

APPENDIX E

Air Quality Modeling Data

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\21478\Application Data\Urbemis\Version9a\Projects\DS Update Construction 2nd Try.urb924

Project Name: DS - Residential Phase 3

Project Location: Sacramento County AQMD

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
2009 TOTALS (tons/year unmitigated)	7.50	55.65	85.46	0.07	400.73	2.60	403.32	83.73	2.38	86.11	11,219.15
2010 TOTALS (tons/year unmitigated)	5.91	33.08	123.09	0.13	236.85	1.51	238.36	49.55	1.36	50.91	14,997.72
2011 TOTALS (tons/year unmitigated)	5.01	26.76	111.34	0.13	164.74	1.23	165.97	34.49	1.11	35.60	14,599.42
2012 TOTALS (tons/year unmitigated)	3.76	16.90	99.35	0.13	0.58	0.84	1.42	0.21	0.74	0.95	13,856.10
2013 TOTALS (tons/year unmitigated)	3.41	15.11	91.49	0.13	0.58	0.77	1.35	0.21	0.68	0.88	13,861.68
2014 TOTALS (tons/year unmitigated)	3.10	13.49	84.26	0.13	0.58	0.70	1.28	0.21	0.62	0.83	13,866.62

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20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 6 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 7/1/2009 - 12/31/2014 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
- 3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\21478\Application Data\Urbemis\Version9a\Projects\DS Update Construction 2nd Try.urb924

Project Name: DS - Residential Phase 3

Project Location: Sacramento County AQMD

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
2009 TOTALS (lbs/day unmitigated)	76.40	512.96	1,137.78	1.04	3,072.90	23.94	3,096.83	642.41	21.82	664.23	138,361.12
2010 TOTALS (lbs/day unmitigated)	52.54	318.64	974.60	1.03	3,072.86	14.33	3,087.20	642.40	12.99	655.38	121,076.32
2011 TOTALS (lbs/day unmitigated)	48.31	293.79	898.66	1.03	3,072.86	13.10	3,085.96	642.40	11.84	654.24	121,132.93
2012 TOTALS (lbs/day unmitigated)	28.82	129.50	761.31	1.03	4.45	6.41	10.86	1.59	5.69	7.28	106,177.04
2013 TOTALS (lbs/day unmitigated)	26.12	115.77	701.10	1.03	4.45	5.88	10.33	1.59	5.19	6.78	106,219.74
2014 TOTALS (lbs/day unmitigated)	23.72	103.40	645.67	1.03	4.45	5.39	9.83	1.59	4.74	6.33	106,257.62

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO ₂	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO ₂
Time Slice 1/1/2009-6/30/2009 Active Days: 129	38.11	337.83	160.80	0.01	3,068.45	15.77	3,084.22	640.82	14.51	655.33	32,361.42
Mass Grading 01/01/2009-12/31/2009	38.11	337.83	160.80	0.01	3,068.45	15.77	3,084.22	640.82	14.51	655.33	32,361.42
Mass Grading Dust	0.00	0.00	0.00	0.00	3,068.40	0.00	3,068.40	640.80	0.00	640.80	0.00
Mass Grading Off Road Diesel	37.78	337.32	149.35	0.00	0.00	15.75	15.75	0.00	14.49	14.49	31,273.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.33	0.51	11.45	0.01	0.05	0.02	0.07	0.02	0.02	0.04	1,087.70
Time Slice 7/1/2009-12/31/2009 Active Days: 132	76.40	512.96	1,137.78	1.04	3,072.90	23.94	3,096.83	642.41	21.82	664.23	138,361.12
Building 07/01/2009-12/31/2014	38.30	175.13	976.98	1.03	4.45	8.16	12.61	1.59	7.31	8.90	105,999.71
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	9.13	112.23	103.59	0.21	0.79	4.58	5.37	0.27	4.19	4.46	22,181.05
Building Worker Trips	24.80	38.19	858.75	0.81	3.65	1.77	5.43	1.32	1.45	2.77	81,559.38
Mass Grading 01/01/2009-12/31/2009	38.11	337.83	160.80	0.01	3,068.45	15.77	3,084.22	640.82	14.51	655.33	32,361.42
Mass Grading Dust	0.00	0.00	0.00	0.00	3,068.40	0.00	3,068.40	640.80	0.00	640.80	0.00
Mass Grading Off Road Diesel	37.78	337.32	149.35	0.00	0.00	15.75	15.75	0.00	14.49	14.49	31,273.72
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.33	0.51	11.45	0.01	0.05	0.02	0.07	0.02	0.02	0.04	1,087.70

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Time Slice 1/1/2010-5/31/2010 Active Days: 107	34.91	159.72	898.08	1.03	4.45	7.58	12.03	1.59	6.77	8.36	106,071.83
Building 07/01/2009-12/31/2014	34.91	159.72	898.08	1.03	4.45	7.58	12.03	1.59	6.77	8.36	106,071.83
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	8.49	101.99	96.67	0.21	0.79	4.14	4.93	0.27	3.79	4.05	22,185.08
Building Worker Trips	22.34	34.43	787.10	0.81	3.65	1.77	5.43	1.32	1.45	2.77	81,627.47
Time Slice 6/1/2010-12/31/2010 Active Days: 154	52.54	318.64	974.60	1.03	3,072.86	14.33	3,087.20	642.40	12.99	655.38	121,076.32
Building 07/01/2009-12/31/2014	34.91	159.72	898.08	1.03	4.45	7.58	12.03	1.59	6.77	8.36	106,071.83
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	8.49	101.99	96.67	0.21	0.79	4.14	4.93	0.27	3.79	4.05	22,185.08
Building Worker Trips	22.34	34.43	787.10	0.81	3.65	1.77	5.43	1.32	1.45	2.77	81,627.47
Mass Grading 06/01/2010-05/31/2011	17.63	158.92	76.52	0.00	3,068.42	6.75	3,075.17	640.81	6.21	647.02	15,004.49
Mass Grading Dust	0.00	0.00	0.00	0.00	3,068.40	0.00	3,068.40	640.80	0.00	640.80	0.00
Mass Grading Off Road Diesel	17.53	158.77	73.02	0.00	0.00	6.75	6.75	0.00	6.21	6.21	14,641.63
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.15	3.50	0.00	0.02	0.01	0.02	0.01	0.01	0.01	362.87

