APPENDIX J

# AIR QUALITY METHODOLOGY AND ASSUMPTIONS

# CALINE-4 MODELING

The CALINE-4 model is a fourth-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway. The CALINE-4 model allows roadways to be broken into multiple links that can vary in traffic volume, emission rates, height, width, etc.

A screening-level form of the CALINE-4 program was used to predict concentrations.<sup>1</sup> Normalized concentrations for each roadway size (2 lanes, 4 lanes, etc.) are adjusted for the two-way traffic volume and emission factor. Calculations were made for a receptor at a corner of the intersection, located at the curb. Emission factors were derived from the California Air Resources Board EMFAC7-2002 computer program based on a 2005, 2015 and 2025 Placer County vehicle mix.

The screening-level form of the CALINE-4 program was developed for Bay Area (coastal valley) meteorology. The assumed worst-case assumed wind speed in the model is 1.0 meters per second. To adjust for the lighter winds typically assumed for the Sacramento Valley (interior valley meteorology), the normalized concentrations were doubled based on the assumption of a 0.5 meter per second worst-case wind speed.

The screening form of the CALINE-4 model calculates the local contribution of nearby roads to the total concentration. The other contribution is the background level attributed to more distant traffic. The 1-hour background level in 2005 was taken as 3.5 PPM and the 8-hour background concentration was taken as 1.7 PPM. The 1-hour background level in 2015 and 2025 was taken as 2.6 PPM and the 8-hour background concentration was taken as 1.7 PPM. The 1-hour background level in 2015 and 2025 was taken as 2.6 PPM and the 8-hour background concentration was taken as 1.3 PPM. These backgrounds were estimated using isopleth maps and correction factors developed by the Sacramento Metropolitan Air Quality Management District that extend into southwestern Placer County.<sup>2</sup>

Eight-hour concentrations were obtained from the 1-hour output of the CALINE-4 model using a persistence factor of 0.7.

The output from the spreadsheet model that calculated estimated carbon monoxide concentrations is attached.

<sup>&</sup>lt;sup>1</sup> Bay Area Air Quality Management District, <u>BAAQMD CEQA Guidelines</u>, 1996 (Revised 1999).

<sup>&</sup>lt;sup>2</sup> Sacramento Metropolitan Air Quality Management District, <u>Guide to Air Quality</u> <u>Assessment in Sacramento County</u>, 2004.

# URBEMIS-2002

Estimates of regional emissions generated by project traffic were made using a program called URBEMIS-2002.<sup>3</sup> URBEMIS-2002 is a program that estimates the emissions that result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

The URBEMIS-2002 program was used to estimate construction emissions. Estimating construction emissions for a long-term project is difficult since the rate of construction is unknown and will change over the buildout of the project. Construction emissions were based on buildout of the initial phase of the project, assumed to occur by 2015. Assumed land uses are described in Table 4.7-22 of the DEIR. For each land use category a total acreage was estimated. It was assumed that all road building and park lands would be included in this initial phase, so the total acreages for these land uses were included in the estimate of initial phase area to be graded. The resulting emissions from buildout of the initial phase were divided by nine to provide an estimate of average emissions over a nine-year period. The URBEMIS-2002 output for construction is attached with the project name "Placer Vineyards Construction".

Construction emissions were also estimated for the Blueprint Alternative using URBEMIS-2002. It was assumed that the footprint of development for the initial project would be unchanged from that of the proposed project, but the density of development increased. Initial project land uses were increased proportionally to reflect the higher amount of development for the Blueprint Alternative. Grading phase emissions were unchanged for this alternative, but the maximum daily emissions during later phases of construction is higher than for the proposed project. The URBEMIS-200 output for construction is attached with the project name "Blueprint Construction",

Operational inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Trip generation rates for proposed project and Blueprint Alternative land uses were provided by the project transportation consultant. Default average speeds for the lower Sacramento Valley were used.

Trip lengths for the proposed project and Blueprint Alternative were adjusted so that the total Vehicle Miles Traveled (VMT) calculated by the URBEMIS-2002 program matched VMT as calculated by the Placer County Travel Demand Model. This was accomplished by running the URBEMIS-2002 program with default trip lengths and

<sup>&</sup>lt;sup>3</sup> Jones and Stokes Associates, <u>Software User's Guide: URBEMIS2002 for Windows</u> with Enhanced Construction Module, Version 8.7, April 2005.

multiplying all trip lengths by a correction factor that results in the URBEMIS-2002 VMT equaling the Placer County Travel Demand Model.

The URBEMIS-2002 was run for both summer and winter conditions. The summer run was used to estimate ozone precursor emissions, while the winter runs was used to estimate project carbon monoxide and particulate matter emissions.

The analysis was carried out assuming a 2025 vehicle mix. The URBEMIS-2002 output is attached.

