 21	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Asphalt 04/01/2012-04/30/2012	3.26	17.40	12.63	0.00	0.02	1.45	1.47	0.01	1.34	1.34	1,873.66
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.65	16.20	10.06	0.00	0.00	1.41	1.41	0.00	1.29	1.29	1,418.44
Paving On Road Diesel	0.07	1.08	0.37	0.00	0.01	0.04	0.05	0.00	0.04	0.04	215.37
Paving Worker Trips	0.06	0.11	2.19	0.00	0.01	0.01	0.02	0.00	0.00	0.01	239.85
Time Slice 5/1/2012-10/31/2012 Active Days: 132	6.57	54.55	22.13	0.00	0.95	2.17	3.12	0.20	2.00	2.20	7,538.91
Fine Grading 05/01/2012-10/31/2012	6.57	54.55	22.13	0.00	0.95	2.17	3.12	0.20	2.00	2.20	7,538.91
Fine Grading Dust	0.00	0.00	0.00	0.00	0.94	0.00	0.94	0.20	0.00	0.20	0.00
Fine Grading Off Road Diesel	6.52	54.47	20.42	0.00	0.00	2.17	2.17	0.00	1.99	1.99	7,352.36
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	0.05	0.08	1.71	0.00	0.01	0.00	0.01	0.00	0.00	0.01	186.55

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.20	2.72	2.06	0.00	0.00	0.00	3,302.66
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	3.42						
Architectural Coatings	1.94						
TOTALS (lbs/day, unmitigated)	5.56	2.72	2.06	0.00	0.00	0.00	3,302.66

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.16	2.17	1.65	0.00	0.00	0.00	2,642.12
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	3.42						
Architectural Coatings	1.94						
TOTALS (lbs/day, mitigated)	5.52	2.17	1.65	0.00	0.00	0.00	2,642.12

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00

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Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.76	1.06	9.53	0.01	1.94	0.36	889.58
Racquetball/health	0.90	1.26	11.03	0.01	2.28	0.43	1,032.69
General office building	5.31	7.52	66.41	0.06	13.72	2.56	6,248.11
Manufacturing	0.95	1.35	11.93	0.01	2.46	0.46	1,124.20
Research & Development	2.27	3.17	27.87	0.03	5.77	1.08	2,607.44
Storage	0.95	1.33	11.69	0.01	2.42	0.45	1,093.75
TOTALS (lbs/day, unmitigated)	11.14	15.69	138.46	0.13	28.59	5.34	12,995.77

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.77	1.08	9.63	0.01	1.96	0.37	899.24
Racquetball/health	0.90	1.26	11.06	0.01	2.29	0.43	1,034.92
General office building	5.33	7.54	66.56	0.06	13.75	2.57	6,261.57
Manufacturing	0.95	1.35	11.95	0.01	2.47	0.46	1,126.62
Research & Development	2.27	3.18	27.93	0.03	5.78	1.08	2,613.05
Storage	0.95	1.33	11.72	0.01	2.42	0.45	1,096.10
TOTALS (lbs/day, mitigated)	11.17	15.74	138.85	0.13	28.67	5.36	13,031.50

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Mix of Uses Mitigation

NOTE this mitigation measure INCREASES Trips by 0.22%

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 number of housing units within a 1/2 mile radius of the project, plus the

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Residential Local-Serving Retail Mitigation

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 Mix of Uses Mitigation

NOTE this mitigation measure INCREASES Trips by 0.22%

Inputs Selected:

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Nonresidential Mitigation Measures

The number of housing units within a 1/2 mile radius of the project, plus the

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 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
Apartments low rise	4.38	1.90	dwelling units	70.00	133.00	1,137.11
Racquetball/health		33.80	1000 sq ft	5.30	179.14	1,335.94
General office building		11.01	1000 sq ft	90.00	990.90	8,028.77
Manufacturing		3.82	1000 sq ft	45.00	171.90	1,440.87
Research & Development		8.11	1000 sq ft	56.30	456.59	3,375.59

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Storage		3.56	1000 sq ft	53.80	191.53	1,415.97
					2,123.06	16,734.25

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	60.6	0.5	99.3	0.2
Light Truck < 3750 lbs	7.7	0.8	97.5	1.7
Light Truck 3751-5750 lbs	25.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	1.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.2	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.1	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	0.1	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.6	57.1	42.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	100.0	0.0