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Time Slice 1/3/2011-5/31/2011 Active Days: 107	48.31	293.79	898.66	1.03	3,072.86	13.10	3,085.96	642.40	11.84	654.24	121,132.93
Building 07/01/2009-12/31/2014	31.73	144.37	827.01	1.03	4.45	6.97	11.42	1.59	6.21	7.79	106,128.20
Building Off Road Diesel	3.77	21.85	13.95	0.00	0.00	1.57	1.57	0.00	1.45	1.45	2,259.28
Building Vendor Trips	7.85	91.41	90.29	0.21	0.79	3.70	4.50	0.27	3.39	3.65	22,187.45
Building Worker Trips	20.12	31.12	722.77	0.81	3.65	1.70	5.35	1.32	1.37	2.69	81,681.46
Mass Grading 06/01/2010- 05/31/2011	16.58	149.42	71.65	0.00	3,068.42	6.13	3,074.55	640.81	5.64	646.45	15,004.73
Mass Grading Dust	0.00	0.00	0.00	0.00	3,068.40	0.00	3,068.40	640.80	0.00	640.80	0.00
Mass Grading Off Road Diesel	16.49	149.28	68.44	0.00	0.00	6.12	6.12	0.00	5.63	5.63	14,641.63
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.09	0.14	3.21	0.00	0.02	0.01	0.02	0.01	0.01	0.01	363.11
Time Slice 6/1/2011-12/30/2011 Active Days: 153	31.73	144.37	827.01	1.03	4.45	6.97	11.42	1.59	6.21	7.79	106,128.20
Building 07/01/2009-12/31/2014	31.73	144.37	827.01	1.03	4.45	6.97	11.42	1.59	6.21	7.79	106,128.20
Building Off Road Diesel	3.77	21.85	13.95	0.00	0.00	1.57	1.57	0.00	1.45	1.45	2,259.28
Building Vendor Trips	7.85	91.41	90.29	0.21	0.79	3.70	4.50	0.27	3.39	3.65	22,187.45
Building Worker Trips	20.12	31.12	722.77	0.81	3.65	1.70	5.35	1.32	1.37	2.69	81,681.46
Time Slice 1/2/2012-12/31/2012 Active Days: 261	28.82	129.50	761.31	1.03	4.45	6.41	10.86	1.59	5.69	7.28	106,177.04
Building 07/01/2009-12/31/2014	28.82	129.50	761.31	1.03	4.45	6.41	10.86	1.59	5.69	7.28	106,177.04
Building Off Road Diesel	3.48	20.42	13.62	0.00	0.00	1.42	1.42	0.00	1.31	1.31	2,259.28
Building Vendor Trips	7.19	80.89	83.94	0.21	0.79	3.29	4.09	0.27	3.01	3.28	22,190.79
Building Worker Trips	18.15	28.18	663.74	0.81	3.65	1.70	5.35	1.32	1.37	2.69	81,726.97

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Time Slice 1/1/2013-12/31/2013 Active Days: 261	26.12	115.77	701.10	1.03	4.45	5.88	10.33	1.59	5.19	6.78	106,219.74
Building 07/01/2009-12/31/2014	26.12	115.77	701.10	1.03	4.45	5.88	10.33	1.59	5.19	6.78	106,219.74
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16	2,259.28
Building Vendor Trips	6.59	71.28	77.89	0.21	0.79	2.91	3.71	0.27	2.66	2.93	22,194.73
Building Worker Trips	16.34	25.45	609.86	0.81	3.65	1.70	5.36	1.32	1.37	2.69	81,765.73
Time Slice 1/1/2014-12/31/2014 Active Days: 261	23.72	103.40	645.67	1.03	4.45	5.39	9.83	1.59	4.74	6.33	106,257.62
Building 07/01/2009-12/31/2014	23.72	103.40	645.67	1.03	4.45	5.39	9.83	1.59	4.74	6.33	106,257.62
Building Off Road Diesel	2.93	17.65	13.06	0.00	0.00	1.11	1.11	0.00	1.02	1.02	2,259.28
Building Vendor Trips	6.03	62.65	72.25	0.21	0.79	2.58	3.37	0.27	2.35	2.62	22,198.79
Building Worker Trips	14.77	23.10	560.36	0.81	3.65	1.70	5.36	1.32	1.37	2.69	81,799.54

Phase Assumptions

Phase: Mass Grading 1/1/2009 - 12/31/2009 - Default Fine Site Grading Description

Total Acres Disturbed: 613.68

Maximum Daily Acreage Disturbed: 153.42

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

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

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

9 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

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

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

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

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

Phase: Mass Grading 6/1/2010 - 5/31/2011 - Type Your Description Here

Total Acres Disturbed: 613.68

Maximum Daily Acreage Disturbed: 153.42

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

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

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

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

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

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

Phase: Building Construction 7/1/2009 - 12/31/2014 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

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

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

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

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\21478\Application Data\Urbemis\Version9a\Projects\DS Update Full Buildout.urb924

Project Name: DS - Residential Phase 3

Project Location: Sacramento County AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	56.41	14.15	16.12	0.00	0.05	0.05	17,744.32

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	88.13	98.41	976.22	1.16	197.31	37.74	116,266.31

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	144.54	112.56	992.34	1.16	197.36	37.79	134,010.63