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#### URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 

 8.7\Projects2k2\placervineyardsconstruction.urb

 Project Name:
 Placer Vineyards Construction

 Project Location:
 Lower Sacramento Valley Air Basin

 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

\_\_\_\_\_SUMMARY REPORT (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

					PM10	PM10
PM10						
*** 2006 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST
DUST						
TOTALS (lbs/day, unmitigated)	28,819.15	17,831.21	18,733.92	3.82	5,463.14	783.10
4,680.04						

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#### URBEMIS 2002 For Windows 8.7.0

File Name:	C:\Program Files\URBEMIS 2002 Version							
8.7\Projects2k2\placervineyardsconstruction.urb								
Project Name:	Placer Vineyards Construction							
Project Location:	Lower Sacramento Valley Air Basin							
On-Road Motor Vehicle Emissions	Based on EMFAC2002 version 2.2							

#### DETAIL REPORT (Pounds/Day - Summer)

Construction Start Month and Year: January, 2006 Construction Start Month and Year: January, 2005 Construction Duration: 12 Total Land Use Area to be Developed: 1872.5 acres Maximum Acreage Disturbed Per Day: 468 acres Single Family Units: 5248 Multi-Family Units: 2013 Retail/Office/Institutional/Industrial Square Footage: 2140825

#### CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

	MILD UNHI	IIOAIDD (I	<u>05/ ddy/</u>		PM10	PM10	PM10	
Source	ROG	NOx	CO	S02	TOTAL	EXHAUST	DUST	
*** 2006***								
Phase 1 - Demolition Emiss:	ions							
Fugitive Dust	-	-	-	-	0.00	-	0.00	
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00	
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Phase 2 - Site Grading Emissions								
Fugitive Dust	-	-	-	_	4,680.00	_	4,680.00	
Off-Road Diesel	86.14	689.10	613.30	-	31.87	31.87	0.00	
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Worker Trips	0.89	1.67	17.93	0.01	0.07	0.03	0.04	
Maximum lbs/day	87.03	690.77	631.23	0.01	4,711.94	31.90	4,680.04	
Phase 3 - Building Construct	<u>ction</u>							
Bldg Const Off-Road Diesel	1,817.69	14,085.34	13,269.88	-	636.91	636.91	0.00	
Bldg Const Worker Trips	34.14	20.52	433.90	0.06	5.02	0.34	4.68	
Arch Coatings Off-Gas	26,302.69	-	-	-	-	-	_	
Arch Coatings Worker Trips	34.14	20.52	433.90	0.06	5.02	0.34	4.68	
Asphalt Off-Gas	74.34	-	-	-	-	-	_	
Asphalt Off-Road Diesel	540.64	3,449.47	4,513.91	-	140.03	140.03	0.00	
Asphalt On-Road Diesel	12.72	253.68	46.91	3.70	5.71	5.45	0.26	
Asphalt Worker Trips	2.79	1.67	35.42	0.00	0.41	0.03	0.38	
Maximum lbs/day	28,819.15	17,831.21	18,733.92	3.82	793.10	783.10	10.00	
Max lbs/day all phases	28,819.15	17,831.21	18,733.92	3.82	5,463.14	783.10	4,680.04	

## Phase 1 - Demolition Assumptions: Phase Turned OFF

<u>Phase 2</u>	- Site Grading Assumptions							
Start Month/Year for Phase 2: Jan '06								
<u>Phase 2</u>	Duration: 1.3 months							
On-Road	Truck Travel (VMT): 0							
Off-Road	Equipment							
No.	Туре	Horsepower	Load Factor	Hours/Day				
20	Rubber Tired Dozers	352	0.590	8.0				
20	Tractor/Loaders/Backhoes	79	0.465	8.0				
<u>Phase 3</u>	- Building Construction Assumptions							
Start Mo	<u>nth/Year for Phase 3: Feb '06</u>							
<u>Phase 3</u>	Duration: 10.7 months							
Start	Month/Year for SubPhase Building: F	<u>eb '06</u>						
<u>SubPha</u>	se Building Duration: 10.7 months							
Off-Ro	ad Equipment							
No.	Туре	Horsepower	Load Factor	<u>Hours/Day</u>				
302	Concrete/Industrial saws	84	0.730	8.0				
604	Other Equipment	190	0.620	8.0				
302	Rough Terrain Forklifts	94	0.475	8.0				
Start	Start Month/Year for SubPhase Architectural Coatings: Nov '06							
SubPha	se Architectural Coatings Duration:	1.1 months						

Start Month/Year for SubPhase Asphalt: Dec '06 SubPhase Asphalt Duration: 0.5 months

Acres to be Paved: 312.1 Off-Road Equipment

	ad Equipment			
No.	Туре	Horsepower	Load Factor	Hours/Day
57	Graders	174	0.575	8.0

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57	Off Highway Trucks	417	0.490	8.0
57	Pavers	132	0.590	8.0
57	Paving Equipment	111	0.530	8.0
113	Rollers	114	0.430	8.0

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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