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

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)						
Racquetball/health				5.0	2.5	92.5
General office building				35.0	17.5	47.5
Manufacturing				48.0	24.0	28.0
Research & Development				2.0	1.0	97.0
Storage				2.0	1.0	97.0

Operational Changes to Defaults

Ambient summer temperature changed from 85 degrees F to 90 degrees F

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Big Wave-San Mateo County\URBEMIS\Big Wave Wellness Center.urb924

Project Name: Big Wave Wellness Center

Project Location: San Mateo County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	1.27	11.29	5.61	0.00	0.94	0.45	1.39	0.20	0.41	0.61	1,462.54
2010 TOTALS (tons/year mitigated)	1.27	11.29	5.61	0.00	0.07	0.45	0.52	0.02	0.41	0.43	1,462.54
Percent Reduction	0.00	0.00	0.00	0.00	92.76	0.00	62.62	92.14	0.00	29.68	0.00
2011 TOTALS (tons/year unmitigated)	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
2011 TOTALS (tons/year mitigated)	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012 TOTALS (tons/year unmitigated)	1.04	8.51	4.15	0.00	0.98	0.34	1.32	0.21	0.31	0.52	1,272.01
2012 TOTALS (tons/year mitigated)	1.04	8.51	4.15	0.00	0.07	0.34	0.41	0.02	0.31	0.33	1,272.01
Percent Reduction	0.00	0.00	0.00	0.00	93.10	0.00	69.15	92.72	0.00	36.82	0.00

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AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.08	0.51	1.21	0.00	0.00	0.00	604.25
TOTALS (tons/year, mitigated)	1.07	0.41	1.13	0.00	0.00	0.00	483.71
Percent Reduction	0.93	19.61	6.61	NaN	NaN	NaN	19.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.19	2.12	25.71	0.02	5.21	0.98	2,724.87
TOTALS (tons/year, mitigated)	2.20	2.13	25.77	0.02	5.23	0.98	2,732.36
Percent Reduction	-0.46	-0.47	-0.23	0.00	-0.38	0.00	-0.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	3.27	2.63	26.92	0.02	5.21	0.98	3,329.12
TOTALS (tons/year, mitigated)	3.27	2.54	26.90	0.02	5.23	0.98	3,216.07
Percent Reduction	0.00	3.42	0.07	0.00	-0.38	0.00	3.40

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

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

2010	1.27	11.29	5.61	0.00	0.94	0.45	1.39	0.20	0.41	0.61	1,462.54
Fine Grading 06/01/2010-06/30/2010	0.14	1.28	0.53	0.00	0.93	0.05	0.98	0.19	0.05	0.24	129.72
Fine Grading Dust	0.00	0.00	0.00	0.00	0.93	0.00	0.93	0.19	0.00	0.19	0.00
Fine Grading Off Road Diesel	0.13	1.22	0.50	0.00	0.00	0.05	0.05	0.00	0.05	0.05	119.71
Fine Grading On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.25
Fine Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Trenching 07/01/2010-07/31/2010	0.06	0.48	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	55.69
Trenching Off Road Diesel	0.05	0.48	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	53.06
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.63
Building 08/01/2010-09/30/2010	0.43	3.81	1.95	0.00	0.00	0.15	0.16	0.00	0.14	0.14	510.85
Building Off Road Diesel	0.41	3.66	1.30	0.00	0.00	0.15	0.15	0.00	0.13	0.13	432.50
Building Vendor Trips	0.01	0.12	0.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	26.91
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.44
Building 10/01/2010-03/31/2012	0.65	5.72	2.92	0.00	0.01	0.23	0.23	0.00	0.21	0.21	766.28
Building Off Road Diesel	0.61	5.49	1.96	0.00	0.00	0.22	0.22	0.00	0.20	0.20	648.75
Building Vendor Trips	0.01	0.19	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.37
Building Worker Trips	0.03	0.04	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.16
2011	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
Building 10/01/2010-03/31/2012	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
Building Off Road Diesel	2.25	19.82	7.31	0.00	0.00	0.78	0.78	0.00	0.72	0.72	2,555.70
Building Vendor Trips	0.05	0.66	0.51	0.00	0.01	0.03	0.03	0.00	0.02	0.03	159.01
Building Worker Trips	0.09	0.15	3.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	304.20