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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	1.07	14.03	7.05	0.00	0.03	0.03	17,707.59
Hearth	0.03	0.02	0.01	0.00	0.00	0.00	21.98
Landscape	1.54	0.10	9.06	0.00	0.02	0.02	14.75
Consumer Products	43.02						
Architectural Coatings	10.75						
TOTALS (tons/year, unmitigated)	56.41	14.15	16.12	0.00	0.05	0.05	17,744.32

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with natural gas fireplaces changed from 65% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	20.16	21.95	223.27	0.26	44.18	8.46	26,164.52
Apartments low rise	8.18	7.76	78.90	0.09	15.61	2.99	9,245.96
Condo/townhouse general	11.16	11.50	116.90	0.14	23.13	4.43	13,699.52
Condo/townhouse high rise	3.61	3.72	37.84	0.04	7.49	1.43	4,434.19
Elementary school	4.20	2.45	24.09	0.03	4.92	0.94	2,894.27
City park	0.13	0.17	1.64	0.00	0.34	0.06	198.24
Regnl shop. center	32.34	40.15	389.66	0.47	80.24	15.34	47,074.51
Strip mall	8.35	10.71	103.92	0.13	21.40	4.09	12,555.10
TOTALS (tons/year, unmitigated)	88.13	98.41	976.22	1.16	197.31	37.74	116,266.31

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 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
Single family housing	670.67	8.18	dwelling units	2,012.00	16,458.16	140,712.34
Apartments low rise	83.56	4.35	dwelling units	1,337.00	5,815.95	49,724.63
Condo/townhouse general	88.44	6.09	dwelling units	1,415.00	8,617.35	73,675.76

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse high rise	7.16	6.09	dwelling units	458.00	2,789.22	23,847.00
Elementary school		1.40	students	1,400.00	1,960.00	15,680.00
City park		72.00	acres	2.00	144.00	1,076.40
Regnl shop. center		28.21	1000 sq ft	1,230.00	34,698.30	255,726.47
Strip mall		57.48	1000 sq ft	161.00	9,254.28	68,204.04
					79,737.26	628,646.64

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.0	1.0	94.0	5.0
Light Truck 3751-5750 lbs	22.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	51.4	48.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

	Travel Conditions					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	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)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\21478\Application Data\Urbemis\Version9a\Projects\DS Update Full Buildout.urb924

Project Name: DS - Residential Phase 3

Project Location: Sacramento County AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	317.60	78.02	139.25	0.00	0.43	0.41	97,191.79

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	503.38	463.54	5,618.71	6.80	1,081.14	206.86	681,848.66

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	820.98	541.56	5,757.96	6.80	1,081.57	207.27	779,040.45

8/11/2008 4:21:00 PM

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	5.87	76.86	38.62	0.00	0.15	0.14	97,027.91
Hearth - No Summer Emissions							
Landscape	17.09	1.16	100.63	0.00	0.28	0.27	163.88
Consumer Products	235.74						
Architectural Coatings	58.90						
TOTALS (lbs/day, unmitigated)	317.60	78.02	139.25	0.00	0.43	0.41	97,191.79

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with natural gas fireplaces changed from 65% to 100%

8/11/2008 4:21:00 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	115.98	103.39	1,288.83	1.53	242.06	46.36	153,388.95
Apartments low rise	49.36	36.53	455.44	0.54	85.54	16.38	54,204.26
Condo/townhouse general	65.56	54.13	674.82	0.80	126.74	24.28	80,313.12
Condo/townhouse high rise	21.22	17.52	218.42	0.26	41.02	7.86	25,995.34
Elementary school	28.51	11.52	138.78	0.17	26.96	5.16	16,975.74
City park	0.70	0.80	9.43	0.01	1.85	0.35	1,162.92
Regnl shop. center	177.06	189.19	2,236.50	2.76	439.70	84.05	276,155.67
Strip mall	44.99	50.46	596.49	0.73	117.27	22.42	73,652.66
TOTALS (lbs/day, unmitigated)	503.38	463.54	5,618.71	6.80	1,081.14	206.86	681,848.66

Operational Settings:

- Does not include correction for passby trips
- Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 95 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
Single family housing	670.67	8.18	dwelling units	2,012.00	16,458.16	140,712.34
Apartments low rise	83.56	4.35	dwelling units	1,337.00	5,815.95	49,724.63
Condo/townhouse general	88.44	6.09	dwelling units	1,415.00	8,617.35	73,675.76

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse high rise	7.16	6.09	dwelling units	458.00	2,789.22	23,847.00
Elementary school		1.40	students	1,400.00	1,960.00	15,680.00
City park		72.00	acres	2.00	144.00	1,076.40
Regnl shop. center		28.21	1000 sq ft	1,230.00	34,698.30	255,726.47
Strip mall		57.48	1000 sq ft	161.00	9,254.28	68,204.04
					79,737.26	628,646.64

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.0	1.0	94.0	5.0
Light Truck 3751-5750 lbs	22.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	51.4	48.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

	Travel Conditions					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	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)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\21478\Application Data\Urbemis\Version9a\Projects\DS Update Full Buildout.urb924

Project Name: DS - Residential Phase 3

Project Location: Sacramento County AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

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)	302.52	111.30	53.27	0.22	2.93	2.89	140,990.26

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	441.83	690.59	4,810.21	5.44	1,081.14	206.86	547,529.55

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)	744.35	801.89	4,863.48	5.66	1,084.07	209.75	688,519.81

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	5.87	76.86	38.62	0.00	0.15	0.14	97,027.91
Hearth	2.01	34.44	14.65	0.22	2.78	2.75	43,962.35
Landscaping - No Winter Emissions							
Consumer Products	235.74						
Architectural Coatings	58.90						
TOTALS (lbs/day, unmitigated)	302.52	111.30	53.27	0.22	2.93	2.89	140,990.26

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with natural gas fireplaces changed from 65% to 100%