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File Name:	C:\Progra	am Files\U	RBEMIS 200	2 Version	
8.7\Projects2k2\placervineyard	sproject.u:	<u>rb</u>			
Project Name:	Placer V	ineyards F	<u>roject</u>		
Project Location:	Lower Sa	cramento V	<u>'alley Air</u>	<u>Basin</u>	
On-Road Motor Vehicle Emission	<u>s Based on</u>	EMFAC2002	version 2	.2	
SUMMARY	REPORT				
(Pounds/Da	<u>y - Summer</u>	<u>)</u>			
AREA SOURCE EMISSION ESTIMATES					
	ROG	NOx	CO	S02	PM10
TOTALS (lbs/day,unmitigated)	1,259.14	207.50	505.31	4.68	1.97
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES				
	ROG	NOx	CO	SO2	PM10
<u>TOTALS (lbs/day,unmitigated)</u>	673.76	593.54	6,756.01	17.21	2,626.03
SUM OF AREA AND OPERATIONAL EM	ISSION EST	<u>IMATES</u>			
	ROG	NOx	CO	S02	PM10
TOTALS (lbs/day,unmitigated)	1,932.90	801.04	7,261.32	21.90	2,628.00

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File Name:	C:\Progra	am Files\T	JRBEMIS 200	<u>)2 Version</u>	
8.7\Projects2k2\placervineyard	sproject.u:	<u>rb</u>			
Project Name:	Placer V	ineyards l	<u>Project</u>		
Project Location:	Lower Sa	cramento V	Valley Air	Basin	
On-Road Motor Vehicle Emission	<u>s Based on</u>	EMFAC2002	2 version 2	2.2	
SUMMARY	REPORT				
(Pounds/Day	y - Winter	<u>)</u>			
	-				
AREA SOURCE EMISSION ESTIMATES					
	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	9,219.67	477.34	14,775.86	34.86	2,186.93
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES				
	ROG	NOx	CO	SO2	PM10
<u>TOTALS (lbs/day,unmitigated)</u>	661.08	891.50	6,919.89	14.90	2,626.03
SUM OF AREA AND OPERATIONAL EM	ISSION EST	IMATES			
	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	9,880.75	1,368.84	21,695.74	49.76	4,812.96

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File Name:	C:\Program Files\URBEMIS 2002 Version							
8.7\Projects2k2\placervineyardsproject.urb								
Project Name:	Placer Vineyards Project							
Project Location:	Lower Sacramento Valley Air Basin							
On-Road Motor Vehicle Emissions	Based on EMFAC2002 version 2.2							
DETAIL REPORT								
(Pounds/Day - Winter)								

AREA SOURCE EMISSION ESTIMATE	S (Winter	Pounds per	<u>Day, Unm</u>	<u>itiqated)</u>	
Source	ROG	NOx	CO	S02	PM10
Natural Gas	15.65	205.38	106.83	0	0.39
Hearth	8,021.36	271.96	14,669.02	34.86	2,186.54
Landscaping - No winter emis	sions				
Consumer Prdcts	691.38	-	-	-	
Architectural Coatings	491.29	-	-	-	-
TOTALS(lbs/dav,unmitigated)	9,219.67	477.34	14,775.86	34.86	2,186.93

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#### UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	273.07	385.50	2,961.47	6.57	1,156.44
Condo/townhouse general	77.73	109.73	842.96	1.87	329.17
Retirement community	10.00	14.12	108.48	0.24	42.36
School	23.61	30.52	238.47	0.50	88.50
Place of worship	17.63	22.76	178.96	0.37	65.20
Park	1.17	1.56	12.15	0.03	4.53
Retail	147.84	179.55	1,438.63	2.86	504.76
Office	92.06	126.88	969.81	2.14	376.81
Public/Quasi Public	17.97	20.87	168.96	0.33	58.25

TOTAL EMISSIONS (lbs/day) 661.08 891.50 6,919.89 14.90 2,626.03

Includes correction for passby trips. Includes the following double counting adjustment for internal trips:

0.00 % reduction. Residential trips: 0.00 % reduction. Nonresidential trips:

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

					No.	<u> </u>
Unit Type	Acreage	Trip	Rate		Units	<u>Trips</u>
Single family housing	3,153.00	9.00	trips/dwellin	g unit	9,459.00	85,131.00
Condo/townhouse general	233.00	6.50	trips/dwellin	g unit	3,728.00	24,232.00
Retirement community	189.00	3.30	trips/dwellin	g unit	945.00	3,118.50
School		1.00	trips/student	S	9,017.00	9,017.00
Place of worship		9.30	trips/1000 sc	. ft.	801.50	7,453.95
Park		2.20	trips/acres		217.00	477.40
Retail		35.00	trips/1000 sc	. ft.	1,855.40	64,939.00
Office		17.70	trips/1000 sc	. ft.	1,764.20	31,226.34
Public/Quasi Public		25.00	trips/1000 sc	. ft.	307.10	7,677.50
			Cum of		The state of the state	222 272 60

um Total Vehicle Miles Traveled 1,733,802.37

Vehicle Assumptions:

#### Fleet Mix:

Vehicle Type	Percent Type	<u>Non-Catalyst</u>	Catalyst	<u>Diesel</u>
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lb	s 15.70	0.00	99.40	0.60
Light Truck 3,751- 5,75	0 16.50	0.00	100.00	0.00
Med Truck 5,751-8,50	0 7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,00	0 1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,00	0 0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,00	0 0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,00	0 0.80	0.00	0.00	100.00
Line Haul > 60,000 lb	s 0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

#### Travel Conditions

		Residential			Commercial	<u>L</u>
	Home-	Home-	Home-			_
	Work	Shop	Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	17.1	6.7	8.1	13.7	7.9	7.9
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

<u>% of Trips - Commercial (by land use)</u>

School	20.0	10.0	70.0
Place of worship	3.0	1.5	95.5
Park	5.0	2.5	92.5

Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5

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 Public/Quasi Public
 10.0
 5.0
 85.0

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Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/3153. to 9.00/3153. The Trip Rate and/or Acreage values for Condominium/townhouse general have changed from the defaults 6.9/233. to 6.5/233. The Trip Rate and/or Acreage values for Retirement community have changed from the defaults 3.71/189. to 3.3/189.

Changes made to the default values for Area

Changes made to the default values for Operations

The pass by trips option switch changed from off to on. The double counting option switch changed from off to on. The operational emission year changed from 2005 to 2025. The home based work selection item changed from 8 to 7. The home based work urban trip length changed from 9.7 to 17.07. The home based shopping urban trip length changed from 3.8 to 6.69. The home based other selection item changed from 8 to 7. The home based other urban trip length changed from 4.6 to 8.09. The commercial based commute urban trip length changed from 7.8 to 13.73. The commercial based non-work selection item changed from 8 to 7. The commercial based non-work urban trip length changed from 8 to 7. The commercial based non-work urban trip length changed from 8 to 7. The commercial based non-work urban trip length changed from 8 to 7. The commercial based non-work urban trip length changed from 8 to 7. The commercial based non-work urban trip length changed from 8 to 7. The commercial based non-work urban trip length changed from 4.5 to 7.92. The commercial based customer urban trip length changed from 4.5 to 7.92. The commercial based customer urban trip length changed from 4.5 to 7.92.

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## URBEMIS 2002 For Windows 8.7.0

File Name:	C:\Program Files\URBEMIS 2002 Version
8.7\Projects2k2\placervineyards	project.urb
Project Name:	Placer Vineyards Project
Project Location:	Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions	Based on EMFAC2002 version 2.2

# DETAIL REPORT (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES	(Summer	Pounds per	Day, Unmi	<u>tiqated)</u>	
Source	ROG	NOx	CO	S02	PM10
Natural Gas	15.65	205.38	106.83	0	0.39
Hearth - No summer emissions					
Landscaping	60.82	2.12	398.47	4.68	1.58
Consumer Prdcts	691.38	-	-	-	
Architectural Coatings	491.29	-	-	-	-
TOTALS(lbs/dav,unmitigated)	1,259.14	207.50	505.31	4.68	1.97

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#### UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	267.39	255.87	2,961.03	7.59	1,156.44
Condo/townhouse general	81.44	72.83	842.84	2.16	329.17
Retirement community	12.88	9.37	108.47	0.28	42.36
School	65.26	20.37	228.93	0.58	88.50
Place of worship	18.32	15.23	167.22	0.43	65.20
Park	2.06	1.04	11.50	0.03	4.53
Retail	127.89	120.47	1,319.08	3.30	504.76
Office	82.69	84.35	961.61	2.47	376.81
<u>Public/Quasi Public</u>	15.83	14.01	155.32	0.38	58.25

TOTAL EMISSIONS (lbs/day) 673.76 593.54 6,756.01 17.21 2,626.03

Includes correction for passby trips. Includes the following double counting adjustment for internal trips:

0.00 % reduction. Residential trips: 0.00 % reduction. Nonresidential trips:

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

					No.	<u> </u>
Unit Type	Acreage	Trip	Rate		Units	Trips
Single family housing	3,153.00	9.00	trips/dwelling	unit	9,459.00	85,131.00
Condo/townhouse general	233.00	6.50	trips/dwelling	unit	3,728.00	24,232.00
Retirement community	189.00	3.30	trips/dwelling	unit	945.00	3,118.50
School		1.00	trips/students		9,017.00	9,017.00
Place of worship		9.30	trips/1000 sq.	ft.	801.50	7,453.95
Park		2.20	trips/acres		217.00	477.40
Retail		35.00	trips/1000 sq.	ft.	1,855.40	64,939.00
Office		17.70	trips/1000 sq.	ft.	1,764.20	31,226.34
<u>Public/Ouasi Public</u>		25.00	trips/1000 sq.	ft.	307.10	7,677.50
			Cum of T	lotol	Traina	222 272 60

um Total Vehicle Miles Traveled 1,733,802.37

## Vehicle Assumptions:

#### Fleet Mix:

Vehicle Type	<u>Percent Type</u>	<u>Non-Catalyst</u>	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	s 15.70	0.00	99.40	0.60
Light Truck 3,751- 5,75	0 16.50	0.00	100.00	0.00
Med Truck 5,751-8,50	0 7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,00	0 1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,00	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,00	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,00	0 0.80	0.00	0.00	100.00
Line Haul > 60,000 lb;	s 0.00	0.00	0.00	100.00
<u>Urban Bus</u>	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