2012	1.04	8.51	4.15	0.00	0.98	0.34	1.32	0.21	0.31	0.52	1,272.01
Building 10/01/2010-03/31/2012	0.57	4.73	2.56	0.00	0.01	0.18	0.19	0.00	0.17	0.17	754.77
Building Off Road Diesel	0.54	4.54	1.75	0.00	0.00	0.17	0.17	0.00	0.16	0.16	638.92
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	39.75
Building Worker Trips	0.02	0.03	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.10
Asphalt 04/01/2012-04/30/2012	0.03	0.18	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	19.67
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.17	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.89
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
Fine Grading 05/01/2012-10/31/2012	0.43	3.60	1.46	0.00	0.98	0.14	1.12	0.20	0.13	0.34	497.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.98	0.00	0.98	0.20	0.00	0.20	0.00
Fine Grading Off Road Diesel	0.43	3.59	1.35	0.00	0.00	0.14	0.14	0.00	0.13	0.13	485.26
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	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.31

Phase Assumptions

Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

Total Acres Disturbed: 11.6

Maximum Daily Acreage Disturbed: 4.22

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 186.36

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Scrapers (637 hp) operating at a 0.72 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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

Total Acres Disturbed: 0.74

Maximum Daily Acreage Disturbed: 0.74

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

4 Off Highway Trucks (479 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 7 hours per day

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

Phase: Trenching 7/1/2010 - 7/31/2010 - Utilities Installation

Off-Road Equipment:

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

2 Off Highway Trucks (479 hp) operating at a 0.57 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

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

Phase: Paving 4/1/2012 - 4/30/2012 - permeable parking lots and fire trails

Acres to be Paved: 3.97

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

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

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Phase: Building Construction 8/1/2010 - 9/30/2010 - Foundation construction

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Phase: Building Construction 10/1/2010 - 3/31/2012 - Wellness Center & Office Park

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

3 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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

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

10 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

1 Pumps (53 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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

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

2010	1.27	11.29	5.61	0.00	0.07	0.45	0.52	0.02	0.41	0.43	1,462.54
Fine Grading 06/01/2010-06/30/2010	0.14	1.28	0.53	0.00	0.06	0.05	0.11	0.01	0.05	0.06	129.72
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.13	1.22	0.50	0.00	0.00	0.05	0.05	0.00	0.05	0.05	119.71
Fine Grading On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.25
Fine Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Trenching 07/01/2010-07/31/2010	0.06	0.48	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	55.69
Trenching Off Road Diesel	0.05	0.48	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	53.06
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.63
Building 08/01/2010-09/30/2010	0.43	3.81	1.95	0.00	0.00	0.15	0.16	0.00	0.14	0.14	510.85
Building Off Road Diesel	0.41	3.66	1.30	0.00	0.00	0.15	0.15	0.00	0.13	0.13	432.50
Building Vendor Trips	0.01	0.12	0.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	26.91
Building Worker Trips	0.02	0.03	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.44
Building 10/01/2010-03/31/2012	0.65	5.72	2.92	0.00	0.01	0.23	0.23	0.00	0.21	0.21	766.28
Building Off Road Diesel	0.61	5.49	1.96	0.00	0.00	0.22	0.22	0.00	0.20	0.20	648.75
Building Vendor Trips	0.01	0.19	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	40.37
Building Worker Trips	0.03	0.04	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	77.16
2011	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
Building 10/01/2010-03/31/2012	2.39	20.64	10.83	0.00	0.02	0.82	0.84	0.01	0.75	0.76	3,018.91
Building Off Road Diesel	2.25	19.82	7.31	0.00	0.00	0.78	0.78	0.00	0.72	0.72	2,555.70
Building Vendor Trips	0.05	0.66	0.51	0.00	0.01	0.03	0.03	0.00	0.02	0.03	159.01
Building Worker Trips	0.09	0.15	3.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	304.20