8/11/2008 4:21:42 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	99.38	154.13	1,092.58	1.23	242.06	46.36	123,323.80
Apartments low rise	35.67	54.47	386.09	0.43	85.54	16.38	43,579.90
Condo/townhouse general	52.35	80.70	572.06	0.64	126.74	24.28	64,571.27
Condo/townhouse high rise	16.95	26.12	185.16	0.21	41.02	7.86	20,900.10
Elementary school	11.97	17.17	118.44	0.14	26.96	5.16	13,625.49
City park	0.74	1.18	8.13	0.01	1.85	0.35	932.93
Regnl shop. center	177.56	281.69	1,932.37	2.19	439.70	84.05	221,516.15
Strip mall	47.21	75.13	515.38	0.59	117.27	22.42	59,079.91
TOTALS (lbs/day, unmitigated)	441.83	690.59	4,810.21	5.44	1,081.14	206.86	547,529.55

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 50 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
Single family housing	670.67	8.18	dwelling units	2,012.00	16,458.16	140,712.34
Apartments low rise	83.56	4.35	dwelling units	1,337.00	5,815.95	49,724.63
Condo/townhouse general	88.44	6.09	dwelling units	1,415.00	8,617.35	73,675.76

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse high rise	7.16	6.09	dwelling units	458.00	2,789.22	23,847.00
Elementary school		1.40	students	1,400.00	1,960.00	15,680.00
City park		72.00	acres	2.00	144.00	1,076.40
Regnl shop. center	28.21	1000	sq ft	1,230.00	34,698.30	255,726.47
Strip mall	57.48	1000	sq ft	161.00	9,254.28	68,204.04
					79,737.26	628,646.64

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.0	1.0	94.0	5.0
Light Truck 3751-5750 lbs	22.7	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	51.4	48.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential				Commercial		
	Home-Work	Home-Shop	Home-Other	Commuter	Non-Work	Customer	
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3	
Rural Trip Length (miles)	15.0	10.0	10.0	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)							
Elementary school				20.0	10.0	70.0	
City park				5.0	2.5	92.5	
Regnl shop. center				2.0	1.0	97.0	
Strip mall				2.0	1.0	97.0	

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

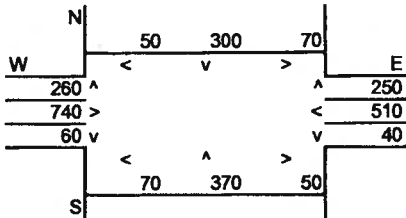
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2005

Roadway Data

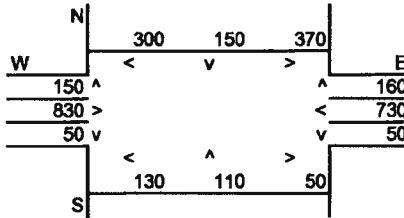
Intersection: Meadowview Road and Freeport Boulevard
 Analysis Condition: Baseline No Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Freeport Boulevard	2	5	5
East-West Roadway:	Meadowview Road	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,300	N-S Road:	1,240
E-W Road:	1,690	E-W Road:	2,190

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	A ₁ 25 Feet	A ₂ 50 Feet	A ₃ 100 Feet			B	C	25 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,300	12.26	0.43	0.35	0.27
East-West Road	7.0	5.4	3.8	1,690	12.26	1.45	1.12	0.79
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,240	12.26	0.41	0.33	0.26
East-West Road	7.0	5.4	3.8	2,190	12.26	1.88	1.45	1.02

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	1.9	2.3	5.5
50 Feet from Roadway Edge	1.5	1.8	5.1
100 Feet from Roadway Edge	1.1	1.3	4.7

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

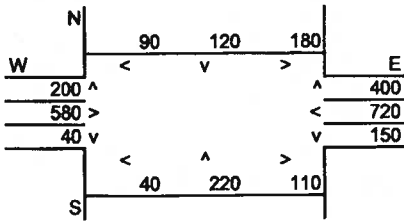
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2005

Roadway Data

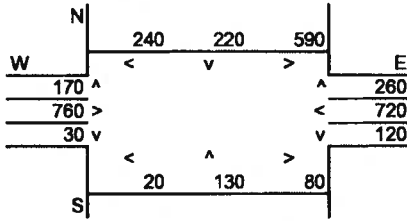
Intersection: Meadowview Road and 24th Street
 Analysis Condition: Baseline No Project

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: 24th Street	At Grade	4	5
East-West Roadway: Meadowview Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,210	N-S Road:	1,610
E-W Road:	2,140	E-W Road:	2,530

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference 25 Feet	Reference 50 Feet	Reference 100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,210	12.26	0.39	0.33	0.25
East-West Road	7.0	5.4	3.8	2,140	12.26	1.84	1.42	1.00
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,610	12.26	0.51	0.43	0.34
East-West Road	7.0	5.4	3.8	2,530	12.26	2.17	1.68	1.18

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.2	2.7	5.8
50 Feet from Roadway Edge	1.7	2.1	5.3
100 Feet from Roadway Edge	1.2	1.5	4.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

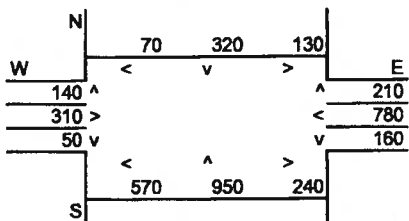
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2005

Roadway Data

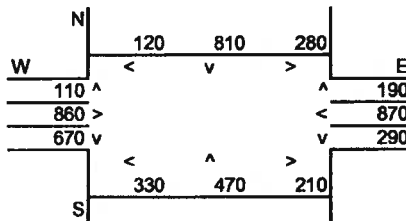
Intersection: Mack Road and Franklin Boulevard
Analysis Condition: Baseline No Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Franklin Boulevard	At Grade	4	5
East-West Roadway:	Mack Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,290	N-S Road:	2,780
E-W Road:	1,920	E-W Road:	2,960

