

Air Quality

APPENDIX A

Westar
Santa Barbara-South of Santa Ynez Range County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Apartments Mid Rise	274	Dwelling Unit
Condo/Townhouse	5	Dwelling Unit
Regional Shopping Center	90.05	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Utility Company	Southern California Edison
Climate Zone	8	Precipitation Freq (Days)	37		

1.3 User Entered Comments

- Project Characteristics -
- Land Use -
- Construction Phase - Operational Only
- Vehicle Trips - Non default values
- Energy Mitigation -

Off-road Equipment -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.71	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00	42.98
Energy	0.11	0.91	0.41	0.01		0.00	0.07		0.00	0.07		1,158.22		0.02	0.02	1,165.27
Mobile	28.31	47.48	271.33	0.21	27.03	1.22	28.25	0.91	1.22	2.14		22,385.45		1.78		22,422.86
Total	40.13	48.68	296.24	0.22	27.03	1.22	28.44	0.91	1.22	2.33	0.00	23,585.62		1.85	0.02	23,631.11

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.71	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00	42.98
Energy	0.09	0.80	0.36	0.01		0.00	0.06		0.00	0.06		1,016.11		0.02	0.02	1,022.29
Mobile	28.31	47.48	271.33	0.21	27.03	1.22	28.25	0.91	1.22	2.14		22,385.45		1.78		22,422.86
Total	40.11	48.57	296.19	0.22	27.03	1.22	28.43	0.91	1.22	2.32	0.00	23,443.51		1.85	0.02	23,488.13

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	28.31	47.48	271.33	0.21	27.03	1.22	28.25	0.91	1.22	2.14		22,385.45		1.78		22,422.86
Unmitigated	28.31	47.48	271.33	0.21	27.03	1.22	28.25	0.91	1.22	2.14		22,385.45		1.78		22,422.86
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,164.50	1,164.50	1164.50	3,213,008	3,213,008
Condo/Townhouse	18.55	18.55	18.55	51,182	51,182
Regional Shopping Center	4,052.25	4,052.25	4052.25	4,907,516	4,907,516
Total	5,235.30	5,235.30	5,235.30	8,171,706	8,171,706

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	12.30	5.90	6.40	37.50	15.00	47.50
Condo/Townhouse	12.30	5.90	6.40	37.50	15.00	47.50
Regional Shopping Center	8.80	4.60	4.60	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.09	0.80	0.36	0.01		0.00	0.06		0.00	0.06		1,016.11		0.02	0.02	1,022.29
NaturalGas Unmitigated	0.11	0.91	0.41	0.01		0.00	0.07		0.00	0.07		1,158.22		0.02	0.02	1,165.27
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments Mid Rise	8988.16	0.10	0.83	0.35	0.01		0.00	0.07		0.00	0.07		1,057.43		0.02	0.02	1,063.87
Condo/Townhouse	350.976	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		41.29		0.00	0.00	41.54
Regional Shopping Center	505.76	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00		59.50		0.00	0.00	59.86
Total		0.11	0.91	0.40	0.01		0.00	0.07		0.00	0.07		1,158.22		0.02	0.02	1,165.27

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments Mid Rise	7.86289	0.08	0.72	0.31	0.00		0.00	0.06		0.00	0.06		925.05		0.02	0.02	930.68
Condo/Townhouse	0.305283	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00		35.92		0.00	0.00	36.13
Regional Shopping Center	0.468753	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00		55.15		0.00	0.00	55.48
Total		0.09	0.80	0.36	0.00		0.00	0.06		0.00	0.06		1,016.12		0.02	0.02	1,022.29

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.71	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00	42.98
Unmitigated	11.71	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00	42.98
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.96					0.00	0.00		0.00	0.00						0.00
Consumer Products	7.90					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00
Landscaping	0.86	0.29	24.50	0.00		0.00	0.12		0.00	0.12		41.95		0.05		42.98
Total	11.72	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00	42.98

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	2.96					0.00	0.00		0.00	0.00							0.00
Consumer Products	7.90					0.00	0.00		0.00	0.00							0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00		0.00
Landscaping	0.86	0.29	24.50	0.00		0.00	0.12		0.00	0.12		41.95		0.05			42.98
Total	11.72	0.29	24.50	0.00		0.00	0.12		0.00	0.12	0.00	41.95		0.05	0.00		42.98