2012	1.04	8.51	4.15	0.00	0.07	0.34	0.41	0.02	0.31	0.33	1,272.01
Building 10/01/2010-03/31/2012	0.57	4.73	2.56	0.00	0.01	0.18	0.19	0.00	0.17	0.17	754.77
Building Off Road Diesel	0.54	4.54	1.75	0.00	0.00	0.17	0.17	0.00	0.16	0.16	638.92
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	39.75
Building Worker Trips	0.02	0.03	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.10
Asphalt 04/01/2012-04/30/2012	0.03	0.18	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	19.67
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.17	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	14.89
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
Fine Grading 05/01/2012-10/31/2012	0.43	3.60	1.46	0.00	0.06	0.14	0.21	0.01	0.13	0.14	497.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.43	3.59	1.35	0.00	0.00	0.14	0.14	0.00	0.13	0.13	485.26
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	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.31

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 6/1/2010 - 6/30/2010 - Initial grading/materials sorting

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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%

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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: Fine Grading 5/1/2012 - 10/31/2012 - Wetlands and Landscaping

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

PM10: 84% PM25: 84%

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

PM10: 55% PM25: 55%

For Soil Stablizing 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%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.04	0.50	0.38	0.00	0.00	0.00	602.73
Hearth							
Landscape	0.07	0.01	0.83	0.00	0.00	0.00	1.52
Consumer Products	0.62						
Architectural Coatings	0.35						
TOTALS (tons/year, unmitigated)	1.08	0.51	1.21	0.00	0.00	0.00	604.25

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Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.03	0.40	0.30	0.00	0.00	0.00	482.19
Hearth							
Landscape	0.07	0.01	0.83	0.00	0.00	0.00	1.52
Consumer Products	0.62						
Architectural Coatings	0.35						
TOTALS (tons/year, mitigated)	1.07	0.41	1.13	0.00	0.00	0.00	483.71

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.21	0.14	1.78	0.00	0.35	0.07	186.35
Racquetball/health	0.15	0.17	2.03	0.00	0.42	0.08	216.66
General office building	0.97	1.02	12.40	0.01	2.50	0.47	1,309.71
Manufacturing	0.21	0.18	2.24	0.00	0.45	0.08	235.57
Research & Development	0.43	0.43	5.11	0.01	1.05	0.20	547.09
Storage	0.22	0.18	2.15	0.00	0.44	0.08	229.49
TOTALS (tons/year, unmitigated)	2.19	2.12	25.71	0.02	5.21	0.98	2,724.87

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.21	0.15	1.80	0.00	0.36	0.07	188.37
Racquetball/health	0.15	0.17	2.03	0.00	0.42	0.08	217.13
General office building	0.98	1.02	12.42	0.01	2.51	0.47	1,312.53
Manufacturing	0.21	0.18	2.24	0.00	0.45	0.08	236.08
Research & Development	0.43	0.43	5.13	0.01	1.05	0.20	548.27
Storage	0.22	0.18	2.15	0.00	0.44	0.08	229.98
TOTALS (tons/year, mitigated)	2.20	2.13	25.77	0.02	5.23	0.98	2,732.36

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Mix of Uses Mitigation

Operational Mitigation Options Selected

Residential Mitigation Measures

NOTE this mitigation measure INCREASES Trips by 0.22%

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 number of housing units within a 1/2 mile radius of the project, plus the

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Residential Local-Serving Retail Mitigation

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 Mix of Uses Mitigation

NOTE this mitigation measure INCREASES Trips by 0.22%

Inputs Selected:

The number of housing units within a 1/2 mile radius of the project, plus the

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Nonresidential Mitigation Measures

number of residential units included in the project are 63.

The employment for the study area (within a 1/2 mile radius of the project) is 720.

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 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
Apartments low rise	4.38	1.90	dwelling units	70.00	133.00	1,137.11
Racquetball/health		33.80	1000 sq ft	5.30	179.14	1,335.94
General office building		11.01	1000 sq ft	90.00	990.90	8,028.77
Manufacturing		3.82	1000 sq ft	45.00	171.90	1,440.87
Research & Development		8.11	1000 sq ft	56.30	456.59	3,375.59
Storage		3.56	1000 sq ft	53.80	191.53	1,415.97
					2,123.06	16,734.25

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	60.6	0.5	99.3	0.2
Light Truck < 3750 lbs	7.7	0.8	97.5	1.7
Light Truck 3751-5750 lbs	25.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	1.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.2	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	0.1	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	0.1	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.6	57.1	42.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	100.0	0.0