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A _i Reference CO Concentrations			B Traffic Volume	C Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,290	12.26	1.97	1.52	1.07
East-West Road	2.6	2.2	1.7	1,920	12.26	0.61	0.52	0.40
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	2,780	12.26	0.89	0.75	0.58
East-West Road	7.0	5.4	3.8	2,960	12.26	2.54	1.96	1.38

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.6	3.4	6.4
50 Feet from Roadway Edge	2.0	2.7	5.8
100 Feet from Roadway Edge	1.5	2.0	5.2

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

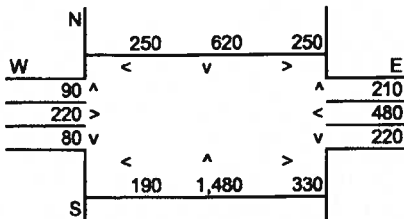
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2005

Roadway Data

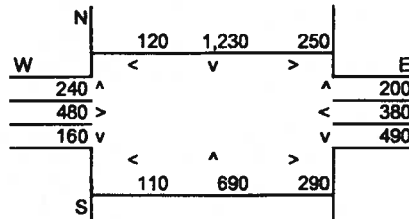
Intersection: Cosumnes River Boulevard and Franklin Boulevard
Analysis Condition: Baseline No Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Franklin Boulevard	At Grade	4	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,920	N-S Road:	2,970
E-W Road:	1,710	E-W Road:	2,090

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,920	12.26	2.51	1.93	1.36
East-West Road	2.6	2.2	1.7	1,710	12.26	0.55	0.46	0.36
P.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,970	12.26	2.55	1.97	1.38
East-West Road	2.6	2.2	1.7	2,090	12.26	0.67	0.56	0.44

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	3.1	3.2	6.2
50 Feet from Roadway Edge	2.4	2.5	5.7
100 Feet from Roadway Edge	1.7	1.8	5.1

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

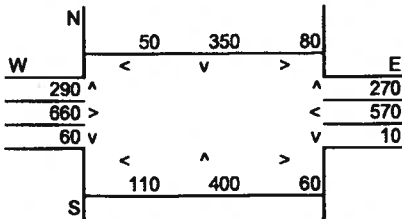
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2005

Roadway Data

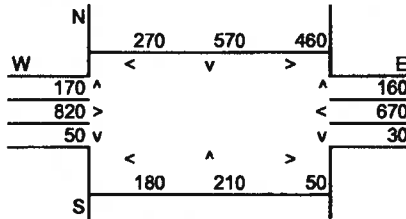
Intersection: Meadowview Road and Freepport Boulevard
 Analysis Condition: Baseline Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Freepport Boulevard	2	5	5
East-West Roadway:	Meadowview Road	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,440	N-S Road:	1,840
E-W Road:	1,740	E-W Road:	2,190

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations			Traffic	Emission	25 Feet	50 Feet	100 Feet
	25 Feet	50 Feet	100 Feet	Volume	Factors ²			
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,440	12.26	0.48	0.39	0.30
East-West Road	7.0	5.4	3.8	1,740	12.26	1.49	1.15	0.81
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,840	12.26	0.61	0.50	0.38
East-West Road	7.0	5.4	3.8	2,190	12.26	1.88	1.45	1.02

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.0	2.5	5.6
50 Feet from Roadway Edge	1.5	1.9	5.2
100 Feet from Roadway Edge	1.1	1.4	4.8

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

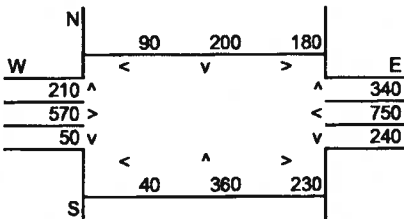
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2005

Roadway Data

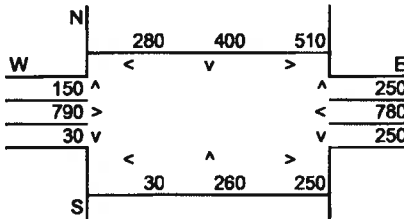
Intersection: Meadowview Road and 24th Street
 Analysis Condition: Baseline Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	24th Street	2	5	5
East-West Roadway:	Meadowview Road	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,380	N-S Road:	1,850
E-W Road:	2,310	E-W Road:	2,830

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference 25 Feet	Reference 50 Feet	Reference 100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,380	12.26	0.46	0.37	0.29
East-West Road	7.0	5.4	3.8	2,310	12.26	1.98	1.53	1.08
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,850	12.26	0.61	0.50	0.39
East-West Road	7.0	5.4	3.8	2,830	12.26	2.43	1.87	1.32

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.4	3.0	6.1
50 Feet from Roadway Edge	1.9	2.4	5.5
100 Feet from Roadway Edge	1.4	1.7	5.0

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

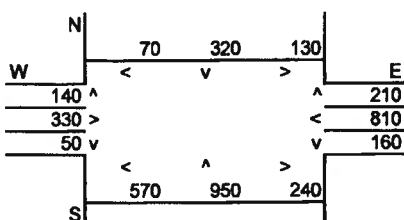
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2005

Roadway Data

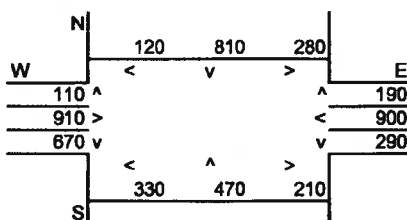
Intersection: Mack Road and Franklin Boulevard
Analysis Condition: Baseline Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Franklin Boulevard	At Grade	4	5
East-West Roadway:	Mack Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,290	N-S Road:	2,780
E-W Road:	1,970	E-W Road:	3,040

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,290	12.26	1.97	1.52	1.07
East-West Road	2.6	2.2	1.7	1,970	12.26	0.63	0.53	0.41
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	2,780	12.26	0.89	0.75	0.58
East-West Road	7.0	5.4	3.8	3,040	12.26	2.61	2.01	1.42