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Westar
Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Apartments Mid Rise	274	Dwelling Unit
Condo/Townhouse	5	Dwelling Unit
Regional Shopping Center	90.05	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Utility Company	Southern California Edison
Climate Zone	8	Precipitation Freq (Days)	37		

1.3 User Entered Comments

- Project Characteristics -
- Land Use -
- Construction Phase - Operational Only
- Vehicle Trips - Non default values
- Energy Mitigation -

Off-road Equipment -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Energy	0.02	0.17	0.07	0.00		0.00	0.01		0.00	0.01	0.00	813.09	813.09	0.03	0.01	818.15
Mobile	5.35	8.74	53.19	0.04	4.34	0.22	4.56	0.17	0.22	0.39	0.00	3,596.51	3,596.51	0.31	0.00	3,602.98
Waste						0.00	0.00		0.00	0.00	45.24	0.00	45.24	2.67	0.00	101.40
Water						0.00	0.00		0.00	0.00	0.00	63.73	63.73	0.03	0.02	70.54
Total	7.43	8.94	55.46	0.04	4.34	0.22	4.58	0.17	0.22	0.41	45.24	4,476.75	4,521.99	3.04	0.03	4,596.58

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Energy	0.02	0.15	0.07	0.00		0.00	0.01		0.00	0.01	0.00	771.68	771.68	0.03	0.01	776.48
Mobile	5.35	8.74	53.19	0.04	4.34	0.22	4.56	0.17	0.22	0.39	0.00	3,596.51	3,596.51	0.31	0.00	3,602.98
Waste						0.00	0.00		0.00	0.00	45.24	0.00	45.24	2.67	0.00	101.40
Water						0.00	0.00		0.00	0.00	0.00	63.73	63.73	0.03	0.02	70.54
Total	7.43	8.92	55.46	0.04	4.34	0.22	4.58	0.17	0.22	0.41	45.24	4,435.34	4,480.58	3.04	0.03	4,554.91

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.35	8.74	53.19	0.04	4.34	0.22	4.56	0.17	0.22	0.39	0.00	3,596.51	3,596.51	0.31	0.00	3,602.98
Unmitigated	5.35	8.74	53.19	0.04	4.34	0.22	4.56	0.17	0.22	0.39	0.00	3,596.51	3,596.51	0.31	0.00	3,602.98
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,164.50	1,164.50	1164.50	3,213,008	3,213,008
Condo/Townhouse	18.55	18.55	18.55	51,182	51,182
Regional Shopping Center	4,052.25	4,052.25	4052.25	4,907,516	4,907,516
Total	5,235.30	5,235.30	5,235.30	8,171,706	8,171,706

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	12.30	5.90	6.40	37.50	15.00	47.50
Condo/Townhouse	12.30	5.90	6.40	37.50	15.00	47.50
Regional Shopping Center	8.80	4.60	4.60	16.30	64.70	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	603.45	603.45	0.03	0.01	607.23
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	621.33	621.33	0.03	0.01	625.22
NaturalGas Mitigated	0.02	0.15	0.07	0.00		0.00	0.01		0.00	0.01	0.00	168.23	168.23	0.00	0.00	169.25
NaturalGas Unmitigated	0.02	0.17	0.07	0.00		0.00	0.01		0.00	0.01	0.00	191.76	191.76	0.00	0.00	192.92
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	3.28068e+006	0.02	0.15	0.06	0.00		0.00	0.01		0.00	0.01	0.00	175.07	175.07	0.00	0.00	176.13
Condo/Townhouse	128106	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	6.84	6.84	0.00	0.00	6.88
Regional Shopping Center	184602	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	9.85	9.85	0.00	0.00	9.91
Total		0.02	0.17	0.07	0.00		0.00	0.01		0.00	0.01	0.00	191.76	191.76	0.00	0.00	192.92