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			

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
% of Trips - Commercial (by land use)						
Racquetball/health				5.0	2.5	92.5
General office building				35.0	17.5	47.5
Manufacturing				48.0	24.0	28.0
Research & Development				2.0	1.0	97.0
Storage				2.0	1.0	97.0

Operational Changes to Defaults

Ambient summer temperature changed from 85 degrees F to 90 degrees F

EXPLANATION OF CHANGES MADE TO DEFAULT SETTINGS IN URBEMIS 2007

The following pages include the printed results of the air pollutant emissions modeling for one of the land use components of the proposed project. The air emissions modeling was conducted using the URBEMIS 2007 for Windows computer program. URBEMIS 2007 is programmed with EMFAC 2007 emission factors developed by the California Air Resources Board.

As part of this analysis, changes have been made to several of the default values programmed into URBEMIS 2007. These changes were made to more accurately reflect the nature of the proposed land use. Each of

Vehicle Trip Rates

The default vehicle trip rate values were changed to be consistent with the traffic impact analysis prepared

Vehicle Fleet Mix

URBEMIS 2007 is programmed with the following state-wide average vehicle fleet mix:

State-Wide Vehicle Type	Total	
Automobiles	53.5%	
Light-Duty Trucks <3,750 pounds	6.8%	
Light-Duty Trucks 3,751-5,750 pounds	22.9%	
Medium-Duty Trucks 5,751-8,500 pounds	10.0%	
Light-Heavy-Duty Trucks 8,501-10,000 pounds	1.5%	
Light-Heavy-Duty Trucks 10,001-14,000 pound	0.5%	13.40% Total Trucl
Medium-Heavy-Duty Trucks 14,001-33,000 pou	0.9%	
Heavy-Heavy-Duty Trucks 33,001-60,000 pour	0.5%	
Line-Haul Vehicles	0.0%	
Urban Buses	0.1%	
Motorcycles	2.3%	
School Buses	0.1%	
Motor Homes	1.0%	

However, this state-wide average fleet mix is not appropriate for the majority of land use analyses. The project land use assessed in this analysis is identified below along with the total percentage of trucks (medium and heavy) that are expected for this land use. The following vehicle mix was calculated based on the percentage of trucks associated with this land use. The percentage of trucks for each land use

ITE Code	Project Land Use:	Truck %	ADT	Truck #
221	Low-Rise Apartment	0.88%	133	1
710	General Office	1.84%	991	18
140	Manufacturing	8.00%	172	14
760	Research Center	1.84%	456	8
492	Racquet Club	0.44%	180	1
151	Mini Warehouse	7.00%	191	13
0			0	0
0			0	0
0			0	0
0			0	0
0			0	0
0			0	0
		Project Totals:	2,123	56
		Project Truck %:	2.62%	

Vehicle Type	Total	
Automobiles	60.088%	
Light-Duty Trucks <3,750 pounds	7.637%	
Light-Duty Trucks 3,751-5,750 pounds	25.720%	
Medium-Duty Trucks 5,751-8,500 pounds	1.959%	
Light-Heavy-Duty Trucks 8,501-10,000 pounds	0.294%	
Light-Heavy-Duty Trucks 10,001-14,000 pound	0.098%	2.62% Total Trucl
Medium-Heavy-Duty Trucks 14,001-33,000 pou	0.176%	
Heavy-Heavy-Duty Trucks 33,001-60,000 pour	0.098%	
Line-Haul Vehicles	0.000%	
Urban Buses	0.112%	
Motorcycles	2.583%	
School Buses	0.112%	
Motor Homes	1.123%	
	100.00%	

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

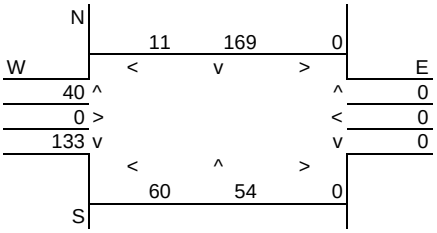
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

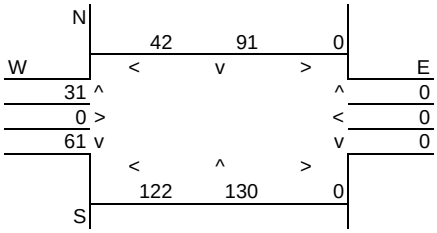
Intersection: Airport St & La Granada Ave
Analysis Condition: Cumulative (future + project + projected projects)