#### Travel Conditions

	Resident		Commercia	1	
Hor	ne- Home	- Home-			
WOI	rk Shop	Other	Commute	Non-Work	Customer
Urban Trip Length (miles) 17.	.1 6.7	8.1	13.7	7.9	7.9
Rural Trip Length (miles) 16.	.8 7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph) 35.	.0 35.0	35.0	35.0	35.0	35.0
<u>% of Trips - Residential 27</u>	.3 21.2	51.5			
<u>% of Trips - Commercial (by ]</u> School	<u>land use)</u>		20.0	10.0	70.0
<u>Place of worship</u>			3.0	1.5	95.5

Park	5.0	2.5	92.5
Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5

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 Public/Quasi Public
 10.0
 5.0
 85.0

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Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/3153. to 9.00/3153. The Trip Rate and/or Acreage values for Condominium/townhouse general have changed from the defaults 6.9/233. to 6.5/233. The Trip Rate and/or Acreage values for Retirement community have changed from the defaults 3.71/189. to 3.3/189.

Changes made to the default values for Area

Changes made to the default values for Operations

The pass by trips option switch changed from off to on. The double counting option switch changed from off to on. The operational emission year changed from 2005 to 2025. The home based work selection item changed from 8 to 7. The home based shopping selection item changed from 9.7 to 17.07. The home based shopping urban trip length changed from 3.8 to 6.69. The home based other selection item changed from 4.6 to 8.09. The home based commute selection item changed from 8 to 7. The commercial based commute urban trip length changed from 8 to 7. The commercial based commute selection item changed from 8 to 7. The commercial based commute urban trip length changed from 7.8 to 13.73. The commercial based non-work selection item changed from 4.5 to 7.92. The commercial based customer selection item changed from 4.5 to 7.92.

# <u>Paqe: 1</u> 01/23/2006 4:34 PM

#### URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 

 Bite Name:
 C:\Frogram Files(OKBEMIS 2002 Vers

 8.7\Projects2k2\placerblueprintconst.urb

 Project Name:
 Blueprint Construction

 Project Location:
 Lower Sacramento Valley Air Basin

 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT

(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

CONDITION DATED TON DETITAL					PM10	PM10
PM10						
*** 2006 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST
DUST						
TOTALS (lbs/day,unmitigated)	40,616.43	24,883.37	26,146.42	5.31	5,772.96	1,092.92
4,680.04						

# <u>Paqe: 2</u> 01/23/2006 4:34 PM

#### URBEMIS 2002 For Windows 8.7.0

File Name:	C:\Program Files\URBEMIS 2002 Version
8.7\Projects2k2\placerblueprinto	const.urb
Project Name:	Blueprint Construction
Project Location:	Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions	Based on EMFAC2002 version 2.2

#### DETAIL REPORT (Pounds/Day - Summer)

Construction Start Month and Year: January, 2006 Construction Start Month and Year: Sandary, 2006 Construction Duration: 12 Total Land Use Area to be Developed: 1872.5 acres Maximum Acreage Disturbed Per Day: 468 acres Single Family Units: 7161 Multi-Family Units: 4016 Detail/Joffice/Jactivitional/Jacketrial Course Factor Retail/Office/Institutional/Industrial Square Footage: 2258925

#### CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

	MILD UNIT.	IIOAIDD (II	<u>05/ ddy/</u>		PM10	PM10	PM10
Source	ROG	NOx	CO	S02	TOTAL	EXHAUST	DUST
*** 2006***							
Phase 1 - Demolition Emiss:	ions						
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Maximum lbs/day</u>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emis	ssions						
Fugitive Dust	-	-	-	-	4,680.00	_	4,680.00
Off-Road Diesel	86.14	689.10	613.30	-	31.87	31.87	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.89	1.67	17.93	0.01	0.07	0.03	0.04
Maximum lbs/day	87.03	690.77	631.23	0.01	4,711.94	31.90	4,680.04
Phase 3 - Building Construct	<u>ction</u>						
Bldg Const Off-Road Diesel	2,539.96	19,682.17	18,542.68	-	889.98	889.98	0.00
Bldg Const Worker Trips	48.11	28.91	611.48	0.08	7.09	0.49	6.60
Arch Coatings Off-Gas	37,104.75	-	-	-	-	-	_
Arch Coatings Worker Trips	48.11	28.91	611.48	0.08	7.09	0.49	6.60
Asphalt Off-Gas	103.42	-	-	-	-	-	-
Asphalt Off-Road Diesel	750.51	4,788.12	6,266.29	-	194.34	194.34	0.00
Asphalt On-Road Diesel	17.70	352.93	65.26	5.14	7.94	7.58	0.36
Asphalt Worker Trips	3.87	2.33	49.22	0.01	0.57	0.04	0.53
Maximum lbs/day	40,616.43	24,883.37	26,146.42	5.31	1,107.01	1,092.92	14.09
Max lbs/day all phases	40,616.43	24,883.37	26,146.42	5.31	5,772.96	1,092.92	4,680.04