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	2.86995e+006	0.02	0.13	0.06	0.00		0.00	0.01		0.00	0.01	0.00	153.15	153.15	0.00	0.00	154.08
Condo/Townhouse	111428	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	5.95	5.95	0.00	0.00	5.98
Regional Shopping Center	171095	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	9.13	9.13	0.00	0.00	9.19
Total		0.02	0.15	0.07	0.00		0.00	0.01		0.00	0.01	0.00	168.23	168.23	0.00	0.00	169.25

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	962296					279.90	0.01	0.00	281.66
Condo/Townhouse	21168.5					6.16	0.00	0.00	6.20
Regional Shopping Center	1.15264e+006					335.27	0.02	0.01	337.37
Total						621.33	0.03	0.01	625.23

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	949382					276.15	0.01	0.00	277.88
Condo/Townhouse	20962.7					6.10	0.00	0.00	6.14
Regional Shopping Center	1.10428e+006					321.20	0.01	0.01	323.22
Total						603.45	0.02	0.01	607.24

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Unmitigated	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.54					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.08	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Total	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.54					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.08	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51
Total	2.06	0.03	2.20	0.00		0.00	0.01		0.00	0.01	0.00	3.42	3.42	0.00	0.00	3.51

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					63.73	0.03	0.02	70.54
Unmitigated					63.73	0.03	0.02	70.54
Total	NA	NA	NA	NA	NA	NA	NA	NA

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	17.8522 / 11.2546					45.87	0.02	0.01	50.77
Condo/Townhouse	0.32577 / 0.205377					0.84	0.00	0.00	0.93
Regional Shopping Center	6.67023 / 4.08821					17.02	0.01	0.01	18.85
Total						63.73	0.03	0.02	70.55

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	17.8522 / 11.2546					45.87	0.02	0.01	50.77
Condo/Townhouse	0.32577 / 0.205377					0.84	0.00	0.00	0.93
Regional Shopping Center	6.67023 / 4.08821					17.02	0.01	0.01	18.85
Total						63.73	0.03	0.02	70.55

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					45.24	2.67	0.00	101.40
Unmitigated					45.24	2.67	0.00	101.40
Total	NA	NA	NA	NA	NA	NA	NA	NA

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	126.04					25.58	1.51	0.00	57.34
Condo/Townhouse	2.3					0.47	0.03	0.00	1.05
Regional Shopping Center	94.55					19.19	1.13	0.00	43.01
Total						45.24	2.67	0.00	101.40

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	126.04					25.58	1.51	0.00	57.34
Condo/Townhouse	2.3					0.47	0.03	0.00	1.05
Regional Shopping Center	94.55					19.19	1.13	0.00	43.01
Total						45.24	2.67	0.00	101.40

9.0 Vegetation

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\Weststar, Goleta.urb924

Project Name: Westar Mixed Use

Project Location: Santa Barbara County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	0.20	1.65	0.92	0.00	5.06	0.09	5.15	1.06	0.08	1.14	166.09
2011 TOTALS (tons/year mitigated)	0.20	1.41	0.92	0.00	0.54	0.01	0.55	0.11	0.01	0.12	166.09
Percent Reduction	0.00	14.59	0.00	0.00	89.42	83.49	89.32	89.41	83.52	89.00	0.00
2012 TOTALS (tons/year unmitigated)	0.61	2.75	5.71	0.00	0.02	0.16	0.18	0.01	0.15	0.16	615.47
2012 TOTALS (tons/year mitigated)	0.61	2.46	5.71	0.00	0.02	0.05	0.07	0.01	0.04	0.05	615.47
Percent Reduction	0.00	10.53	0.00	0.00	0.00	70.50	62.85	0.00	71.09	67.87	0.00
2013 TOTALS (tons/year unmitigated)	4.57	1.02	0.86	0.00	0.00	0.08	0.09	0.00	0.08	0.08	110.25
2013 TOTALS (tons/year mitigated)	4.13	0.87	0.86	0.00	0.00	0.01	0.01	0.00	0.01	0.01	110.25
Percent Reduction	9.62	14.62	0.00	0.00	0.00	84.10	83.15	0.00	84.17	83.80	0.00

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.71	0.67	7.52	0.02	1.08	1.04	853.53

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	6.11	8.42	68.77	0.05	9.94	1.91	5,119.92