			No. of	Average Speed	
		Roadway Type	Lanes	A.M.	P.M.
North-South Roadway:	Airport St	At Grade	2	5	5
East-West Roadway:	La Granada Ave	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	416	N-S Road:	404
E-W Road:	244	E-W Road:	256

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	416	6.35	0.37	0.20	0.15	0.11
East-West Road	3.7	2.7	2.2	1.7	244	6.35	0.06	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	404	6.35	0.36	0.20	0.15	0.10
East-West Road	3.7	2.7	2.2	1.7	256	6.35	0.06	0.04	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	5.9	2.6
25 Feet from Roadway Edge	5.7	5.7	2.5
50 Feet from Roadway Edge	5.7	5.7	2.4
100 Feet from Roadway Edge	5.6	5.6	2.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

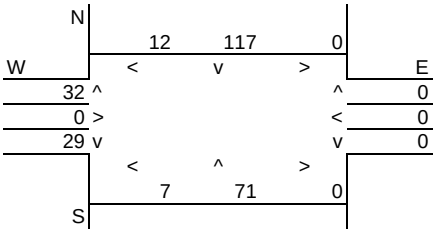
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

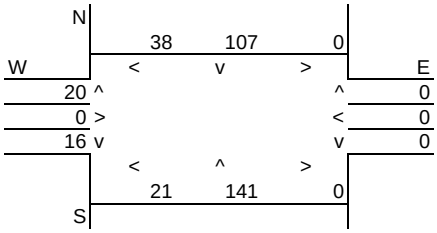
Intersection: Airport St & Los Banos Ave
Analysis Condition: Cumulative (future + project + projected projects)

			No. of	Average Speed	
		Roadway Type	Lanes	A.M.	P.M.
North-South Roadway:	Airport St	At Grade	2	5	5
East-West Roadway:	Los Banos Ave	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	232	N-S Road:	306
E-W Road:	80	E-W Road:	95

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	232	6.35	0.21	0.11	0.08	0.06
East-West Road	3.7	2.7	2.2	1.7	80	6.35	0.02	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	306	6.35	0.27	0.15	0.11	0.08
East-West Road	3.7	2.7	2.2	1.7	95	6.35	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.8	2.5
25 Feet from Roadway Edge	5.6	5.7	2.4
50 Feet from Roadway Edge	5.6	5.6	2.4
100 Feet from Roadway Edge	5.6	5.6	2.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

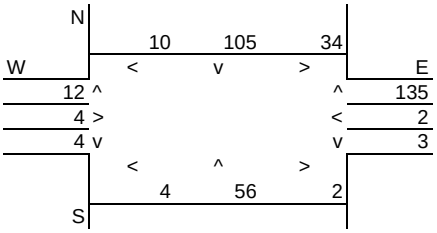
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

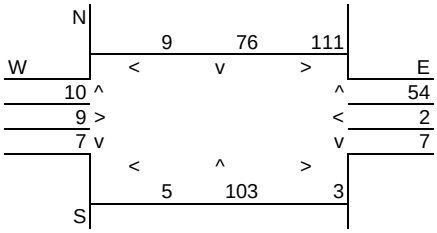
Intersection: Airport St & Stanford Ave/Cornell Ave
Analysis Condition: Cumulative (future + project + projected projects)

			No. of	Average Speed	
		Roadway Type	Lanes	A.M.	P.M.
North-South Roadway:	Airport St	At Grade	2	5	5
East-West Roadway:	Stanford/Cornell Ave	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	352	N-S Road:	363
E-W Road:	180	E-W Road:	186

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	352	6.35	0.31	0.17	0.13	0.09
East-West Road	3.7	2.7	2.2	1.7	180	6.35	0.04	0.03	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	363	6.35	0.32	0.18	0.13	0.09
East-West Road	3.7	2.7	2.2	1.7	186	6.35	0.04	0.03	0.03	0.02

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	5.9	2.6
25 Feet from Roadway Edge	5.7	5.7	2.4
50 Feet from Roadway Edge	5.7	5.7	2.4
100 Feet from Roadway Edge	5.6	5.6	2.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