# Phase 1 - Demolition Assumptions: Phase Turned OFF

<u>Phase 2</u>	<u>- Site Grading Assumptions</u>			
Start Mo	<u>nth/Year for Phase 2: Jan '06</u>			
Phase 2	Duration: 1.3 months			
On-Road	Truck Travel (VMT): 0			
Off-Road	Equipment			
No.	Туре	Horsepower	Load Factor	Hours/Day
20	Rubber Tired Dozers	352	0.590	8.0
20	Tractor/Loaders/Backhoes	79	0.465	8.0
<u>Phase 3</u>	- Building Construction Assumptions			
Start Mo	nth/Year for Phase 3: Feb '06			
Phase 3	Duration: 10.7 months			
Start	<u>Month/Year for SubPhase Building: F</u>	<u>eb '06</u>		
<u>SubPha</u>	se Building Duration: 10.7 months			
Off-Ro	ad Equipment			
No.	Туре	Horsepower	Load Factor	Hours/Day
422	Concrete/Industrial saws	84	0.730	8.0
844	Other Equipment	190	0.620	8.0
422	Rough Terrain Forklifts	94	0.475	8.0
Start	Month/Year for SubPhase Architectur	<u>al Coatings: N</u>	iov '06	
SubPha	se Architectural Coatings Duration:	1.1 months		

Start Month/Year for SubPhase Asphalt: Dec '06 SubPhase Asphalt Duration: 0.5 months

Acres to be Paved: 434.2 Off-Road Equipment

<u> </u>	au nguipiliene			
No.	Туре	Horsepower	Load Factor	Hours/Day
79	Graders	174	0.575	8.0

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79	Off Highway Trucks	417	0.490	8.0
79	Pavers	132	0.590	8.0
79	Paving Equipment	111	0.530	8.0
158	Rollers	114	0.430	8.0

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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

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File Name: C:\Program Files\URBEMIS 2002 Version								
8.7\Projects2k2\placervineyard	<u>8.7\Projects2k2\placervineyardblueprint.urb</u>							
Project Name: Placer Vineyards Blueprint								
Project Location:	Lower Sa	<u>cramento V</u>	alley Air	<u>Basin</u>				
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2								
SUMMARY	REPORT							
(Pounds/Day	y - Summer	)						
		_						
AREA SOURCE EMISSION ESTIMATES								
	ROG	NOx	CO	S02	PM10			
TOTALS (lbs/day,unmitigated)	1,852.58	290.47	685.98	6.39	2.70			
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES							
	ROG	NOx	CO	S02	PM10			
TOTALS (lbs/day,unmitigated)	873.97	728.06	8,327.52	20.97	3,193.42			
SUM OF AREA AND OPERATIONAL EM	ISSION EST	IMATES						
	ROG	NOx	CO	S02	PM10			
TOTALS (lbs/day,unmitigated)	2,726.55	1,018.53	9,013.50	27.36	3,196.12			
IUIADS (IDS/uay, unmittigateu/	2,120.33	1,010.33	9,013.30	27.30	5,190.12			

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File Name:	C:\Progra	am Files\U	JRBEMIS 200	02 Version					
8.7\Projects2k2\placervineyardb	olueprint.	<u>urb</u>							
Project Name: Placer Vineyards Blueprint									
Project Location:	Lower Sa	cramento V	Valley Air	<u>Basin</u>					
On-Road Motor Vehicle Emissions	On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2								
SUMMARY	REPORT								
(Pounds/Day	<u>/ - Winter</u>	<u>)</u>							
AREA SOURCE EMISSION ESTIMATES									
	ROG	NOx	CO	S02	PM10				
TOTALS (lbs/day, unmitigated) 1	4,047.62	701.24	22,596.48	53.34	3,347.14				
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES								
	ROG	NOx	CO	S02	PM10				
TOTALS (lbs/day,unmitigated)	811.22	1,092.64	8,576.22	18.16	3,193.42				
SUM OF AREA AND OPERATIONAL EMI	SSION EST	IMATES							
	ROG	NOx	CO	SO2	PM10				
TOTALS (lbs/day, unmitigated) 1	4,858.84	1,793.88	31,172.71	71.50	6,540.56				