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	10.82	9.09	76.29	0.07	11.02	2.95	5,973.45

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2011	0.20	1.65	0.92	0.00	5.06	0.09	5.15	1.06	0.08	1.14	166.09
Demolition 08/01/2011-08/30/2011	0.01	0.11	0.07	0.00	0.03	0.01	0.04	0.01	0.01	0.01	13.11
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	0.01	0.08	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	7.70
Demo On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.47
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Mass Grading 09/01/2011-12/31/2011	0.19	1.54	0.85	0.00	5.03	0.08	5.10	1.05	0.07	1.12	152.98
Mass Grading Dust	0.00	0.00	0.00	0.00	5.03	0.00	5.03	1.05	0.00	1.05	0.00
Mass Grading Off Road Diesel	0.19	1.53	0.77	0.00	0.00	0.08	0.08	0.00	0.07	0.07	146.12
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29
Mass Grading Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.57
2012	0.61	2.75	5.71	0.00	0.02	0.16	0.18	0.01	0.15	0.16	615.47
Building 01/01/2012-12/31/2012	0.61	2.75	5.71	0.00	0.02	0.16	0.18	0.01	0.15	0.16	615.47
Building Off Road Diesel	0.41	1.93	1.37	0.00	0.00	0.14	0.14	0.00	0.12	0.12	211.57
Building Vendor Trips	0.04	0.53	0.46	0.00	0.00	0.02	0.02	0.00	0.02	0.02	116.03
Building Worker Trips	0.16	0.29	3.87	0.00	0.02	0.01	0.02	0.01	0.01	0.01	287.87

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2013	4.57	1.02	0.86	0.00	0.00	0.08	0.09	0.00	0.08	0.08	110.25
Asphalt 01/01/2013-06/30/2013	0.17	1.01	0.80	0.00	0.00	0.08	0.09	0.00	0.08	0.08	105.87
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.16	0.99	0.64	0.00	0.00	0.08	0.08	0.00	0.08	0.08	91.49
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Paving Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.38
Coating 01/01/2013-06/30/2013	4.40	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37
Architectural Coating	4.39	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37

Phase Assumptions

Phase: Demolition 8/1/2011 - 8/30/2011 - Type Your Description Here

- Building Volume Total (cubic feet): 141135
- Building Volume Daily (cubic feet): 7260
- On Road Truck Travel (VMT): 100.83
- 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 1 hours per day
 - 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 9/1/2011 - 12/31/2011 - Default Fine Site Grading Description

- Total Acres Disturbed: 17.3
- Maximum Daily Acreage Disturbed: 4.32
- Fugitive Dust Level of Detail: Low
- Onsite Cut/Fill: 613 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
- On Road Truck Travel (VMT): 7.39
- Off-Road Equipment:

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- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 4 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: Paving 1/1/2013 - 6/30/2013 - Default Paving Description

Acres to be Paved: 4.32

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 1/1/2012 - 12/31/2012 - 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 1/1/2013 - 6/30/2013 - Default Architectural Coating Description

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

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011	0.20	1.41	0.92	0.00	0.54	0.01	0.55	0.11	0.01	0.12	166.09
Demolition 08/01/2011-08/30/2011	0.01	0.10	0.07	0.00	0.03	0.00	0.04	0.01	0.00	0.01	13.11
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	0.01	0.07	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.70
Demo On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.47
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Mass Grading 09/01/2011-12/31/2011	0.19	1.31	0.85	0.00	0.50	0.01	0.51	0.10	0.01	0.12	152.98
Mass Grading Dust	0.00	0.00	0.00	0.00	0.50	0.00	0.50	0.10	0.00	0.10	0.00
Mass Grading Off Road Diesel	0.19	1.30	0.77	0.00	0.00	0.01	0.01	0.00	0.01	0.01	146.12
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29
Mass Grading Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.57
2012	0.61	2.46	5.71	0.00	0.02	0.05	0.07	0.01	0.04	0.05	615.47
Building 01/01/2012-12/31/2012	0.61	2.46	5.71	0.00	0.02	0.05	0.07	0.01	0.04	0.05	615.47
Building Off Road Diesel	0.41	1.64	1.37	0.00	0.00	0.02	0.02	0.00	0.02	0.02	211.57
Building Vendor Trips	0.04	0.53	0.46	0.00	0.00	0.02	0.02	0.00	0.02	0.02	116.03
Building Worker Trips	0.16	0.29	3.87	0.00	0.02	0.01	0.02	0.01	0.01	0.01	287.87