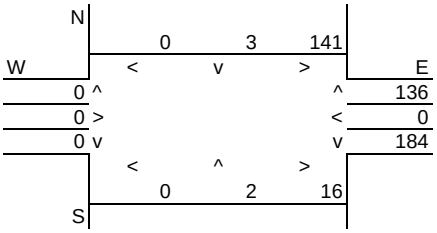
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

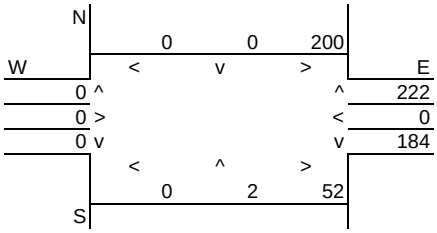
Intersection: Broadway & Prospect Way
Analysis Condition: Cumulative (future + project + projected projects)

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Broadway	At Grade	2	5	5
East-West Roadway:	Prospect Way	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	282	N-S Road:	424
E-W Road:	477	E-W Road:	658

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	282	6.35	0.07	0.05	0.04	0.03
East-West Road	14.0	7.6	5.7	4.0	477	6.35	0.42	0.23	0.17	0.12
P.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	424	6.35	0.10	0.07	0.06	0.05
East-West Road	14.0	7.6	5.7	4.0	658	6.35	0.59	0.32	0.24	0.17

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.2	2.8
25 Feet from Roadway Edge	5.8	5.9	2.6
50 Feet from Roadway Edge	5.7	5.8	2.5
100 Feet from Roadway Edge	5.7	5.7	2.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

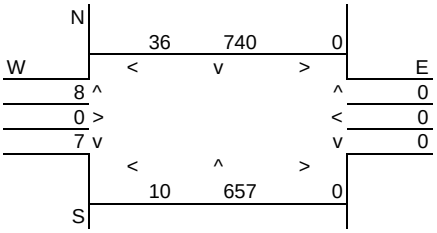
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

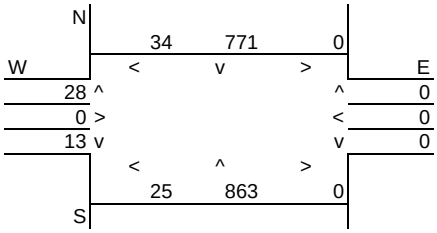
Intersection: Hwy 1 (Cabrillo) & Capistrano Rd (North)
Analysis Condition: Cumulative (future + project + projected projects)

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Hwy 1 (Cabrillo)	At Grade	2	5	5
East-West Roadway:	Capistrano Rd (North)	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,441	N-S Road:	1,696
E-W Road:	61	E-W Road:	100

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
	Reference CO Concentrations									
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,441	6.35	1.28	0.70	0.52	0.37
East-West Road	3.7	2.7	2.2	1.7	61	6.35	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,696	6.35	1.51	0.82	0.61	0.43
East-West Road	3.7	2.7	2.2	1.7	100	6.35	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.8	7.0	3.4
25 Feet from Roadway Edge	6.2	6.3	2.9
50 Feet from Roadway Edge	6.0	6.1	2.7
100 Feet from Roadway Edge	5.9	5.9	2.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

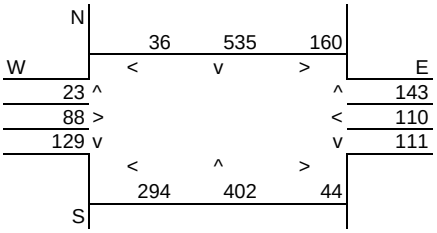
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

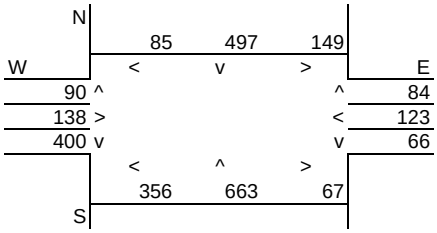
Intersection: Hwy 1 (Cabrillo) & Capistrano Rd (South)
Analysis Condition: Cumulative (future + project + projected projects)

