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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - UR1-5.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
TOTALS (lbs/day, unmitigated)	585.15	189.72	474.83	0.02	1.40	1.39

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	229.51	203.44	2,418.81	8.08	1,296.51	251.84

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>
TOTALS (lbs/day, unmitigated)	814.66	393.16	2,893.64	8.10	1,297.91	253.23

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	14.31	185.26	78.83	0.00	0.35	0.35
Hearth - No Summer Emissions						
Landscape	71.57	4.46	396.00	0.02	1.05	1.04
Consumer Products	467.22					
Architectural Coatings	32.05					
TOTALS (lbs/day, unmitigated)	585.15	189.72	474.83	0.02	1.40	1.39

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	229.51	203.44	2,418.81	8.08	1,296.51	251.84
TOTALS (lbs/day, unmitigated)	229.51	203.44	2,418.81	8.08	1,296.51	251.84

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 Temperature (F): 80 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	2,957.00	9.57	dwelling units	8,871.00	84,895.47	750,900.53
					84,895.47	750,900.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - UR1-5.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
TOTALS (lbs/day, unmitigated)	517.89	258.84	110.14	0.47	6.30	6.24

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	248.25	243.82	2,271.33	6.76	1,296.51	251.84

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>
TOTALS (lbs/day, unmitigated)	766.14	502.66	2,381.47	7.23	1,302.81	258.08

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	14.31	185.26	78.83	0.00	0.35	0.35
Hearth	4.31	73.58	31.31	0.47	5.95	5.89
Landscaping - No Winter Emissions						
Consumer Products	467.22					
Architectural Coatings	32.05					
TOTALS (lbs/day, unmitigated)	517.89	258.84	110.14	0.47	6.30	6.24

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	248.25	243.82	2,271.33	6.76	1,296.51	251.84
TOTALS (lbs/day, unmitigated)	248.25	243.82	2,271.33	6.76	1,296.51	251.84

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 Temperature (F): 60 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	2,957.00	9.57	dwelling units	8,871.00	84,895.47	750,900.53
					84,895.47	750,900.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - UR1-5.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	43,324.41

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	140,950.78

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	184,275.19

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	43,161.41
Hearth	46.96
Landscape	116.04
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	43,324.41

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	CO2
Single family housing	140,950.78
TOTALS (tons/year, unmitigated)	140,950.78

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 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	2,957.00	9.57	dwelling units	8,871.00	84,895.47	750,900.53
					84,895.47	750,900.53

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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Combined Summer Emissions Reports (Pounds/Day)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - Downgrade.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
TOTALS (lbs/day, unmitigated)	349.74	113.40	283.80	0.01	0.84	0.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	137.18	121.59	1,445.67	4.83	774.89	150.52

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>
TOTALS (lbs/day, unmitigated)	486.92	234.99	1,729.47	4.84	775.73	151.35

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	8.55	110.73	47.12	0.00	0.21	0.21
Hearth - No Summer Emissions						
Landscape	42.78	2.67	236.68	0.01	0.63	0.62
Consumer Products	279.25					
Architectural Coatings	19.16					
TOTALS (lbs/day, unmitigated)	349.74	113.40	283.80	0.01	0.84	0.83

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	137.18	121.59	1,445.67	4.83	774.89	150.52
TOTALS (lbs/day, unmitigated)	137.18	121.59	1,445.67	4.83	774.89	150.52

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 Temperature (F): 80 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	1,767.33	9.57	dwelling units	5,302.00	50,740.14	448,796.59
					50,740.14	448,796.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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Combined Winter Emissions Reports (Pounds/Day)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - Downgrade.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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>
TOTALS (lbs/day, unmitigated)	309.53	154.71	65.83	0.28	3.77	3.73

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
TOTALS (lbs/day, unmitigated)	148.37	145.73	1,357.52	4.04	774.89	150.52

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>
TOTALS (lbs/day, unmitigated)	457.90	300.44	1,423.35	4.32	778.66	154.25

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>
Natural Gas	8.55	110.73	47.12	0.00	0.21	0.21
Hearth	2.57	43.98	18.71	0.28	3.56	3.52
Landscaping - No Winter Emissions						
Consumer Products	279.25					
Architectural Coatings	19.16					
TOTALS (lbs/day, unmitigated)	309.53	154.71	65.83	0.28	3.77	3.73