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.6	3.5	6.4
50 Feet from Roadway Edge	2.0	2.8	5.9
100 Feet from Roadway Edge	1.5	2.0	5.2

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

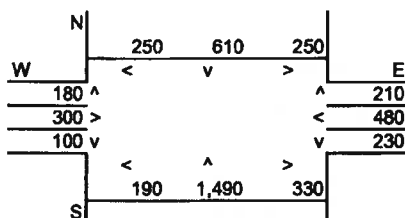
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2005

Roadway Data

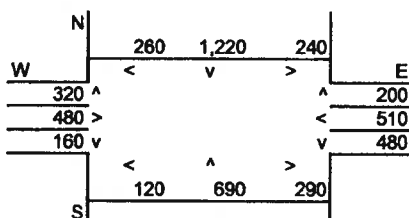
Intersection: Cosumnes River Boulevard and Franklin Boulevard
Analysis Condition: Baseline Plus Project

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Franklin Boulevard	At Grade	4	5	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,990	N-S Road:	2,960
E-W Road:	1,800	E-W Road:	2,200

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,990	12.26	2.57	1.98	1.39
East-West Road	2.6	2.2	1.7	1,800	12.26	0.57	0.49	0.38
P.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,960	12.26	2.54	1.96	1.38
East-West Road	2.6	2.2	1.7	2,200	12.26	0.70	0.59	0.46

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	3.1	3.2	8.2
50 Feet from Roadway Edge	2.5	2.6	5.7
100 Feet from Roadway Edge	1.8	1.8	5.1

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

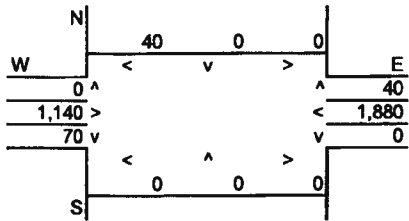
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2005

Roadway Data

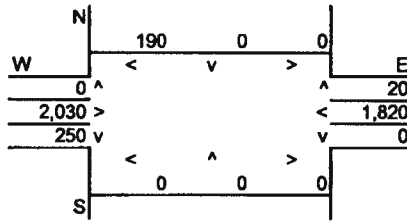
Intersection: Cosumnes River Boulevard and Franklin Boulevard
 Analysis Condition: Baseline Plus Project

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Retail Driveway	At Grade	2	5	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	80	N-S Road:	250
E-W Road:	3,130	E-W Road:	4,290

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	80	12.26	0.03	0.02	0.02
East-West Road	7.0	5.4	3.8	3,130	12.26	2.69	2.07	1.46
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	250	12.26	0.08	0.07	0.05
East-West Road	7.0	5.4	3.8	4,290	12.26	3.68	2.84	2.00

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	2.7	3.8	6.7
50 Feet from Roadway Edge	2.1	2.9	6.0
100 Feet from Roadway Edge	1.5	2.1	5.3

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

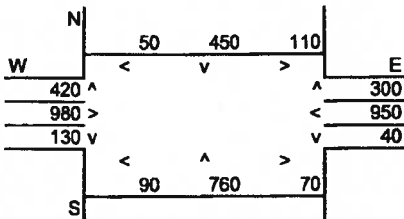
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

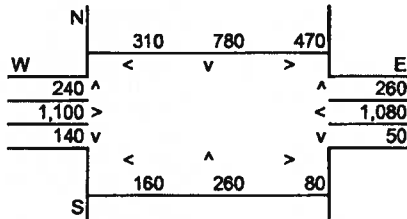
Intersection: Meadowview Road and Freeport Boulevard
 Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Freeport Boulevard	At Grade	2	5
East-West Roadway:	Meadowview Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,090	N-S Road:	2,320
E-W Road:	2,620	E-W Road:	3,040

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	2,090	1.65	0.09	0.08	0.06
East-West Road	7.0	5.4	3.8	2,620	1.65	0.30	0.23	0.16
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	2,320	1.65	0.10	0.08	0.07
East-West Road	7.0	5.4	3.8	3,040	1.65	0.35	0.27	0.19

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.4	0.5	4.0
50 Feet from Roadway Edge	0.3	0.4	3.9
100 Feet from Roadway Edge	0.2	0.3	3.8

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

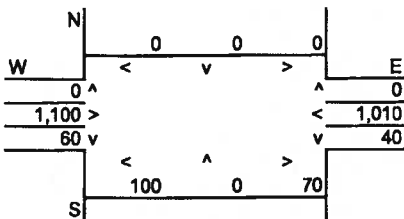
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

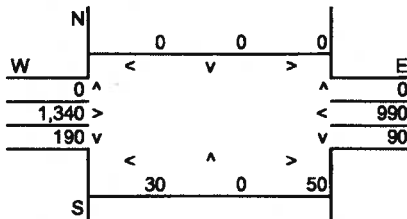
Intersection: Meadowview Road and Manorside Drive
Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Manorside Drive	At Grade	2	5
East-West Roadway:	Meadowview Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	270	N-S Road:	360
E-W Road:	2,270	E-W Road:	2,550

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference 25 Feet	Reference 50 Feet	Reference 100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	270	1.65	0.01	0.01	0.01
East-West Road	7.0	5.4	3.8	2,270	1.65	0.26	0.20	0.14
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	360	1.65	0.02	0.01	0.01
East-West Road	7.0	5.4	3.8	2,550	1.65	0.29	0.23	0.16

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.3	0.3	3.9
50 Feet from Roadway Edge	0.2	0.2	3.8
100 Feet from Roadway Edge	0.1	0.2	3.8

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

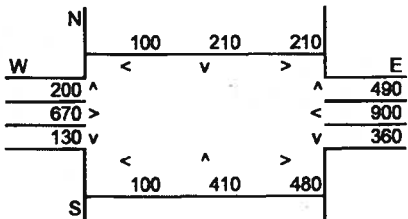
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