			No. of	Average Speed	
		Roadway Type	Lanes	A.M.	P.M.
North-South Roadway:	Hwy 1 (Cabrillo)	At Grade	2	5	5
East-West Roadway:	Capistrano Rd (South)	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,515	N-S Road:	2,049
E-W Road:	680	E-W Road:	1,192

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,515	6.35	1.35	0.73	0.55	0.38
East-West Road	3.7	2.7	2.2	1.7	680	6.35	0.16	0.12	0.10	0.07
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	2,049	6.35	1.82	0.99	0.74	0.52
East-West Road	3.7	2.7	2.2	1.7	1,192	6.35	0.28	0.20	0.17	0.13

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	7.0	7.6	3.8
25 Feet from Roadway Edge	6.3	6.7	3.1
50 Feet from Roadway Edge	6.1	6.4	2.9
100 Feet from Roadway Edge	6.0	6.1	2.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

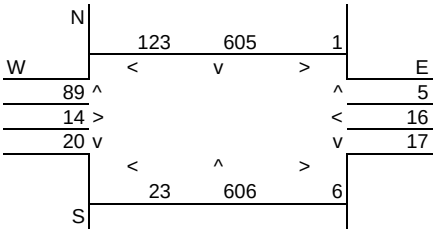
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

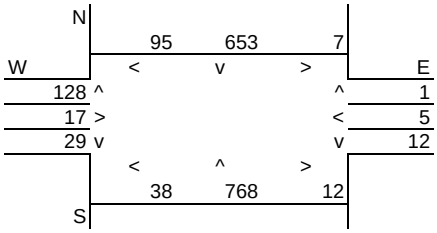
Intersection: Hwy 1 (Cabrillo) & Cypress Ave
Analysis Condition: Cumulative (future + project + projected projects)

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Hwy 1 (Cabrillo)	At Grade	2	5	5
East-West Roadway:	Cypress Ave	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,429	N-S Road:	1,652
E-W Road:	285	E-W Road:	312

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,429	6.35	1.27	0.69	0.52	0.36
East-West Road	3.7	2.7	2.2	1.7	285	6.35	0.07	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,652	6.35	1.47	0.80	0.60	0.42
East-West Road	3.7	2.7	2.2	1.7	312	6.35	0.07	0.05	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.8	7.0	3.4
25 Feet from Roadway Edge	6.2	6.4	2.9
50 Feet from Roadway Edge	6.1	6.1	2.7
100 Feet from Roadway Edge	5.9	6.0	2.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Big Wave Wellness Center

Background Information

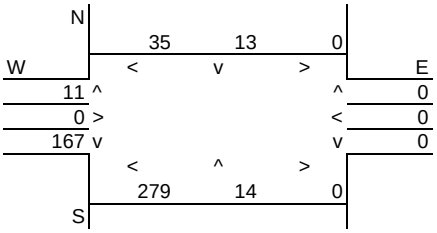
Nearest Air Monitoring Station measuring CO:	Redwood City
Background 1-hour CO Concentration (ppm):	5.5
Background 8-hour CO Concentration (ppm):	2.3
Persistence Factor:	0.7
Analysis Year:	2012

Roadway Data

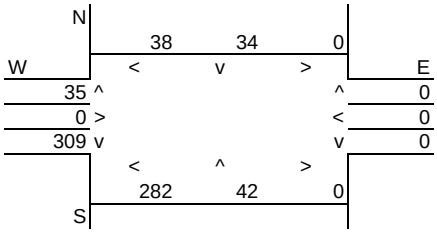
Intersection: Prospect & Capistrano
Analysis Condition: Cumulative (future + project + projected projects)

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Capistrano Rd	At Grade	2	5	5
East-West Roadway:	Prospect Way	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	473	N-S Road:	667
E-W Road:	492	E-W Road:	664

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	473	6.35	0.11	0.08	0.07	0.05
East-West Road	14.0	7.6	5.7	4.0	492	6.35	0.44	0.24	0.18	0.12
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	667	6.35	0.59	0.32	0.24	0.17
East-West Road	3.7	2.7	2.2	1.7	664	6.35	0.16	0.11	0.09	0.07

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Conc.[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.2	2.8
25 Feet from Roadway Edge	5.8	5.9	2.6
50 Feet from Roadway Edge	5.7	5.8	2.5
100 Feet from Roadway Edge	5.7	5.7	2.5

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).