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2013	4.13	0.87	0.86	0.00	0.00	0.01	0.01	0.00	0.01	0.01	110.25
Asphalt 01/01/2013-06/30/2013	0.17	0.86	0.80	0.00	0.00	0.01	0.01	0.00	0.01	0.01	105.87
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.16	0.84	0.64	0.00	0.00	0.01	0.01	0.00	0.01	0.01	91.49
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Paving Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.38
Coating 01/01/2013-06/30/2013	3.96	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37
Architectural Coating	3.95	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	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 8/1/2011 - 8/30/2011 - Type Your Description Here

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Mass Grading 9/1/2011 - 12/31/2011 - Default Fine Site Grading Description

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

PM10: 84% PM25: 84%

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

PM10: 44% PM25: 44%

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

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/1/2013 - 6/30/2013 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/1/2012 - 12/31/2012 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2013 - 6/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.54	0.30	0.00	0.00	0.00	680.85
Hearth	1.71	0.12	6.80	0.02	1.08	1.04	171.92
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	2.49						
Architectural Coatings	0.44						
TOTALS (tons/year, unmitigated)	4.71	0.67	7.52	0.02	1.08	1.04	853.53

Area Source Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\Weststar, Goleta.urb924

Project Name: Westar Mixed Use

Project Location: Santa Barbara County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (lbs/day unmitigated)	4.36	35.46	19.52	0.00	115.54	1.81	117.35	24.13	1.66	25.80	3,516.86
2011 TOTALS (lbs/day mitigated)	4.36	30.19	19.52	0.00	11.53	0.28	11.81	2.41	0.26	2.67	3,516.86
2012 TOTALS (lbs/day unmitigated)	4.68	21.10	43.73	0.03	0.15	1.25	1.40	0.05	1.14	1.19	4,716.26
2012 TOTALS (lbs/day mitigated)	4.68	18.88	43.73	0.03	0.15	0.37	0.52	0.05	0.33	0.38	4,716.26
2013 TOTALS (lbs/day unmitigated)	70.83	15.76	13.26	0.00	0.02	1.31	1.33	0.01	1.21	1.21	1,709.23
2013 TOTALS (lbs/day mitigated)	64.02	13.46	13.26	0.00	0.02	0.21	0.22	0.01	0.19	0.20	1,709.23

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	16.65	3.03	6.27	0.00	0.03	0.03	3,739.11

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	32.44	43.61	371.60	0.27	54.44	10.46	28,563.94

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	49.09	46.64	377.87	0.27	54.47	10.49	32,303.05

Construction Unmitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 8/1/2011-8/30/2011 Active Days: 22	1.27	10.01	6.66	<u>0.00</u>	3.07	0.64	3.71	0.64	0.59	1.23	1,191.61
Demolition 08/01/2011-08/30/2011	1.27	10.01	6.66	0.00	3.07	0.64	3.71	0.64	0.59	1.23	1,191.61
Fugitive Dust	0.00	0.00	0.00	0.00	3.05	0.00	3.05	0.63	0.00	0.63	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.17	2.70	0.84	0.00	0.01	0.09	0.11	0.00	0.09	0.09	405.96
Demo Worker Trips	0.05	0.09	1.24	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.35
Time Slice 9/1/2011-12/30/2011 Active Days: 87	<u>4.36</u>	<u>35.46</u>	<u>19.52</u>	0.00	<u>115.54</u>	<u>1.81</u>	<u>117.35</u>	<u>24.13</u>	<u>1.66</u>	<u>25.80</u>	<u>3,516.86</u>
Mass Grading 09/01/2011-12/31/2011	4.36	35.46	19.52	0.00	115.54	1.81	117.35	24.13	1.66	25.80	3,516.86
Mass Grading Dust	0.00	0.00	0.00	0.00	115.53	0.00	115.53	24.13	0.00	24.13	0.00
Mass Grading Off Road Diesel	4.27	35.12	17.60	0.00	0.00	1.80	1.80	0.00	1.66	1.66	3,359.08
Mass Grading On Road Diesel	0.01	0.20	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.75
Mass Grading Worker Trips	0.08	0.14	1.86	0.00	0.01	0.00	0.01	0.00	0.00	0.01	128.02
Time Slice 1/2/2012-12/31/2012 Active Days: 261	<u>4.68</u>	<u>21.10</u>	<u>43.73</u>	<u>0.03</u>	<u>0.15</u>	<u>1.25</u>	<u>1.40</u>	<u>0.05</u>	<u>1.14</u>	<u>1.19</u>	<u>4,716.26</u>
Building 01/01/2012-12/31/2012	4.68	21.10	43.73	0.03	0.15	1.25	1.40	0.05	1.14	1.19	4,716.26
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.34	4.08	3.56	0.01	0.03	0.14	0.18	0.01	0.13	0.14	889.15
Building Worker Trips	1.20	2.21	29.66	0.02	0.12	0.07	0.19	0.04	0.06	0.10	2,205.91