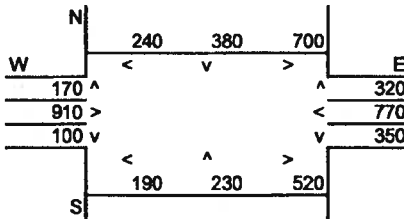
Intersection: Meadowview Road and 24th Street
 Analysis Condition: Cumulative Plus Project

Roadway Type	No. of Lanes	Average Speed		
		A.M.	P.M.	
North-South Roadway: 24th Street	At Grade	2	5	5
East-West Roadway: Meadowview Road	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,690	N-S Road:	2,040
E-W Road:	3,110	E-W Road:	3,570

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference 25 Feet	Reference 50 Feet	Reference 100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,690	1.65	0.08	0.06	0.05
East-West Road	7.0	5.4	3.8	3,110	1.65	0.36	0.28	0.19
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	2,040	1.65	0.09	0.07	0.06
East-West Road	7.0	5.4	3.8	3,570	1.65	0.41	0.32	0.22

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.4	0.5	4.0
50 Feet from Roadway Edge	0.3	0.4	4.0
100 Feet from Roadway Edge	0.2	0.3	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

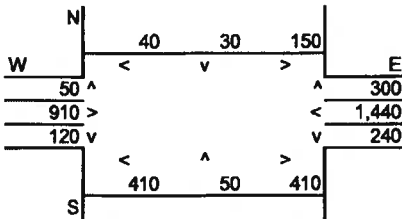
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

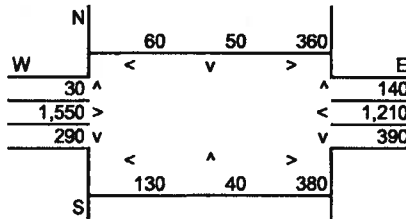
Intersection: Meadowview Road and Detroit Boulevard
 Analysis Condition: Cumulative Plus Project

Roadway Type	No. of Lanes	Average Speed		
		A.M.	P.M.	
North-South Roadway: Detroit Boulevard	At Grade	2	5	5
East-West Roadway: Meadowview Road	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,260	N-S Road:	1,280
E-W Road:	3,450	E-W Road:	4,030

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations			Traffic	Emission	25 Feet	50 Feet	100 Feet
	25 Feet	50 Feet	100 Feet	Volume	Factors ²			
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,260	1.65	0.06	0.05	0.04
East-West Road	7.0	5.4	3.8	3,450	1.65	0.40	0.31	0.22
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,280	1.65	0.08	0.05	0.04
East-West Road	7.0	5.4	3.8	4,030	1.65	0.47	0.36	0.25

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.5	0.5	4.1
50 Feet from Roadway Edge	0.4	0.4	4.0
100 Feet from Roadway Edge	0.3	0.3	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

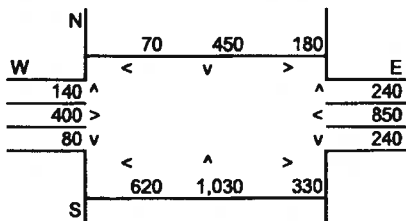
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

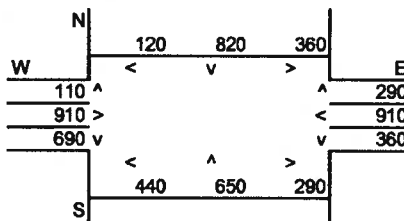
Intersection: Mack Road and Franklin Boulevard
Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Franklin Boulevard	At Grade	4	5
East-West Roadway:	Mack Road	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,750	N-S Road:	3,250
E-W Road:	2,240	E-W Road:	3,180

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	Reference CO Concentrations			B Traffic Volume	C Emission Factors ²	Estimated CO Concentrations		
	A ₁ 25 Feet	A ₂ 50 Feet	A ₃ 100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	2,750	1.65	0.32	0.25	0.17
East-West Road	2.6	2.2	1.7	2,240	1.65	0.10	0.08	0.06
P.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	3,250	1.65	0.38	0.29	0.20
East-West Road	2.6	2.2	1.7	3,180	1.65	0.14	0.12	0.09

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.4	0.5	4.0
50 Feet from Roadway Edge	0.3	0.4	4.0
100 Feet from Roadway Edge	0.2	0.3	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

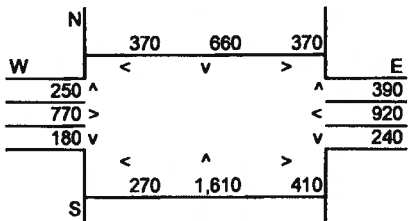
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

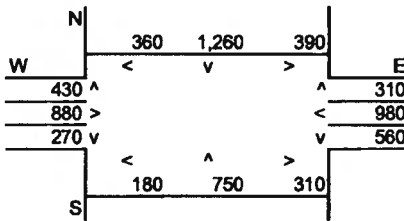
Intersection: Cosumnes River Boulevard and Franklin Boulevard
 Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Franklin Boulevard	At Grade	4	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,650	N-S Road:	3,500
E-W Road:	3,100	E-W Road:	3,430

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	3,850	1.65	0.42	0.33	0.23
East-West Road	2.6	2.2	1.7	3,100	1.65	0.13	0.11	0.09
P.M. Peak Traffic Hour								
North-South Road	7.0	5.4	3.8	3,500	1.65	0.40	0.31	0.22
East-West Road	2.6	2.2	1.7	3,430	1.65	0.15	0.12	0.10

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.6	0.6	4.1
50 Feet from Roadway Edge	0.4	0.4	4.0
100 Feet from Roadway Edge	0.3	0.3	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
 Project Title: Delta Shores