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# URBEMIS 2002 For Windows 8.7.0

File Name:	C:\Program Files\URBEMIS 2002 Version						
8.7\Projects2k2\placervineyardblueprint.urb							
Project Name:	<u>Placer Vineyards Blueprint</u>						
Project Location:	Lower Sacramento Valley Air Basin						
On-Road Motor Vehicle Emissions	Based on EMFAC2002 version 2.2						

# DETAIL REPORT (Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMAT	<u>ES (Winter</u>	Pounds per	Day, Unn	<u>nitigated)</u>	
Source	ROG	NOx	CC	) SO2	PM10
Natural Gas	21.96	287.59	144.62	2 0	0.54
Hearth	12,277.65	413.64	22,451.86	53.34	3,346.60
Landscaping - No winter emi	<u>ssions</u>				
Consumer Prdcts	1,058.26		-		
Architectural Coatings	689.75		-		
TOTALS(lbs/day,unmitigated)	14,047.62	701.24	22,596.48	53.34	3,347.14

## UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	S02	PM10
Single family housing	343.58	485.35	3,776.07	8.21	1,441.48
Condo/townhouse general	144.12	203.58	1,583.90	3.44	604.64
Retirement community	13.67	19.30	150.19	0.33	57.33
School	35.16	44.46	352.00	0.72	127.31
<u>Place of worship</u>	20.15	25.24	201.17	0.40	71.35
Park	1.34	1.74	13.72	0.03	4.99
<u>Retail</u>	149.71	176.25	1,432.37	2.77	488.22
Office	86.92	117.96	912.73	1.97	346.56
<u>Public/Quasi Public</u>	16.59	18.75	154.07	0.29	51.55

TOTAL EMISSIONS (lbs/day) 811.22 1,092.64 8,576.22 18.16 3,193.42

Includes correction for passby trips. Includes the following double counting adjustment for internal trips: Residential trips: 0.00 % reduction. Nonresidential trips: 0.00 % <u>reduction.</u>

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

					No.	<u>Total</u>
Unit Type	Acreage	Trip	Rate		Units	Trips
Single family housing	4,268.33	9.00	<u>trips/dwelling</u>	unit	12,805.00115	,245.00
Condo/townhouse general	464.81	6.50	trips/dwelling	unit	7,437.0048,	340.50
Retirement community	277.80	3.30	trips/dwelling	unit	1,389.00 4,	<u>583.70</u>
School		1.00	trips/students		14,089.0014,	089.00
Place of worship		9.00	trips/1000 sq.	ft.	984.50 8,	860.50
Park		2.20	trips/acres		259.50	570.90
Retail		35.00	trips/1000 sq.	ft.	1,949.3068,	225.50
Office		17.70	trips/1000 sq.	ft.	1,762.4031,	194.48
Public/Quasi Public		25.00	trips/1000 sq.	ft.	295.20 7,	380.00

	Sum	of To	otal	Trips	298,489.58
Total	Vehicle	Mile	s Tr	aveled	2,108,092.92

#### Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel			
Light Auto	53.50	0.00	100.00	0.00			
Light Truck < 3,750 lk	os 15.70	0.00	99.40	0.60			
Light Truck 3,751- 5,75	50 16.50	0.00	100.00	0.00			
Med Truck 5,751- 8,50	0 7.50	0.00	98.70	1.30			
Lite-Heavy 8,501-10,00	0 1.00	0.00	80.00	20.00			
Lite-Heavy 10,001-14,00	0.30	0.00	66.70	33.30			
Med-Heavy 14,001-33,00	0.90	0.00	22.20	77.80			
Heavy-Heavy 33,001-60,00	0.80	0.00	0.00	100.00			
Line Haul > 60,000 11	os 0.00	0.00	0.00	100.00			
Urban Bus	0.20	0.00	50.00	50.00			
Motorcycle	1.50	40.00	60.00	0.00			
School Bus	0.10	0.00	0.00	100.00			
Motor Home	2.00	0.00	90.00	10.00			
Travel Conditions							

Residential	Commercial

	Home-	Home-	Home-			
	Work	Shop	Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	15.7	6.2	7.5	12.6	7.3	7.3
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
<u>% of Trips - Residential</u>	27.3	21.2	51.5			

<u>% of Trips - Commercial (by land use)</u>

School	20.0	10.0	70.0
Place of worship	3.0	1.5	95.5
Park	5.0	2.5	92.5
Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5

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Public/Quasi Public

10.0 5.0 85.0

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Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/4268.33 to 9.0/4268.33 The Trip Rate and/or Acreage values for Condominium/townhouse general have changed from the defaults 6.9/464.81 to 6.5/464.81 The Trip Rate and/or Acreage values for Retirement community have changed from the defaults 3.71/277.8 to 3.3/277.8

Changes made to the default values for Area

Changes made to the default values for Operations

The pass by trips option switch changed from off to on. The double counting option switch changed from off to on. The operational emission year changed from 2005 to 2025. The home based work selection item changed from 8 to 7. The home based shopping selection item changed from 8 to 7. The home based shopping urban trip length changed from 3.8 to 6.16. The home based other selection item changed from 8 to 7. The home based other urban trip length changed from 4.6 to 7.45. The commercial based commute selection item changed from 8 to 7. The commercial based non-work selection item changed from 8 to 7. The commercial based non-work urban trip length changed from 4.5 to 7.29. The commercial based customer selection item changed from 8 to 7. The commercial based non-work urban trip length changed from 4.5 to 7.29.