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	148.37	145.73	1,357.52	4.04	774.89	150.52
TOTALS (lbs/day, unmitigated)	148.37	145.73	1,357.52	4.04	774.89	150.52

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 Temperature (F): 60 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	1,767.33	9.57	dwelling units	5,302.00	50,740.14	448,796.59
					50,740.14	448,796.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: Z:\Alan Sako\112.23 OVOV\Alternatives\OVOV SC PA Alt 3 - Downgrade.urb924

Project Name: OVOV, City of Santa Clarita Planning Area, Alternative 3

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	25,894.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	84,243.16

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	110,137.21

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	25,796.62
Hearth	28.07
Landscape	69.36
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	25,894.05

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

The number of persons per household for consumer product use changed from 3 persons to 3.08 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	CO2
Single family housing	84,243.16
TOTALS (tons/year, unmitigated)	84,243.16

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2035 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	1,767.33	9.57	dwelling units	5,302.00	50,740.14	448,796.59
					50,740.14	448,796.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.0	0.0	100.0	0.0
Light Truck < 3750 lbs	7.4	0.0	100.0	0.0
Light Truck 3751-5750 lbs	24.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.9	0.0	78.9	21.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	66.7	33.3
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.5	32.0	68.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential				Commercial	
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

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**Table ALT3-GHG-1
Operational Motor Vehicle GHG Emissions**

Land Use	Equipment Type	Annual CO₂ Emissions¹ (Tons CO₂/yr)	CO₂ to CO₂e Ratio²	Annual CO₂e Emissions (MT CO₂E/yr)
Proposed General Plan	Motor Vehicles	140,950.78	0.950	134,598.35
Alternative 3	Motor Vehicles	84,243.16	0.950	80,446.45
Net Total		(56,707.62)		(54,151.90)

Sources:

1. Estimated CO₂ emission from URBEMIS2007.

2. US Environmental Protection Agency, Office of Transportation and Air Quality, *Emission Facts - Greenhouse Gas Emissions from a Typical Passenger Vehicle* EPA420-F-05-004, (2005) 4. Passenger vehicle CO₂ emissions are assumed to be 95% of GHG emissions on a CO₂ equivalent basis.

Where:

CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
MT	Metric ton
yr	Year

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Table ALT3-GHG-2
Area Source GHG Emissions

Land Use	CO ₂ Emission Factor ¹ GWP = 1 (kg/MMBtu)	CH ₄ Emission Factor ² GWP = 21 (kg/MMBtu)	N ₂ O Emission Factor ² GWP = 310 (kg/MMBtu)	CO ₂ to CO ₂ e Ratio Emissions ³ (Tons CO ₂ /yr)	Annual CO ₂ e Emissions (MT CO ₂ e/yr)
Proposed General Plan					
Natural Gas	56.06	0.0059	0.0001	43,161.41	39,263.57
Landscape Maintenance	70.88	0.0110	0.0006	116.04	105.89
Hearths (Natural Gas)	56.06	0.0059	0.0001	46.96	42.72
Subtotal				43,324.41	39,412.17
Alternative 3					
Natural Gas	56.06	0.0059	0.0001	25,796.62	23,466.97
Landscape Maintenance	70.88	0.0110	0.0006	69.36	63.29
Hearths (Natural Gas)	56.06	0.0059	0.0001	28.07	25.54
Subtotal				25,894.05	23,555.79
Net Total				(17,430.36)	(15,856.38)

Sources:

1. URBEMIS2007 uses a CO₂ emission factor of 120,000 pounds per million cubic feet. This was converted to kg/MMBtu.
2. California Climate Action Registry, *General Reporting Protocol: Reporting Entity-Wide Greenhouse Gas Emissions Version 3.1*, (2009) 103.
3. Estimated CO₂ emissions from URBEMIS2007. URBEMIS2007 assumes 4,011.5 cubic feet/unit/month of natural gas for multi-family units.

Where:

CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
GWP	Global warming potential
kg	Kilogram
MMBtu	Million British thermal units
MT	Metric ton
N ₂ O	Nitrous oxide
yr	Year