Background Information

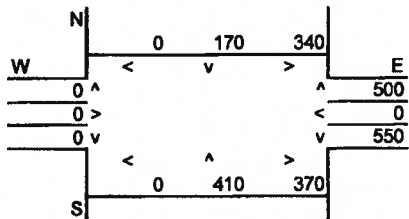
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
 Background 1-hour CO Concentration (ppm): 0.0
 Background 8-hour CO Concentration (ppm): 3.6
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

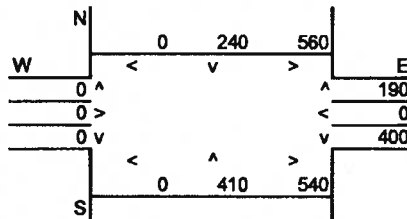
Intersection: Cosumnes River Boulevard and Freeport Boulevard
 Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Freeport Boulevard	At Grade	2	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,500	N-S Road:	1,590
E-W Road:	1,760	E-W Road:	1,690

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,500	1.65	0.07	0.05	0.04
East-West Road	7.0	5.4	3.8	1,760	1.65	0.20	0.16	0.11
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,590	1.65	0.07	0.06	0.04
East-West Road	7.0	5.4	3.8	1,690	1.65	0.20	0.15	0.11

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 Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.3	0.3	3.9
50 Feet from Roadway Edge	0.2	0.2	3.8
100 Feet from Roadway Edge	0.2	0.2	3.8

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

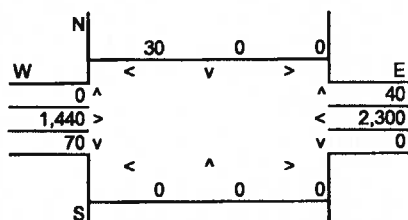
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

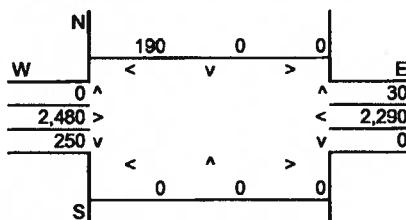
Intersection: Cosumnes River Boulevard and Retail Driveway
Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Retail Driveway	At Grade	2	5
East-West Roadway:	Cosumnes River Boulevard	At Grade	4	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 70
E-W Road: 3,840

N-S Road: 250
E-W Road: 5,210

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	A ₁ 25 Feet	A ₂ 50 Feet	A ₃ 100 Feet			B	C	25 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	70	1.65	0.00	0.00	0.00
East-West Road	7.0	5.4	3.8	3,840	1.65	0.44	0.34	0.24
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	250	1.65	0.01	0.01	0.01
East-West Road	7.0	5.4	3.8	5,210	1.65	0.60	0.46	0.33

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.4	0.6	4.1
50 Feet from Roadway Edge	0.3	0.5	4.0
100 Feet from Roadway Edge	0.2	0.3	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

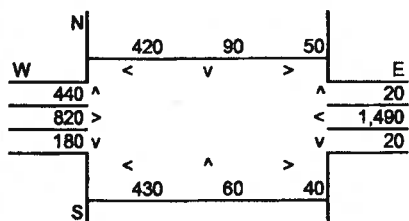
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

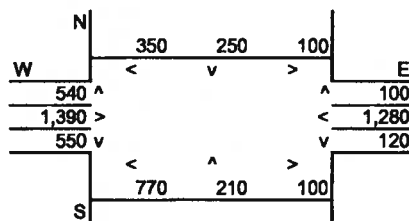
Intersection: Cosumnes River Boulevard and Delta Shores Circle
Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Delta Shores Circle	2	5	5
East-West Roadway:	Cosumnes River Boulevard	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,080	N-S Road:	2,000
E-W Road:	3,780	E-W Road:	4,880

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,080	1.65	0.05	0.04	0.03
East-West Road	7.0	5.4	3.8	3,780	1.65	0.44	0.34	0.24
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	2,000	1.65	0.09	0.07	0.06
East-West Road	7.0	5.4	3.8	4,880	1.65	0.56	0.43	0.31

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.5	0.7	4.2
50 Feet from Roadway Edge	0.4	0.5	4.0
100 Feet from Roadway Edge	0.3	0.4	3.9

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

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D51311.00
Project Title: Delta Shores

Background Information

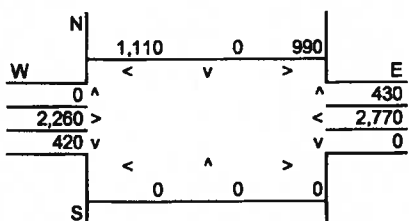
Nearest Air Monitoring Station measuring CO: Sacramento T Street Station
Background 1-hour CO Concentration (ppm): 0.0
Background 8-hour CO Concentration (ppm): 3.6
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

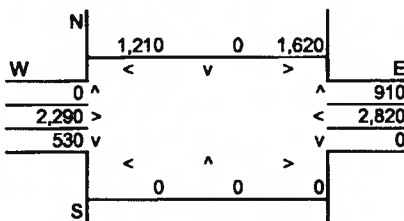
Intersection: Cosumnes River Boulevard and SR 99 SB Ramps
Analysis Condition: Cumulative Plus Project

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	SR 99 SB Ramps	2	5	5
East-West Roadway:	Cosumnes River Boulevard	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,530	N-S Road:	3,740
E-W Road:	6,560	E-W Road:	7,640

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations		
	Reference CO Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	2,530	1.65	0.11	0.09	0.07
East-West Road	7.0	5.4	3.8	6,560	1.65	0.76	0.58	0.41
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	3,740	1.65	0.17	0.14	0.10
East-West Road	7.0	5.4	3.8	7,640	1.65	0.88	0.68	0.48

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	0.9	1.0	4.5
50 Feet from Roadway Edge	0.7	0.8	4.3
100 Feet from Roadway Edge	0.5	0.6	4.1

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