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# URBEMIS 2002 For Windows 8.7.0

File Name:C:\Program Files\URBEMIS 2002 Version8.7\Projects2k2\placervineyardblueprint.urbProject Name:Placer Vineyards BlueprintProject Location:Lower Sacramento Valley Air BasinOn-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

<u>DETAIL REPORT</u> (Pounds/Day - Summer)

## AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	S02	PM10
Natural Gas	21.96	287.59	144.62	0	0.54
Hearth - No summer emissions	5				
Landscaping	82.61	2.87	541.36	6.39	2.15
Consumer Prdcts	1,058.26	-	-	-	-
Architectural Coatings	689.75	-	-	-	-
TOTALS (lbs/day, unmitigated)	1,852.58	290.47	685.98	6.39	2.70

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## UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	S02	PM10
Single family housing	344.23	322.53	3,743.30	9.48	1,441.48
Condo/townhouse general	155.02	135.29	1,570.16	3.98	604.64
Retirement community	18.22	12.83	148.88	0.38	57.33
School	101.58	29.72	334.25	0.83	127.31
<u>Place of worship</u>	21.90	16.92	185.62	0.47	71.35
Park	2.46	1.17	12.84	0.03	4.99
<u>Retail</u>	134.53	118.47	1,295.86	3.20	488.22
Office	80.85	78.53	896.80	2.27	346.56
<u>Public/Quasi Public</u>	15.18	12.61	139.81	0.34	51.55

TOTAL EMISSIONS (lbs/day) 873.97 728.06 8,327.52 20.97 3,193.42

Includes correction for passby trips. Includes the following double counting adjustment for internal trips: Residential trips: 0.00 % reduction. Nonresidential trips: 0.00 % <u>reduction.</u>

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

					No.	<u>Total</u>
<u>Unit Type</u>	Acreage	Trip	Rate		Units	Trips
Single family housing	4,268.33	9.00	<u>trips/dwelling</u>	unit	12,805.00115	,245.00
Condo/townhouse general	464.81	6.50	trips/dwelling	unit	7,437.0048,	340.50
Retirement community	277.80	3.30	trips/dwelling	unit	1,389.00 4,	583.70
School		1.00	trips/students		14,089.0014,	089.00
<u>Place of worship</u>		9.00	trips/1000 sq.	ft.	984.50 8,	860.50
Park		2.20	trips/acres		259.50	570.90
Retail		35.00	trips/1000 sq.	ft.	1,949.3068,	225.50
Office		17.70	trips/1000 sq.	ft.	1,762.4031,	194.48
Public/Quasi Public		25.00	trips/1000 sq.	ft.	295.20 7,	380.00

	Sum	of 1	<u>'otal</u>	Trips	298	,489.58
Total	Vehicle	Mile	es Tr	aveled	2,108	,092.92
					-	-

## Vehicle Assumptions:

<u>Fleet Mix:</u>

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.50	0.00	100.00	0.00
Light Truck < 3,750 1	bs 15.70	0.00	99.40	0.60
Light Truck 3,751- 5,7	50 16.50	0.00	100.00	0.00
Med Truck 5,751-8,5	00 7.50	0.00	98.70	1.30
Lite-Heavy 8,501-10,00	00 1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,0	00 0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,0	00 0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,0	00 0.80	0.00	0.00	100.00
Line Haul > 60,000 11	bs 0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	40.00	60.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.00	0.00	90.00	10.00

Travel Conditions				
	Residential			Commercial
	Home-	Home-	Home-	

	Work	Shop	Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	15.7	6.2	7.5	12.6	7.3	7.3
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
<u>% of Trips - Residential</u>	27.3	21.2	51.5			

<u>% of Trips - Commercial (by land use)</u>

School	20.0	10.0	70.0
Place of worship	3.0	1.5	95.5
Park	5.0	2.5	92.5
Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5

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Public/Quasi Public

10.0 5.0 85.0

<u>Page: 10</u> 01/23/2006 4:55 PM

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/4268.33 to 9.0/4268.33 The Trip Rate and/or Acreage values for Condominium/townhouse general have changed from the defaults 6.9/464.81 to 6.5/464.81 The Trip Rate and/or Acreage values for Retirement community have changed from the defaults 3.71/277.8 to 3.3/277.8

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