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Time Slice 1/1/2013-6/28/2013	<u>70.83</u>	<u>15.76</u>	<u>13.26</u>	<u>0.00</u>	<u>0.02</u>	<u>1.31</u>	<u>1.33</u>	<u>0.01</u>	<u>1.21</u>	<u>1.21</u>	<u>1,709.23</u>
Active Days: 129											
Asphalt 01/01/2013-06/30/2013	2.68	15.70	12.42	0.00	0.01	1.31	1.32	0.00	1.21	1.21	1,641.40
Paving Off-Gas	0.09	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	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.01	0.16	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	31.00
Paving Worker Trips	0.10	0.18	2.39	0.00	0.01	0.01	0.02	0.00	0.01	0.01	191.97
Coating 01/01/2013-06/30/2013	68.15	0.06	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	67.83
Architectural Coating	68.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	67.83

Phase Assumptions

Phase: Demolition 8/1/2011 - 8/30/2011 - Type Your Description Here

Building Volume Total (cubic feet): 141135

Building Volume Daily (cubic feet): 7260

On Road Truck Travel (VMT): 100.83

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 1 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 9/1/2011 - 12/31/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 17.3

Maximum Daily Acreage Disturbed: 4.32

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 613 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 7.39

Off-Road Equipment:

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- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Scrapers (313 hp) operating at a 0.72 load factor for 4 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: Paving 1/1/2013 - 6/30/2013 - Default Paving Description

Acres to be Paved: 4.32

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 1/1/2012 - 12/31/2012 - 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 1/1/2013 - 6/30/2013 - Default Architectural Coating Description

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

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 8/1/2011-8/30/2011 Active Days: 22	1.27	8.93	6.66	<u>0.00</u>	3.07	0.18	3.25	0.64	0.16	0.80	1,191.61
Demolition 08/01/2011-08/30/2011	1.27	8.93	6.66	0.00	3.07	0.18	3.25	0.64	0.16	0.80	1,191.61
Fugitive Dust	0.00	0.00	0.00	0.00	3.05	0.00	3.05	0.63	0.00	0.63	0.00
Demo Off Road Diesel	1.05	6.14	4.58	0.00	0.00	0.08	0.08	0.00	0.08	0.08	700.30
Demo On Road Diesel	0.17	2.70	0.84	0.00	0.01	0.09	0.11	0.00	0.09	0.09	405.96
Demo Worker Trips	0.05	0.09	1.24	0.00	0.00	0.00	0.01	0.00	0.00	0.00	85.35
Time Slice 9/1/2011-12/30/2011 Active Days: 87	<u>4.36</u>	<u>30.19</u>	<u>19.52</u>	0.00	<u>11.53</u>	<u>0.28</u>	<u>11.81</u>	<u>2.41</u>	<u>0.26</u>	<u>2.67</u>	<u>3,516.86</u>
Mass Grading 09/01/2011-12/31/2011	4.36	30.19	19.52	0.00	11.53	0.28	11.81	2.41	0.26	2.67	3,516.86
Mass Grading Dust	0.00	0.00	0.00	0.00	11.52	0.00	11.52	2.41	0.00	2.41	0.00
Mass Grading Off Road Diesel	4.27	29.85	17.60	0.00	0.00	0.27	0.27	0.00	0.25	0.25	3,359.08
Mass Grading On Road Diesel	0.01	0.20	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.75
Mass Grading Worker Trips	0.08	0.14	1.86	0.00	0.01	0.00	0.01	0.00	0.00	0.01	128.02
Time Slice 1/2/2012-12/31/2012 Active Days: 261	<u>4.68</u>	<u>18.88</u>	<u>43.73</u>	<u>0.03</u>	<u>0.15</u>	<u>0.37</u>	<u>0.52</u>	<u>0.05</u>	<u>0.33</u>	<u>0.38</u>	<u>4,716.26</u>
Building 01/01/2012-12/31/2012	4.68	18.88	43.73	0.03	0.15	0.37	0.52	0.05	0.33	0.38	4,716.26
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.34	4.08	3.56	0.01	0.03	0.14	0.18	0.01	0.13	0.14	889.15
Building Worker Trips	1.20	2.21	29.66	0.02	0.12	0.07	0.19	0.04	0.06	0.10	2,205.91

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Time Slice 1/1/2013-6/28/2013	<u>64.02</u>	<u>13.46</u>	<u>13.26</u>	<u>0.00</u>	<u>0.02</u>	<u>0.21</u>	<u>0.22</u>	<u>0.01</u>	<u>0.19</u>	<u>0.20</u>	<u>1,709.23</u>
Active Days: 129											
Asphalt 01/01/2013-06/30/2013	2.68	13.40	12.42	0.00	0.01	0.21	0.22	0.00	0.19	0.19	1,641.40
Paving Off-Gas	0.09	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	13.06	9.98	0.00	0.00	0.20	0.20	0.00	0.18	0.18	1,418.44
Paving On Road Diesel	0.01	0.16	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	31.00
Paving Worker Trips	0.10	0.18	2.39	0.00	0.01	0.01	0.02	0.00	0.01	0.01	191.97
Coating 01/01/2013-06/30/2013	61.34	0.06	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	67.83
Architectural Coating	61.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	67.83

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 8/1/2011 - 8/30/2011 - Type Your Description Here

For Concrete/Industrial Saws, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Concrete/Industrial Saws, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Mass Grading 9/1/2011 - 12/31/2011 - Default Fine Site Grading Description

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

PM10: 84% PM25: 84%

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

PM10: 44% PM25: 44%

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

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/1/2013 - 6/30/2013 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/1/2012 - 12/31/2012 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2013 - 6/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.23	2.97	1.63	0.00	0.01	0.01	3,730.68
Hearth - No Summer Emissions							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	13.65						
Architectural Coatings	2.40						
TOTALS (lbs/day, unmitigated)	16.65	3.03	6.27	0.00	0.03	0.03	3,739.11

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments mid rise	9.85	11.47	101.85	0.07	14.56	2.80	7,697.30
Condo/townhouse high rise	0.16	0.18	1.62	0.00	0.23	0.04	122.61
Regnl shop. center	22.43	31.96	268.13	0.20	39.65	7.62	20,744.03
TOTALS (lbs/day, unmitigated)	32.44	43.61	371.60	0.27	54.44	10.46	28,563.94

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments mid rise	8.00	4.25	dwelling units	274.00	1,164.50	8,454.50
Condo/townhouse high rise	1.00	3.71	dwelling units	5.00	18.55	134.68
Regnl shop. center		45.00	1000 sq ft	90.05	4,052.25	23,032.99
					5,235.30	31,622.17

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.3	0.9	98.7	0.4
Light Truck < 3750 lbs	16.6	1.8	95.2	3.0
Light Truck 3751-5750 lbs	20.4	0.5	99.5	0.0
Med Truck 5751-8500 lbs	7.5	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	1.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	27.3	72.7
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	33.3	66.7
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.7	56.8	43.2	0.0
School Bus	0.2	0.0	0.0	100.0
Motor Home	1.2	0.0	91.7	8.3

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
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)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults