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Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Unmitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

AREA SOURCE EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

 Source
 CO2

 Natural Gas
 58,264.85

 Hearth - No Summer Emissions
 34.88

 Landscape
 34.88

 Consumer Products

 Architectural Coatings

 TOTALS (lbs/day, unmitigated)
 58,299.73

Area Source Changes to Defaults

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 75%

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Area Source Unmitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

AREA SOURCE EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

 Source
 CO2

 Natural Gas
 58,264.85

 Hearth
 22,460.29

 Landscaping - No Winter Emissions

 Consumer Products

 Architectural Coatings

TOTALS (lbs/day, unmitigated) 80,725.14

Area Source Changes to Defaults

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 75%

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Detail Report for Annual Area Source Unmitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

AREA SOURCE EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

 Source
 CO2

 Natural Gas
 10,633.33

 Hearth
 11.23

 Landscape
 6.36

 Consumer Products

 Architectural Coatings

 TOTALS (tons/year,
 10,650.92

Area Source Changes to Defaults

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 75%

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

 Source
 CO2

 Single family housing
 34,285.29

 Condo/townhouse general
 246,312.52

 Condo/townhouse high rise
 18,056.20

 City park
 10,308.19

 Strip mall
 156,457.77

 TOTALS (lbs/day, mitigated)
 465,419.97

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	680.00	1,081.20	9,820.00

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Urban Trip Length (miles)

Rural Trip Length (miles)

Land Use Type

Summary of Land Use

Acreage Trip Rate Unit Type No. Units

Total Trips

Total VMT

Strip mall			42.94	1000 sq ft	387.00	16,617.78	149,111.33
						45,625.53	441,067.68
		Vehicle	Fleet N	<u>Mix</u>			
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	Condition	ons			
		Residential				Commercial	
	Home-Work	Home-Sho	p l	Home-Other	Commute	Non-Work	Customer

7.0

12.1

9.5

14.9

13.3

15.4

7.4

9.6

8.9

12.6

12.7

17.6

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Travel Conditions

	Residential		Commercial		
Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
30.0	30.0	30.0	30.0	30.0	30.0
32.9	18.0	49.1			
			5.0	25	92.5
			2.0	1.0	97.0
	Home-Work 30.0	Home-Work Home-Shop 30.0 30.0	Home-Work Home-Shop Home-Other 30.0 30.0 30.0	Home-Work Home-Shop Home-Other Commute 30.0 30.0 30.0 30.0 32.9 18.0 49.1	Home-Work Home-Shop Home-Other Commute Non-Work 30.0 30.0 30.0 30.0 30.0 30.0 32.9 18.0 49.1

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Operational Mitigated Emissions (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

 ${\tt OPERATIONAL\ EMISSION\ ESTIMATES\ (Summer\ Pounds\ Per\ Day,\ Mitigated)}$

 Source
 CO2

 Single family housing
 31,032.01

 Condo/townhouse general
 222,940.31

 Condo/townhouse high rise
 16,342.88

 City park
 9,321.83

 Strip mall
 141,480.47

 TOTALS (lbs/day, mitigated)
 421,117.50

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	680.00	1,081.20	9,820.00

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Urban Trip Length (miles)

Rural Trip Length (miles)

Land Use Type

Summary	y of	Land	Use

Acreage Trip Rate Unit Type No. Units

Total Trips

7.4

9.6

8.9

12.6

Total VMT

**				,,		•	
Strip mall		4	12.94	1000 sq ft	387.00	16,617.78	149,111.33
						45,625.53	441,067.68
		Vehicle	Fleet M	<u>lix</u>			
Vehicle Type	1	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	Conditio	ons			
		Residential				Commercial	
	Home-Work	Home-Sho	р Н	Home-Other	Commute	Non-Work	Customer

12.7

17.6

7.0

12.1

9.5 13.3

15.4

14.9

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Travel Conditions

		Residential		Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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)						
City park				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Mitigated Emissions (Tons/Year)

File Name: R:\General Air Quality Info\Projects\0D2136700 - Santa Ana Renaissance SP EIR\Modeling\Urbemis\Santa Ana Renaissance Specific

Plane EIR - Net Growth.urb924

Project Name: Santa Ana Renaissance Specific Plan EIR

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

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

 Source
 CO2

 Single family housing
 6,059.16

 Condo/townhouse general
 43,530.23

 Condo/townhouse high rise
 3,191.03

 City park
 1,821.24

 Strip mall
 27,642.42

 TOTALS (tons/year, mitigated)
 82,244.08

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 0%

Inputs Selected:

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

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	111.67	9.57	dwelling units	335.00	3,205.95	32,389.07
Condo/townhouse general	208.62	6.90	dwelling units	3,338.00	23,032.20	232,689.71
Condo/townhouse high rise	6.28	4.20	dwelling units	402.00	1,688.40	17,057.57
City park		1.59	acres	680.00	1,081.20	9,820.00

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Rural Trip Length (miles)

Land Use Type

Summary	of Land Uses	

Acreage Trip Rate Unit Type No. Units

Total Trips

Total VMT

12.6

9.6

Strip mall		42.94	1000 sq ft	387.00	16,617.78	149,111.33			
					45,625.53	441,067.68			
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 Condi	itions .						
		Residential			Commercial				
	Home-Work	Home-Shop	Home-Other	Commute	Non-Worl	Customer			
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9			

12.1

14.9

15.4

17.6

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Travel Conditions

		Residential		Commercial			
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer	
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)							
City park				5.0	2.5	92.5	
Strip mall				2.0	1.0	97.0	

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

 ${\sf AREA\ SOURCE\ EMISSION\ ESTIMATES\ (Summer\ Pounds\ Per\ Day,\ Mitigated)}$

Source CO2

Natural Gas 46,611.88

Hearth - No Summer Emissions

Landscape 27.90

Consumer Products

Architectural Coatings

TOTALS (lbs/day, mitigated) 46,639.78

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00
Percent of Residential Landscape Equipment that are Electrically Powered and have Electrical Outlets at the the Front and Rear of Residences	20.00

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Percent of Commercial and Industrial Landscape Equipment that are Electrically Powered and have Electrical Outlets Available	20.00
For Residential Interior Use Low VOC Coating	10.00
For Residential Exterior Use Low VOC Coating	10.00
For Nonresidential Interior Use Low VOC Coating	10.00
For Nonresidential Exterior Use Low VOC Coating	10.00

Area Source Changes to Defaults

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 75%

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Area Source Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

AREA SOURCE EMISSION ESTIMATES (Winter Pounds Per Day, Mitigated)

 Source
 CO2

 Natural Gas
 46,611.88

 Hearth
 22,460.29

Landscaping - No Winter Emissions

Consumer Products

Architectural Coatings

TOTALS (lbs/day, Mitigated) 69,072.17

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00
For Residential Interior Use Low VOC Coating	10.00
For Residential Exterior Use Low VOC Coating	10.00

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For Nonresidential Interior Use Low VOC Coating 10.00
For Nonresidential Exterior Use Low VOC Coating 10.00

Area Source Changes to Defaults

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 75%

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Area Source Mitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

AREA SOURCE EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

 Source
 CO2

 Natural Gas
 8,506.67

 Hearth
 11.23

 Landscape
 5.09

 Consumer Products

 Architectural Coatings

 TOTALS (tons/year, mitigated)
 8,522.99

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00
Industrial Increase Energy Efficiency Beyond Title 24	20.00
Percent of Residential Landscape Equipment that are Electrically Powered and have	20.00

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Percent of Commercial and Industrial Landscape Equipment that are Electrically
Powered and have Electrical Outlets Available
For Residential Interior Use Low VOC Coating
10.00
For Residential Exterior Use Low VOC Coating
10.00
For Nonresidential Interior Use Low VOC Coating
10.00
For Nonresidential Exterior Use Low VOC Coating
10.00
To Nonresidential Exterior Use Low VOC Coating
10.00

Area Source Changes to Defaults

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 75%

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

 Source
 CO2

 Single family housing
 32,742.45

 Condo/townhouse general
 230,939.41

 Condo/townhouse high rise
 16,204.80

 City park
 9,844.32

 Strip mall
 149,417.17

 TOTALS (lbs/day, mitigated)
 439,148.15

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 4.5% (calculated as a % of 9.57 trips/day)

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

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Nonresidential Mitigation Measures

Percent Reduction in Trips is 0%

Inputs Selected:

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

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 4.5%

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Non-Residential Other Transportation Demand Measures Mitigation

Percent Reduction in Trips is 0%

Note that the above percent is applied ONLY to worker trips.

Inputs Selected:

The 'Secure Bike Parking' measure was selected

The 'Preferential Carpool/Vanpool Parking' measure was selected

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Summary of Land Uses									
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT			
Single family housing	111.67	9.14	dwelling units	335.00	3,061.68	30,931.56			
Condo/townhouse general	208.62	6.47	dwelling units	3,338.00	21,594.69	218,166.84			
Condo/townhouse high rise	6.28	3.77	dwelling units	402.00	1,515.28	15,308.56			
City park		1.52	acres	680.00	1,032.55	9,378.10			
Strip mall		41.01	1000 sq ft	387.00	15,869.98	142,401.32			
					43,074.18	416,186.38			

		43,074.10	410,100.30					
Vehicle Fleet Mix								
Percent Type	Non-Catalyst	Catalyst	Diesel					
48.0	0.0	100.0	0.0					
7.4	0.0	100.0	0.0					
24.4	0.0	100.0	0.0					
11.8	0.0	100.0	0.0					
1.9	0.0	78.9	21.1					
0.6	0.0	66.7	33.3					
1.0	0.0	20.0	80.0					
0.7	0.0	0.0	100.0					
0.1	0.0	0.0	100.0					
0.1	0.0	0.0	100.0					
2.5	32.0	68.0	0.0					
0.1	0.0	0.0	100.0					
	Percent Type 48.0 7.4 24.4 11.8 1.9 0.6 1.0 0.7 0.1 0.1 2.5	Percent Type Non-Catalyst 48.0 0.0 7.4 0.0 24.4 0.0 11.8 0.0 1.9 0.0 0.6 0.0 1.0 0.0 0.7 0.0 0.1 0.0 0.1 0.0 0.1 0.0 2.5 32.0	Vehicle Fleet Mix Percent Type Non-Catalyst Catalyst 48.0 0.0 100.0 7.4 0.0 100.0 24.4 0.0 100.0 11.8 0.0 100.0 1.9 0.0 78.9 0.6 0.0 66.7 1.0 0.0 20.0 0.7 0.0 0.0 0.1 0.0 0.0 0.1 0.0 0.0 2.5 32.0 68.0					

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<u>Vehicle Fleet Mix</u>								
Vehicle Type	F	Percent Type	Non-Catalyst	(Catalyst	Diesel		
Motor Home		1.4	0.0		92.9	7.1		
		Travel Con	<u>iditions</u>					
		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)								
City park				5.0	2.5	92.5		
Strip mall				2.0	1.0	97.0		
Operational Changes to Defaults								

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Operational Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

 Source
 CO2

 Single family housing
 29,635.57

 Condo/townhouse general
 209,025.92

 Condo/townhouse high rise
 14,667.15

 City park
 8,902.35

 Strip mall
 135,113.85

 TOTALS (lbs/day, mitigated)
 397,344.84

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 4.5% (calculated as a % of 9.57 trips/day)

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100% $\,$

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

.....

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Nonresidential Mitigation Measures

Percent Reduction in Trips is 0%

Inputs Selected:

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

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

.....

Percent Reduction in Trips is 4.5%

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Non-Residential Other Transportation Demand Measures Mitigation

Percent Reduction in Trips is 0%

Note that the above percent is applied ONLY to worker trips.

Inputs Selected:

The 'Secure Bike Parking' measure was selected

The 'Preferential Carpool/Vanpool Parking' measure was selected

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Summary of Land Uses							
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT	
Single family housing	111.67	9.14	dwelling units	335.00	3,061.68	30,931.56	
Condo/townhouse general	208.62	6.47	dwelling units	3,338.00	21,594.69	218,166.84	
Condo/townhouse high rise	6.28	3.77	dwelling units	402.00	1,515.28	15,308.56	
City park		1.52	acres	680.00	1,032.55	9,378.10	
Strip mall		41.01	1000 sq ft	387.00	15,869.98	142,401.32	
					43,074.18	416,186.38	
	<u> </u>	Vehicle Fleet	Mix				
Vehicle Type	Percent	Туре	Non-Catal	yst	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	33	2.0	68.0	0.0	
School Bus		0.1	(0.0	0.0	100.0	

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		eet	

Vehicle Type	P	Percent Type	Non-Catalyst	С	Catalyst			
Motor Home		1.4	0.0		92.9	7.1		
		Travel Con						
		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)								
City park				5.0	2.5	92.5		
Strip mall				2.0	1.0	97.0		
Operational Changes to Defaults								

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Mitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\23856\Desktop\Santa Ana Potential Net Development\Santa Ana Potential net Development

Mitigated.urb924

Project Name: Net Potential Growth Mitigated 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

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Mitigated)

 Source
 CO2

 Single family housing
 5,786.50

 Condo/townhouse general
 40,813.37

 Condo/townhouse high rise
 2,863.83

 City park
 1,739.28

 Strip mall
 26,398.51

 TOTALS (tons/year, mitigated)
 77,601.49

Does not include 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

Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

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Operational Mitigation Options Selected

Residential Mitigation Measures

•

Percent Reduction in Trips is 0% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

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

Residential Pedestrian/Bicycle Friendliness Mitigation

.....

Percent Reduction in Trips is 4.5% (calculated as a % of 9.57 trips/day)

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

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Nonresidential Mitigation Measures

Percent Reduction in Trips is 0%

Inputs Selected:

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

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 4.5%

Inputs Selected:

The Number of Intersections per Square Mile is 0

The Percent of Streets with Sidewalks on One Side is 100%

The Percent of Streets with Sidewalks on Both Sides is 100%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 0%

Non-Residential Other Transportation Demand Measures Mitigation

Percent Reduction in Trips is 0%

Note that the above percent is applied ONLY to worker trips.

Inputs Selected:

The 'Secure Bike Parking' measure was selected

The 'Preferential Carpool/Vanpool Parking' measure was selected

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Summary of Land Uses								
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT		
Single family housing	111.67	9.14	dwelling units	335.00	3,061.68	30,931.56		
Condo/townhouse general	208.62	6.47	dwelling units	3,338.00	21,594.69	218,166.84		
Condo/townhouse high rise	6.28	3.77	dwelling units	402.00	1,515.28	15,308.56		
City park		1.52	acres	680.00	1,032.55	9,378.10		
Strip mall		41.01	1000 sq ft	387.00	15,869.98	142,401.32		
					43,074.18	416,186.38		
Vehicle Fleet Mix								

	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

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	Vehicle Fleet Mix														
Vehicle Type	P	Percent Type	Non-Catalyst	C	Catalyst	Diesel									
Motor Home		1.4	0.0		92.9	7.1									
		Travel Con	<u>iditions</u>												
		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)															
City park				5.0	2.5	92.5									
Strip mall				2.0	1.0	97.0									

Operational Changes to Defaults

Information input

Construction Scenario(*1a,b)	Summer (lbs/day)	Winter (lbs/day)	Tons/year
Unmitigated	7,775.82	7,775.82	677.45
Mitigated	7,775.82	7,775.82	677.45

		Vehicle			Natural Gas		Total Vehicle + Natural Gas
Operational(*2a,b) / Area							
Scenario(*3a,b)	Summer (Ibs/day)	Winter (lbs/day)	tons/Year	Summer	Winter	Year	
Unmitigated	465,419.97	421,117.50	82,244.08	58,264.85	58,264.85	10,633.33	92,877.41
Mitigated	439,148.15	397,344.84	77,601.49	46,611.88	46,611.88	8,506.67	86,108.16

		Landscaping			Hearth					
Area Scenario(*3b,c)	Summer	Winter	Year	Summer	Winter	Year				
Unmitigated	34.88	0.00	6.36	0.00	22,460.29	11.23				
Mitigated	27.90	0.00	5.09	0.00	22,460.29	11.23				

		Unmitigated			Mitigated						
Land Use Type (units)	Sum		Wir	nter							
Land OSC Type (units)	Total Trips	Total VMT	Total Trips	Total VMT	Total Trips	Total VMT	Total Trips	Total VMT			
Single Family Housing	3205.95	32389.07	3205.95	32389.07	3061.68	30931.56	3061.68	30931.56			
Apartments Low Rise	0	0	0	0	0	0	0	0			
Apartments Mid Rise	0	0	0	0	0	0	0	0			
Apartments High Rise	0	0	0	0	0	0	0	0			
Condo/Townhouse General	23032.2	232689.71	23032.2	232689.71	21594.69	218166.84	21594.69	218166.84			
Condo/Townhouse High Rise	1688.4	17057.57	1688.4	17057.57	1515.28	15308.56	1515.28	15308.56			
Mobile Home Park	0	0	0	0	0	0	0	0			
Retirement Community	0	0	0	0	0	0	0	0			
Congregate Care Facility	0	0	0	0	0	0	0	0			
Day-Care Center	0	0	0	0	0	0	0	0			
Elementary School	0	0	0	0	0	0	0	0			
Junior High School	0	0	0	0	0	0	0	0			
High School	0	0	0	0	0	0	0	0			
Junior College (2 yr)	0	0	0	0	0	0	0	0			
College/University (4 yr)	0	0	0	0	0	0	0	0			
	0	0	0	0		0	0	0			
Library	0	0			0		0				
Place of Worship			0	0	0	0	·	0			
City Park	1081.2	9820	1081.2	9820	1032.55	9378.1	1032.55	9378.1			
Racquet Club	0	0	0	0	0	0	0	0			
Racquetball/Health	0	0	0	0	0	0	0	0			
Quality Restaurant	0	0	0	0	0	0	0	0			
High turn-over (sit down) Rest.	0	0	0	0	0	0	0	0			
Fast Food Rest. w/ drive-through	0	0	0	0	0	0	0	0			
Fast Food Rest. w/o drive-through	0	0	0	0	0	0	0	0			
Hotel	0	0	0	0	0	0	0	0			
Motel	0	0	0	0	0	0	0	0			
Free-standing discount store	0	0	0	0	0	0	0	0			
Free-standing discount superstore	0	0	0	0	0	0	0	0			
Discount Club	0	0	0	0	0	0	0	0			
Regnl Shop Ctr.	0	0	0	0	0	0	0	0			
Electronic Superstore	0	0	0	0	0	0	0	0			
Home Improvement Superstore	0	0	0	0	0	0	0	0			
Strip Mall	16617.78	149111.33	16617.78	149111.33	15869.98	142401.32	15869.98	142401.32			
Hardware/paint store	0	0	0	0	0	0	0	0			
Supermarket	0	0	0	0	0	0	0	0			
Convenience Market (24-hr)	0	0	0	0	0	0	0	0			
Convenience Market w/ gas pump	0	0	0	0	0	0	0	0			
Gasoline/service station	0	0	0	0	0	0	0	0			
Bank (with drive-through)	0	0	0	0	0	0	0	0			
General Office Building	0	0.00	0	0	0	0	0	0			
Office Park	0	0.00	0	0	0	0	0	0			
Government Office Building	0	0	0	0	0	o o	0	0			
Government (Civic Center)	0	0	0	0	0	0	0	0			
Pharmacy/drugstore w/ drive-through	0	0	0	0	0	Ů Ů	Ö	0			
Pharmacy/drugstore w/o drive-through	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Medical Office Building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Hospital	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Warehouse	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00			
General Light Industry	0	0	0	0	0	0	0	0			
General Heavy Industry	0	0	0	0	0	0	0	0			
Industrial Park	0	0	0	0	0	0	0	0			
Manufacturing	0	0	0	0	0	0	0	0			
Total	45625.53	441067.68	45625.53	441067.68	43074.18	416186.38	43074.18	416186.38			
Total	45625.53	441067.68	40020.00	741007.00	43074.18	416186.38	43074.10	+10100.30			

 45625.53
 441067.68
 43074.18
 416186.38

 Total Trips
 Total VMT
 Total Trips
 Total VMT

Vehicle fleet information from URBEMIS or traffic study

Vehicle Type	Flee	t %	Non-Ca	atalyst	Ca	talyst	Diesel	
Light Auto	48.00	0.48	0.00	0.00	100.00	1.00	0.00	0.00
Light Truck <3,750 lbs	7.40	0.07	0.00	0.00	100.00	1.00	0.00	0.00
Light Truck 3,751-5,750 lbs	24.40	0.24	0.00	0.00	100.00	1.00	0.00	0.00
Med Truck 5,751-8,500 lbs	11.80	0.12	0.00	0.00	100.00	1.00	0.00	0.00
Lite-Heavy Truck 8,501-10,000 lbs	1.90	0.02	0.00	0.00	78.90	0.79	21.10	0.21
Lite-Heavy Truck 10,001-14,000 lbs	0.60	0.01	0.00	0.00	66.70	0.67	33.30	0.33
Med-Heavy Truck 14,001 - 33,000 lbs	1.00	0.01	0.00	0.00	20.00	0.20	80.00	0.80
Heavy-Heavy Truck 33,001-60,000 lbs	0.70	0.01	0.00	0.00	0.00	0.00	100.00	1.00
Other bus	0.10	0.00	0.00	0.00	0.00	0.00	100.00	1.00
Urban bus	0.10	0.00	0.00	0.00	0.00	0.00	100.00	1.00
Motorcycle	2.50	0.03	32.00	0.32	68.00	0.68	0.00	0.00
School Bus	0.10	0.00	0.00	0.00	0.00	0.00	100.00	1.00
Motor Home	1.40	0.01	0.00	0.00	92.90	0.93	7.10	0.07
	100.00	1.00	-					

Reduction % for:
Title 24 20 0.2

Annual Usages

Input	Single Family	Multi Family	Food store	Restaurant	Hospital	Retail	University	High School
Natural gas usage rate from URBEMIS	6,665.00	4,011.50	2.90	2.90	2.90	2.90	4.8	4.8
Kilowatt-hour / unit or sqft / year	5,626.50	5,626.50	40.99	40.20	19.61	14.06	12.36	7.46
square footage	0	0.00	0	0	0	387,000	0	0
units/rooms	335	3,740					0	0

Input	Elementary	Office small	Office large	Hotel/ Motel	Refrigerated Warehouse	Unrefrigerated Warehouse	Misc	Commercial
Natural gas usage rate from URBEMIS	4.8	2.00	2.00	4.80			0	2.9
Kilowatt-hour / unit or sqft / year	7.46	13.10	17.70	12.13	20.02	4.45	0.01	13.63
square footage	0	0	0	0	0	0	680,000	0
units/rooms	0			0			0	

Renaissance Potential Net Development Input data for Green House Gas Emissions Unmitigated Carbon Dioxide

A1. Mobile (Construction Equipment, Motor Vehicles, and Landscape Equipment) and Stationary Sources (Cooling and Heating)
Emissions of carbon dioxide from mobile (construction equipment, motor vehicles, and landscape equipment) and stationary sources (cool heating) are calculated using the following equation:

 $Y_A = (Y_1)+(Y_2)+(Y_3)+(Y_4)$

 Y_a = annual emissions of carbon dioxide from mobile and stationary sources, tonsy; Y_t = annual emissions of carbon dioxide from construction equipment, tonslyr (URBEMIS 2007 9.2.2 output file). Y_t = annual emissions of carbon dioxide from motor vehicles, tonslyr (URBEMIS 2007 9.2.2 output file). Y_t = annual emissions of carbon dioxide from motor vehicles, tonslyr (URBEMIS 2007 9.2.2 output file). Y_t = annual emissions of carbon dioxide from cooling and heating, tonslyr (URBEMIS 2007 9.2.2 output file).

 Y1, tons/yr
 Y2, tons/yr
 Y3, tons/yr
 Y4, tons/yr
 Y4, tons/yr
 Y4, tons/yr

 677.45
 82.244.08
 6.36
 10.633.33
 93,561.22

 0.01
 0.88
 0.00
 0.11

B1. Electricity

Emissions of carbon dioxide from electricity usage are calculated using the following equations of the control of the contro

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

Y_A = annual emissions of carbon doxide from electricity usage, tonsily:
U_A = annual electricity usage, Mi/Myr.
U_A = annual electricity usage, Mi/Myr.
E = emission factor for electricity usage, 804.54 lbs/M/M (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III,
Chapter 6, 2007).
C = conversion factor from lbs to tons, 2,000 lbs/ton.

C = conversion factor from Be to tons, 2,000 Beaton.

| Comparison |

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B2. Potable Water

Emissions of carbon dioxide from potable water treatment and transportation for domestic use are calculated using the following equation:

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

Y_A = annual emissions of carbon dioxide from electricity used for potable water treatment and transportation, tonslyr.
U_A = annual electricity usage for potable water treatment and transportation, MWhlyr.
E = emission factor for electricity usage, 80.45 × lba/M/h (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III, Chapter 6, 2007).
C = conversion factor from lbs to tons, 2,000 lba/ton.

Unit Type	unit type	unit number	V, MG/yr	MWh/MG	UA. MWH/vr	E. lbs/MWh	C, lbs/ton	Y ₄ , tons/yr
SF Residential	household	335.00	85.59	0.01020	0.87	724.12	2.000	0.32
MF Residential	household	3740.00	955.57	0.01020	9.75	724.12	2,000	3.53
Food Store	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Restaurant	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Hospitals	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Retail	sq ft	125000.00	31.07	0.01020	0.32	724.12	2,000	0.11
Commercial	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
College/University	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
High school	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Elementary School	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Office	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Hotel/Motel	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Warehouse	sq ft	0.00	0.00	0.01020	0.00	724.12	2,000	0.00
Miscellaneous	sq ft	680000.00	169.02	0.01020	1.72	724.12	2,000	0.62
							Total, tons/yr	4.58

^{*}V = annual water usage per unit in millions of gallons per year

B3. Solid Waste B3a. Fugitive Emissions

Emissions of carbon dioxide from solid waste disposal treatment are calculated using the following equation: $Y_A = (P_A)^*(E)$

 Y_A = annual emissions of carbon dioxide from solid waste disposal treatment, tonslyr. P_A = annual waste production for disposal treatment, tonslyr. E = emission factor for waste production, 0.0045 tons/ton (Los Angeles County, Engineering Data).

Unit Type	Q, tons/yr/ unit *	Unit Type	Unit number	P _A , tons/yr	E, tons/ton	Y _A , tons/yr
Residential	0.8700	household	4,075	3,545.25	0.0045	15.95
Food Store	0.0000	sq ft	0	0.00	0.0045	0.00
Restaurant	0.0000	sq ft	0	0.00	0.0045	0.00
Hospitals	0.0000	sq ft	0	0.00	0.0045	0.00
Retail	0.0004	sq ft	387,000	154.80	0.0045	0.70
Commercial	0.0004	sq ft	0	0.00	0.0045	0.00
College/University	0.0000	sq ft	0	0.00	0.0045	0.00
High school	0.0000	sq ft	0	0.00	0.0045	0.00
Elementary School	0.0000	sq ft	0	0.00	0.0045	0.00
Office	0.0000	sq ft	0	0.00	0.0045	0.00
Hotel/Motel	0.2800	room	0	0.00	0.0045	0.00
Warehouse	0.0000	sq ft	0	0.00	0.0045	0.00
Miscellaneous	0.0000	sq ft	0	0.00	0.0045	0.00
					Total, tons/vr	16.65

^{*} Q = annual waste production per unit based on daily waste per unit type (City of Los

B3b. Exhaust Emissions (Hauling Trucks)

B3b. Exhaust Emission:	s (Hauling Truck	s)								
Emissions of carbon dioxi	de from solid was	ste transportatio	n are calculated u	sing the followin	g equation:					
			$Y_{\Delta} = (P_{\Delta})^*(d)$)-1*(Ca)-1*(M)*(E)*(C ₁)-1*(C ₂)-1					
Y _a = annual emissions of	carbon diovide to	nm enlid waeta t	ransportation ton	e/ur						
P _A = annual waste produc										
d = solid waste density, 0		California Integr	ated Waste Mana	igement Board).						
Ca = truck load capacity,										
M = average trip mileage,										
E = emission factor for ha			MFAC 2007 outp	ut file).						
C ₁ = conversion factor fro	m gr to lbs, 453.5	i9 gr/lbs.								
C2 = conversion factor fro	m lbs to tons, 2,0	00 lbs/ton.								
Unit Type	P _A , tons/yr	d, tons/cuyd	Ca, cuyd/trip	M, miles/trip *	E, gr/mile **	C ₁ , gr/lbs	C2, Ibs/tons	Y _A , tons/yr		
Residential	3,545.25	0.0365	20	2.30	1,637.871	453.59	2,000	20.17		
Food Store	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Restaurant	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Hospitals	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Retail	154.80	0.0365	20	2.30	1,637.871	453.59	2,000	0.88		
Commercial	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
College/University	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
High school	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Elementary School 0.00 0.0365 20 2.30 1,637.871 453.59 2,000 0										
Office 0.00 0.0365 20 2.30 1,637.871 453.59 2,000 0										
Hotel/Motel	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Warehouse	0.00	0.0365	20	2.30	1,637.871	453.59	2,000	0		
Miscellaneous	0.00	0.0000				100.00	0.000	0		
		0.0365	20	2.30	1,637.871	453.59	2,000			

**M a everage trip mileage based on the average round trip distance from the Landfill with jurisdiction over the site: California integrated Waste Management Board (http://www.ciwmb.ca/
"E e-mission factor for hauling trucks based on the following EMFAC criteria: 2008 calendard year, all heavy-duty trucks, temperature of 43°F,
relative hauling of 74% (average between 65% and 64%, haurup AM and PM). and speed of 45 miles and speed of 45

B3c. Exhaust Emissions (Disposal Equipment)

Emissions of carbon dioxide from solid waste disposal are calculated using the following equation:

 $Y_A = (E)^*(h)^*(n)^*(C)^{-1}$

- Y_A = annual emissions of carbon doxide from solid waste disposal, tonslyr. E = emission factor for disposal equipment, Builtri (SCAQMD Off-Road Mobile Source Emission Factors, 2007). n = 0 per parily politic pare of 42, 2 Partial Vision n = 0 pays per year, 356 dayslyr. n = 0 asys per year, 356 dayslyr.

Vehicle Type	E, lbs/hr *	h, hrs/day **	n, days/yr	C, Ibs/tons	Y _A , tons/yr
Excavator	119.60	2	365	2,000	0.00
Grader	132.70	2	365	2,000	0.00
Off-Highway Tractor	151.50	2	365	2,000	0.00
Off-Highway Truck	260.10	2	365	2,000	0.00
				Total, tons/yr	0.00
* E = emission factor for d ** h = operating hours per waste per day.					

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B4. Wastewater

Emissions of carbon dioxide from waste water treatment are calculated using the following equation:

 $\mathsf{Y}_{\mathsf{A2}} = (\mathsf{Y}_{\mathsf{A1}})^*(\mathsf{R}_{\mathsf{W}})$

- $Y_{\rm A2}$ = annual emissions of carbon dioxide from waste water treatment, tons/yr. $Y_{\rm A1}$ = annual emissions of carbon dioxide from electricity used for potable water treatment and transportation, tons/yr. $R_{\rm W}$ = ratio between potable water usage and waste water production, 0.50 (USEPA, 1992).

| \begin{align*} \frac{\textbf{Y}_{ex} \times \textbf{Y}_{ex} \times

C. Summary Table

		Emissions,
	Source Type	tons/yr
Direct	Mobile and stationary	93561.22
	Total direct, tons/yr	93561.22
	Electricity	10273.82
Indirect	Potable water	4.58
indirect	Solid waste	37.70
	Wastewater	2.29
	Total indirect, tons/yr	10,318.40
	Total, tons/yr	103,879.62
G	lobal warming potential index	1
Glo	bal warming potential, tons/yr	103,879.62

A1. Mobile Source (Construction Equipment)

Emissions of methane from construction equipment are calculated using the following equation:

 $Y_A = (M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$

Y₄ = annual emissions of methane from construction equipment, tonslyr.

M = annual mileage for construction equipment, nilealyr.
E = emission factor for construction equipment, 0.2012 g/mile (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).
C = conversion factor from gr to ibs. 453.59 g/libs.
C = conversion factor from 8 to tors. 2,000 batton.

Unit Type	M*, miles/yr	E, gr/mile	C ₁ , gr/lbs	C2, lbs/tons	Y _A , tons/yr
Non cat heavy-duty truck	416.625.00	0.2012	453.59	2.000	0.09

A2. Mobile Source (Motor Vehicles)

Emissions of methane from motor vehicles are calculated using the following equation:

 $Y_{\Delta} = (M)^{*}(E)^{*}(C_{1})^{-1}^{*}(C_{2})^{-1}$

V_A = annual emissions of methane from motor vehicles, tonslyr.

M = annual mileage for motor vehicles, milestyr (IRBEMIS 2007 8.2.2 output file).

E = emission factor from notive rehicles, gringle (ISBEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).

C₁ = conversion factor from g to lbs, 453.99 grifts.

C₂ = conversion factor from the to tone; 2000 Buston.

Unit Type	M, miles/yr	E, gr/mile	C ₁ , gr/lbs	C2, lbs/tons	Y _A , tons/yr
Non cat passenger car	0.00	0.1931	453.59	2,000	0.00
Cat passenger car	77275057.44	0.1127	453.59	2,000	9.60
Diesel passenger car	0.00	0.0161	453.59	2,000	0.00
Non cat light-duty truck	0.00	0.2253	453.59	2,000	0.00
Cat light-duty truck	70191510.51	0.1448	453.59	2,000	11.20
Diesel light-duty truck	0.00	0.0966	453.59	2,000	0.00
Non cat heavy-duty truck	0.00	0.2012	453.59	2,000	0.00
Cat heavy-duty truck	5473488.91	0.1448	453.59	2,000	0.87
Diesel heavy-duty truck	4024903.56	0.0161	453.59	2,000	0.07
Non cat motorcycles	1287917.62	0.2092	453.59	2,000	0.30
Cat motorcycles	2736824.95	0.2092	453.59	2,000	0.63
		•	•	Total, tons/vr	22,67

A3. Mobile Source (Landscape Equipment)

Emissions of methane from landscape equipment are calculated using the following equation:

 $\mathsf{Y}_{\mathsf{A2}} = (\mathsf{YA}_1)^*(\mathsf{R}_\mathsf{T})$

 $Y_{\rm i,o}$ = annual emissions of methane from landscape equipment, tonsityr. $Y_{\rm i,o}$ = nanual emissions of methane from motor vehicles, tonsityr. $R_{\rm i}$ = nanual emissions of methane from motor vehicles, tonsityr. $R_{\rm i}$ = ratio between cathon monoxide unmitigated emissions from motor vehicles and carbon monoxide unmitigated emissions from landscape equipment, (UREBMS 2007 9.2.2 output file).

Y_{A1}, tons/yr R_T * Y_{A2}, tons/yr 22.67 0.00007 0.00

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A4. Stationary Source (Cooling and Heating)

Emissions of methane from cooling and heating are calculated using the following equation:

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

V_A = annual emissions of methane from cooling and heating, tonslyr.
U_A = annual emissions of methane from cooling and heating, tonslyr.
U_A = annual natural gas usage, MMBTUslyr.
E = emission factor for natural gas usage, 0.0058 kg/MMBTU (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III,
Chapter 8, 2007).
C = conversion factor from kg to tons, 907.18 kg/ton.

Land Use Type	R _A *	Unit	A **	Unit	U _A , MMBTUs/yr	E, kg/MMBTU	C, kg/ton	Y _A , tons/yr
SF Residential	83.97900	MMBTUs/unit/	335.00	household	28,132.97	0.0059	907.18	0.18
MF Residential	50.54490	MMBTUs/unit/	3,740.00	household	189,037.93	0.0059	907.18	1.23
Food Store	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Restaurant	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Hospitals	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Retail	0.03654	MMBTUs/unit/	387,000.00	sq ft	14,140.98	0.0059	907.18	0.09
Commercial	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
College/University	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
High school	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Elementary School	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Office	0.02520	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Hotel/Motel	0.06048	MMBTUs/unit/	0.00	room	0.00	0.0059	907.18	0.00
Warehouse	0.00000	MMBTUs/unit/	0.00	sq ft	0.00	0.0059	907.18	0.00
Miscellaneous	0.00000	MMBTUs/sqft/	680,000.00	sq ft	0.00	0.0059	907.18	0.00
					•		Total tonehir	1.50

Total, tonstyl

**R_A = annual consumption rate (CEQA Handbook, Table A9-12-A). Converted from cubic feetlunklmonth to MMBTUs/Unit/year

**A = unit type number (number of units)

B. Indirect Sources

B1. Electricity

Emissions of methane from electricity usage are calculated using the following equation:

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

V_A = annual emissions of methane from electricity usage, tons/yr.
U_A = annual electricity usage, MMHyr.
E = emission factor for electricity usage, 0.0067 lbs/MWh (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III,
Chapter 6, 2007).
C = conversion factor from lbs to tons, 2.000 lbs/bon.

Land Use Type	R _A *	Unit	A **	Unit	U _A , MWh/yr	E, Ibs/MWh	C, lbs/ton	Y _A , tons/yr
Residential	5.6265	MWh/unit/yr	4,075	units	22,927.99	0.0067	2,000	0.08
Food Store	0.0410	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Restaurant	0.0402	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Hospitals	0.0196	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Retail	0.0141	MWh/sqft/yr	387,000	sqft	5,456.70	0.0067	2,000	0.02
College/University	0.0124	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
High school	0.0075	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Elementary School	0.0075	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Office	0.0131	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Hotel/Motel	0.0177	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Warehouse	0.0121	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Miscellaneous	0.0200	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00
Construction	13.6300	MWh/sqft/yr	0	sqft	0.00	0.0067	2,000	0.00

Total, tons/yr 0.10
* R_A = annual consumption rate (CEQA Handbook, Table A9-11-A). Converted from KWh/unit/year to MWh/Unit/year

Emissions of methane from potable water treatment and transportation for domestic use are calculated using the following equation:

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

V_A = annual emissions of methane from electricity used for potable water treatment and transportation, torslyr.
U_A = annual electricity usage for potable water treatment and transportation, MWhyr.
E = emission factor for electricity usage, OGOF ibs/MWh (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III,
Chapter 6, 2007).
C = conversion factor from bs to tons, 2,000 ibs/ton.

Unit Type	unit type	unit number	V, MG/yr/ unit *	MWh/MG	UA, MWH/yr	E, lbs/MWh	C, lbs/ton	Y _A , tons/yr
Residential	household	335.00	8.5590E+01	0.01020	292.46	0.0067	2,000	0.0009797
Residential	household	3740.00	9.5557E+02	0.01020	36,453.08	0.0067	2,000	0.1221178
Food Store	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.0000000
Restaurant	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
Hospitals	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
Retail	sq ft	387000.00	9.6190E+01	0.01020	379,700.41	0.0067	2,000	1.2719964
Commercial	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
College/University	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
High school	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.0000000
Elementary School	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
Office	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.0000000
Hotel/Motel	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.0000000
Warehouse	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.0000000
Miscellaneous	sq ft	680000.00	0.0000E+00	0.01020	0.00	0.0067	2,000	0.00000000
		•		•	•	•	Total, tons/vr	1.3950939

^{*}V = annual water usage per unite based on daily water usage per land use type

B3a. Fugitive Emissions

Emissions of methane from solid waste disposal treatment are calculated using the following equation:

 $Y_A = (P_A)^*(E)$

 Y_A = annual emissions of methane from solid waste disposal treatment, tonslyr. P_A = armual waste production for disposal treatment, tonslyr. E = emission factor for waste production, 0.0045 tons/fon (Los Angeles County, Engineering Data).

Unit Type	Q, tons/yr/ unit *	Unit Type	Unit number	P _A , tons/yr	E, tons/ton	Y _A , tons/yr
Residential	0.8700	household	4,075	3,545.25	0.0045	15.95
Food Store	0.0000	sq ft	0	0.00	0.0045	0.00
Restaurant	0.0000	sq ft	0	0.00	0.0045	0.00
Hospitals	0.0000	sq ft	0	0.00	0.0045	0.00
Retail	0.0004	sq ft	387,000	154.80	0.0045	0.70
Commercial	0.0004	sq ft	0	0.00	0.0045	0.00
College/University	0.0000	sq ft	0	0.00	0.0045	0.00
High school	0.0000	sq ft	0	0.00	0.0045	0.00
Elementary School	0.0000	sq ft	0	0.00	0.0045	0.00
Office	0.0000	sq ft	0	0.00	0.0045	0.00
Hotel/Motel	0.2800	room	0	0.00	0.0045	0.00
Warehouse	0.0000	sq ft	0	0.00	0.0045	0.00
Miscellaneous	0.0000	sq ft	0	0.00	0.0045	0.00
					Total, tons/yr	16.65

^{*} Q = annual waste production per in tons/unit/year

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B3b. Exhaust Emissions (Hauling Trucks)

Emissions of methane from solid waste transportation are calculated using the following equations:

 $Y_A = (P_A)^*(d)^{-1}*(Ca)^{-1}*(M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$

V_A = annual emissions of methane from solid waste transportation, tonslyr.
P_c = annual emissions of methane from solid waste transportation, tonslyr (see BSA Fugilive Emissions).
d = solid waste density, 0.0355 tonsicuty (California Integrated Waste Management Board).
Ca = truck lead capacity, 20 crypting.
Description of the capacity of complete.
E = emission factor for final ling trucks, 0.2012 g/mille (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).
C₂ = conversion factor from the to tons, 2,000 bis/hon.

B3c. Exhaust Emissions (Disposal Equipment)

Emissions of methane from solid waste disposal are calculated using the following equations:

 Y_A = annual emissions of methane from solid waste disposal, tonslyr. E = emission factor for disposal equipment, lishfir (SCACMID Off-Road Mobile Source Emission Factors, 2007). In outputs per piles, Y_A is the period of Y_A is a constant of Y_A in a day set year, Y_A is dispoyed, or a day set year, Y_A is dispoyed. C = conversion factor from Y_A is to tons, Y_A 2,000 bishon.

Vehicle Type	E, lbs/hr *	h, hrs/day **	n, days/yr	C, lbs/tons	Y _{AWE} , tons/yr
Excavator	0.1695	2	365	2,000	0.06
Grader	0.1936	2	365	2,000	0.07
Off-Highway Tractor	0.2578	2	365	2,000	0.09
Off-Highway Truck	0.2730	2	365	2,000	0.10
				Total tons/vr	0.32

*E = emission factor for disposal equipment based on the composite reactive organities granting semission factor for disposal equipment based on the composite reactive organities generation factor for each vehicle type.

*Th = operating hours per day (and vehicle fleet) are based on typical operating time (and vehicle fleet) necessary to dispose 5.11 tons of solid waste per day.

Emissions of methane from waste water treatment are calculated using the following equ

- $Y_{\rm A2}$ = annual emissions of methane from waste water treatment, forselyr. $Y_{\rm A1}$ = annual emissions of methane from electricity used for potable water treatment and transportation, tonslyr. $R_{\rm W}$ = ratio between potable water usage and waste water production, 0.56 (USEPA, 1992).

C. Summary Table

	Source Type	Emissions, tons/yr	Emissions tons/yr (GWP)
	Construction equipment	0.09	1.89
Direct	Motor vehicles	22.67	476.07
Landscape equipment		1.59E-03	0.03
	Cooling and heating	1.50	31.59
	Total direct, tons/yr	24.27	509.59
	Electricity	0.10	2.00
Indirect	Potable water	1.40	29.30
illullect	Solid waste	16.97	356.42
	Wastewater	0.78	16.41
	Total indirect, tons/yr	19.24	404.12
	Total, tons/yr	43.51	913.71
	Blobal warming potential index	21	21
Glo	bal warming potential, tons/yr	913.71	19,187.90

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Nitrous Oxide

A. Direct Sources

A1. Mobile Source (Construction Equipment)

 $Y_{\Delta} = (M)^{*}(E)^{*}(C_{1})^{-1}(C_{2})^{-1}$

- Y_a = annual emissions of nitrous oxide from construction equipment, tonslyr.

 M = annual mileage for construction equipment, milestyr.

 E = emission factor for construction equipment, 0.0048 grimile (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).

 C₁ = conversion factor from gr to list, 455.58 gr/bls.

 C₂ = conversion factor from lbs to tons, 2,000 lbs/lon.

Unit Type	M*, miles/yr	E, gr/mile	C ₁ , gr/lbs	C2, lbs/tons	Y _A , tons/yr
Non cat heavy-duty truck	416625.00	0.0048	453.59	2,000	0.00220

Unit Type Mr., milestyr E. grimle C., grifbs C., bshons Y., tonskyr
Non cat heavy-duty truck | 416625.00 | 0.0040 | 453.59 | 2.000 | 0.00220

*M = annual milesge for construction equipment based on the ratio between annual emissions of carbon dioxide from construction equipment (URBEMIS 2070 = 2.0 uput title) and the emission factor for carbon microside from construction equipment based on the following EMFAC criteria. 2000 calendar year, all heavy-duty trucks, temperature of 43°F, relative humidity of 74% (average between 63% and 84%, January AM and PM), and speed of 10 mileshr.

A2. Mobile Source (Motor Vehicles)

Emissions of nitrous oxide from motor vehicles are calculated using the following equation:

 $Y_A = (M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$

- V_A = annual emissions of nitrous oxide from motor vehicles, tonslyr.

 M = annual reliasejs for motor vehicles, milesty (UREMIMS 2007 9.2.2 output file).
 E = emission factor from dorr vehicles, milesty (UREMIMS 2007 9.2.2 output file).
 E = emission factor from dorr vehicles, milesty (UREMIMS 2007 9.2.2 output file).
 C = convenition factor from do to fort, 2000 bashon.

Unit Type	M, miles/yr	E, gr/mile	C ₁ , gr/lbs	C2, lbs/tons	Y _A , tons/yr
Non cat passenger car	0.00	0.0166	453.59	2,000	0.00000
Cat passenger car	77275057.44	0.0518	453.59	2,000	4.41241
Diesel passenger car	0.00	0.0161	453.59	2,000	0.00000
Non cat light-duty truck	0.00	0.0208	453.59	2,000	0.00000
Cat light-duty truck	70191510.51	0.0649	453.59	2,000	5.02153
Diesel light-duty truck	0.00	0.0483	453.59	2,000	0.00000
Non cat heavy-duty truck	0.00	0.0480	453.59	2,000	0.00000
Cat heavy-duty truck	5473488.91	0.1499	453.59	2,000	0.90442
Diesel heavy-duty truck	4024903.56	0.0322	453.59	2,000	0.14286
Non cat motorcycles	1287917.62	0.0073	453.59	2,000	0.01036
Cat motorcycles	2736824.95	0.0073	453.59	2,000	0.02202
				Total, tons/vr	10.51360

A3. Mobile Source (Landscape Equipment)

Emissions of nitrous oxide from landscape equipment are calculated using the following equation:

- V_{1/2} = annual emissions of nitrous oxide from landscape equipment, tonslyr.
 V_{1/2} = annual emissions of nitrous oxide from motor vehicles, tonslyr.
 F_{1/2} = ratio between carbon monoside unminglated emissions from motor vehicles and carbon monoxide unmitigated emissions from landscape equipment, (URBEMIS 2007 9.2.2 output filt
 F_{1/2} = ratio between carbon monoxide unmitigated emissions from landscape equipment, (URBEMIS 2007 9.2.2 output filt

YA1, tons/yr	R _T *	Y _{A2} , tons/yr
10.51	0.00007	7.40E-04

A4. Stationary Source (Cooling and Heating)

Emissions of nitrous oxide from cooling and heating are calculated using the following equation

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

Y_A = annual emissions of nitrous oxide from cooling and heating, tonslyr.
U_r = annual natural gas usage, MMBTUslyr.
E = emission factor for natural gas usage, 0.0001 kg/MMBTU (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III,
Chapter 8, 2007).
C = conversion factor from kg to tons, 907.18 kg/ton.

Unit Type	R _A *	Unit	A **	Unit	U _A , MMBTUs/yr	E, kg/MWh	C, kg/ton	Y _A , tons/yr
SF Residential	83.97900	MMBTUs/unit/	335.00	household	28,132.97	0.0001	907.18	0.00
MF Residential	50.54490	MMBTUs/unit/	3,740.00	household	189,037.93	0.0001	907.18	0.02
Food Store	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Restaurant	0.00000	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Hospitals	0.00000	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Retail	0.03654	MMBTUs/unit/	387,000.00	sq ft	14,140.98	0.0001	907.18	0.00
Commercial	0.03654	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
College/University	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
High school	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Elementary School	0.06048	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Office	0.02520	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Hotel/Motel	0.06048	MMBTUs/unit/	0.00	room	0.00	0.0001	907.18	0.00
Warehouse	0.00000	MMBTUs/unit/	0.00	sq ft	0.00	0.0001	907.18	0.00
Miscellaneous	0.00000	MMBTUs/sqft/	0.00	sq ft	0.00	0.0001	907.18	0.00
							Total, tons/yr	0.025498

* R_A = annual consumption rate (CEQA Handbook, Table A9-12-A).

** A = unit type number.

B. Indirect Sources

Emissions of nitrous oxide from electricity usage are calculated using the following equation

 $Y_A = (U_A)^*(E)^*(C)^{-1}$

Y_A = annual emissions of nitrous coxide from electricity usage, tonslyr.
U_r = annual electricity usage, MMHyr.
E = emission factor for electricity usage, 0.0337 lbs/MWh (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III.,
Chapter 6, 2007).

0.0037

				land use unit				
Unit Type	R _A *	Unit	A **	type	U _A , MWh/yr	E, Ibs/MWh	C, lbs/ton	Y _A , tons/yr
Residential	5.6265	MWh/unit/yr	4,075	units	22,927.99	0.0037	2,000	0.04
Food Store	0.0410	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Restaurant	0.0402	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Hospitals	0.0196	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Retail	0.0141	MWh/sqft/yr	387,000	sqft	5,456.70	0.0037	2,000	0.01
College/University	0.0124	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
High school	0.0075	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Elementary School	0.0075	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Office	0.0131	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Hotel/Motel	0.0177	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Warehouse	0.0121	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
Miscellaneous	0.0200	MWh/sqft/yr	0	sqft	0.00	0.0037	2,000	0.00
							Total, tons/yr	0.05

* R_A = annual consumption rate (CEQA Handbook, Table A9-11-A).

** A = unit type number.

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B2. Potable Water

Emissions of nitrous oxide from potable water treatment and transportation for domestic use are calculated using the following equation:

Y₄ = annual emissions of nitrous oxide from electricity used for potable water treatment and transportation, tonslyr.
U₄ = annual electricity usage for potable water treatment and transportation, tonslyr.
U₅ = annual electricity usage for potable water treatment and transportation, MWhlyr.
E = emission factor for electricity usage, 0.0037 ba/MWh (California Climate Action Registry General Reporting Protocol, Version 2.2, Part III, Chapter 6, 2007.
C = conversion factor from bs to tons, 2,000 ks/ton.

Unit Type	unit type	unit number	V, MG/yr/ unit ****	MWh/MG	UA, MWH/yr	E, lbs/MWh	C, Ibs/ton	Y _a , tons/yr
Residential	household	335.00	8.5590E+01	0.01020	292.46	0.0037	2,000	5.40E-04
Residential	household	3740.00	9.5557E+02	0.01020	36,453.08	0.0037	2,000	6.74E-02
Food Store	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Restaurant	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Hospitals	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Retail	sq ft	387000.00	9.6190E+01	0.01020	379,700.41	0.0037	2,000	7.02E-01
Commercial	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
College/University	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
High school	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Elementary School	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Office	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Hotel/Motel	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Warehouse	sq ft	0.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00
Miscellaneous	sq ft	680000.00	0.0000E+00	0.01020	0.00	0.0037	2,000	0.00E+00

B3a. Exhaust Emissions (Hauling Trucks)

Emissions of nitrous oxide from solid waste transportation are calculated using the following equations:

 $Y_A = (P_A)^*(d)^{-1}*(Ca)^{-1}*(M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$

V_a = annual emissions of introus oxide from solid waste transportation, tonslyr.
P_r = annual waste production for disposal treatment, tonslyr (see BSa. Fuglive Emissions for carbon monoxide and methane).
d = solid seated energin, 0.0355 forsicity (California Integrated Waste Management Board).
Ca = fruck load capacity, 20 apythrip
Markey (Emission factor for manufacture).
E = emission factor for haufung ruxds, 0.0448 gminle (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).
C_a = conversal carbor from gr to Bs. 455 gg/lbbs.
C_a = conversal carbor from Bis to tons, 2,000 bishon.

Unit Type	P _A , tons/yr	d, tons/cuyd	Ca, cuyd/trip	M, miles/trip *	E, gr/mile **	C ₁ , gr/lbs	C ₂ , Ibs/tons	Y _A , tons/yr
Residential	3,545.25	0.0365	20	2.30	0.0048	453.59	2,000	0.00005910
Food Store	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Restaurant	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Hospitals	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Retail	154.80	0.0365	20	2.30	0.0048	453.59	2,000	0.00000258
Commercial	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
College/University	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
High school	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Elementary School	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Office	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Hotel/Motel	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Warehouse	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
Miscellaneous	0.00	0.0365	20	2.30	0.0048	453.59	2,000	0.00000000
							Total, tons/vr	0.00006168

* M = average trip mileage based on the average round trip distance from disposal site that has jurisdiction over the project site

Emissions of nitrous oxide from solid waste disposal are calculated using the following equations:

 $Y_A = (E)^*(h)^*(n)^*(C)^{-1}$

- $V_{\rm A}$ = annual emissions of nitrous oxide from solid waste disposal, tonslyr. E = emission factor for disposal equipment, Iteh'ly (SCAOMD Oif-Road Mobile Source Emission Factors, 2007). In operating hours per digs, 2 hardys, and a special property of the proper

Vehicle Type	E, lbs/hr *	h, hrs/day **	n, days/yr	C, Ibs/tons	Y _{AWE} , tons/yr
Excavator	1.3249	2	365	2,000	0.48
Grader	1.6191	2	365	2,000	0.59
Off-Highway Tractor	2.1767	2	365	2,000	
Off-Highway Truck	2.7256	2	365	2,000	

- "E = emission factor for disposal equipment based on the composite introgen oxide emission factor for disposal equipment based on the composite introgen oxide emission factor for each vehicle type.

 "h = operating hours per day (and vehicle fleet) are based on typical operating time (and vehicle fleet) necessary to dispose 5.11 tons of solid waste per day.

B4. Wastewater

Emissions of nitrous oxide from waste water treatment are calculated using the following equation

 $Y_{A2} = (Y_{A1})^*(R_W)$

- $Y_{\rm A2}$ = annual emissions of nitrous oxide from waste water treatment, tons/yr. $Y_{\rm A1}$ = annual emissions of nitrous oxide from electricity used for potable water treatment and transportation, tons/yr. $R_{\rm W}$ = ratio between potable water usage and waste water production, 0.58 (USEPA, 1992).

YA1, tons/yr	R _w *	Y _{A2} , tons/yr
7.70E-01	0.56	4.31E-01

7.70E-01 0.56 4.31E-01
*R_m = ratio between water usage and water water production based on the ratio between indoor water usage and total water usage per household under the assumption that emissions from potable water treatment and transportation for domestic use are equal to emissions from waste water transportation and treatment.

C. Summary Table

	Source Type	Emissions, tons/yr	Emissions tons/yr (GWP)
	Construction equipment	0.00220	0.68324
Direct	Motor vehicles	10.51360	3259.216
Direct	Landscape equipment	0.00074	0.2294
	Cooling and heating	0.02550	7.90438
	Total direct, tons/yr	10.54204	3268.03302
	Electricity	0.05251	16.2781
Indirect	Potable water	0.77043	238.8327439
IIIulieu	Solid waste	2.85006	883.5191208
	Wastewater	0.43144	133.7463366
	Total indirect, tons/yr	4.10444	1272.37630
	Total, tons/yr	14.64648	4540.40932
	Blobal warming potential index	310	
Glo	bal warming potential, tons/yr	4540.40932	7808.44

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Renaissance Potential Net Development Input data for Green House Gas Emissions Mitigated

Carbon Dioxide

A. Direct Sources

A1. Mobile (Construction Equipment, Motor Vehicles, and Landscape Equipment) and Stationary Sources (Cooling and Heating)

Emissions of carbon dioxide from mobile (construction equipment, motor vehicles, and landscape equipment) and stationary sources (cooling and heating) are calculated using the following equation:

 $Y_A = (Y_1)+(Y_2)+(Y_3)+(Y_4)$

- Y_A = mitigated annual emissions of carbon dioxide from mobile and stationary sources, tons/yr.
- Y₁ = mitigated annual emissions of carbon dioxide from construction equipment, tons/yr (URBEMIS 2007 9.2.2 output file).
- Y₂ = mitigated annual emissions of carbon dioxide from motor vehicles, tons/yr (URBEMIS 2007 9.2.2 output file).
- Y₃ = mitigated annual emissions of carbon dioxide from landscape equipment, tons/yr (URBEMIS 2007 9.2.2 output file).
- Y₄ = mitigated annual emissions of carbon dioxide from cooling and heating, tons/yr (URBEMIS 2007 9.2.2 output file).

Y ₁ , tons/yr	Y2, tons/yr	Y ₃ , tons/yr	Y ₄ , tons/yr	Y _A , tons/yr
677.45	77,601.49	0.00	8,506.67	86,785.61
			Reduction percentage, %	7.24

Additional reductions beyond Urbemis

Heating & Cooling & Transportation

Red, = Building design shall incorporate basic or enhanced insulation such that heat transfer and thermal bridging is minimized (20% reduction in heating. Heating is a percentage of total electric, therefore reduction is heating percentage * reduction pe

Red₂ = Limit air leakage through the structure or within the heating & cooling distribution system (?%reduction). Heating is a percentage of total electric, therefore reduction is heating percentage * reduction

Red₃ = Residential buildings meet or exceed ENERGY STAR rated windows. This will reduce heat/cooling energy usage. Heating is a percentage of total electric, reduction = Mitigation reduction * Heating % of total electrical usage. (?% reduction) Red₄ = Residential buildings meet or exceed ENERGY STAR rated heating and cooling units. This will reduce heat/cooling energy usage. Heating is a percentage of total electric, reduction = Mitigation reduction * Heating % of total electrical usage. (?% r

Red₅ = Plant shade trees around main buildings to reduce direct sunlight into the structures (?% reduction)

B1. Electricity

Emissions of carbon dioxide from electricity usage are calculated using the following equation:

 Y_{MA} = mitigated annual emissions of carbon dioxide from electricity usage, tons/yr.

Y_{IIA} = unmitigated annual emissions of carbon dioxide from electricity usage, tons/yr.

Red₁ = Title 24 reduction proportion, (URBEMIS 2007 9.2.2 output file). *Note if mitigated in Urbemis, do

Red, = Proposed residential buildings meet or exceeds the performance of an energy star labeled home (5% reduction) RESIDENTIAL ONLY Red, = Residential buildings meet or exceed Energy Star rated light fixtures (?% reduction)

Red₄ = Residential buildings meet or exceed Energy Star rated appliances (?% reduction)

Red₅ = Installation and operation of renewable electric generation systems (?% reduction)

Red₆ = Installation and operation of energy efficient domestic hot water systems (5% reduction)

Red₇ = All lighting is fluorescent: Non-Residential Land Uses (?% reduction)

Red₈ = Reduction from use of solar panels

Land Use Type	Y _{UA} , tons/yr	Red ₁	Red ₂	Red ₃	Red₄	Red ₅	Red ₆	Red ₇	Red ₈	Y _{MA} , tons/yr
SF Residential	682.44	129.66360	27.639	0.000	0.000	0.000	24.944		0	500.19
MF Residential	7,618.87	1447.58530	308.564	0.000	0.000	0.000	278.479		0	5,584.24
Food Store	0.00	0.00000				0.000	0.000	0	0	0.00
Restaurant	0.00	0.00000				0.000	0.000	0	0	0.00
Hospitals	0.00	0.00000				0.000	0.000	0	0	0.00
Retail	1,970.05	55.16140				0.000	53.617	0	0	1,861.27
College/University	0.00	0.00000				0.000	0.000	0	0	0.00
High school	0.00	0.00000				0.000	0.000	0	0	0.00
Elementary School	0.00	0.00000				0.000	0.000	0	0	0.00
Office	0.00	0.00000				0.000	0.000	0	0	0.00
Hotel/Motel	0.00	0.00000				0.000	0.000	0	0	0.00
Warehouse	0.00	0.00000				0.000	0.000	0	0	0.00
Open Space	2.46	0.00000				0.000	0.000	0	0	2.46
Commercial	0.00	0.00000				0.000	0.000	0	0	0.00
	_						Т	otal mitigated	tons per year	7,948.17
İ								Reduction p	ercentage, %	22.64

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Emissions of carbon dioxide from potable water treatment and transportation for domestic use are calculated using the following equation:

 $Y_{MA} = (Y_{UA})^*(1-(Red_1+Red_2))$

Y_{MA} = mitigated annual emissions of carbon dioxide from electricity used for potable water treatment and transportation, tons/yr.

 Y_{UA} = unmitigated annual emissions of carbon dioxide from electricity used for potable water treatment and transportation, tons/yr.

Red, = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential. Red₂ = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).

Red₃ = Incorporate water-efficient irrigation controls (20% reduction)

Red, = Use reclaimed water for landscape irrigation (?% reduction)

Red₅ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (3% reduction)

Land Use Type	YUA, tons/yr	Red₁	Red ₂	Red ₃	Red₄	Red₅	Y _{MA} , tons/yr
SF Residential	0.32	0.10510	0.006	0.039	0.000	0.005	0.16
MF Residential	3.53	1.17337	0.067	0.435	0.000	0.053	1.80
Food Store	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Restaurant	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Hospitals	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Retail	0.11	0.02249	0.002	0.010	0.000	0.001	0.08
Commercial	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
College/University	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
High school	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Elementary School	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Office	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Hotel/Motel	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Warehouse	0.00	0.00000	0.000	0.000	0.000	0.000	0.00
Open Space	0.62	0.21847	0.000	0.012	0.000	0.000	0.39
Total mitigated tons per year						2.43	
					Reduction p	ercentage, %	46.8834

* Red₂ = low flush toilet reduction proportion based on the ratio between the daily water saving of 22 gals per household and the daily water usage of 700 gals per household.

B3. Solid Waste

Emissions of carbon dioxide from solid waste disposal treatment are calculated using the following equation:

 $Y_{MA} = (Y_{UA})^*(1-Red_1)^*(1-Red_2)$

Y_{MA} = mitigated annual emissions of carbon dioxide from solid waste disposal treatment, tons/yr.

Y_{UA} = unmitigated annual emissions of carbon dioxide from solid waste disposal treatment, tons/yr.

Red₁ = Los Angles-County Recycling Program reduction proportion, 0.50.

Red₂ = Providing educational and publicity material for reducing waste (.03 reduction).

Y _{UA} , tons/yr		Red ₂	Y _{MA} , tons/yr
16.65	8.32500	0.24975	8.08
	Reducti	on percentage, %	51.5000

B3b. Exhaust Emissions (Hauling Trucks)

Emissions of carbon dioxide from solid waste transportation are not reduced by any mitigation measures; therefore, emissions of carbon dioxide from solid waste transportation equal to 10.84 tons/yr.

B3c. Exhaust Emissions (Disposal Equipment)

Emissions of carbon dioxide from solid waste disposal are not reduced by any mitigation measures; therefore, emissions of carbon dioxide from solid waste disposal equal to 0.00

B4. Wastewater

Emissions of carbon dioxide from waste water treatment are calculated using the following equation:

$$Y_{MA1} = (Y_{MA2})^*(R_W)$$

Y_{UM1} = unmitigated tons/yr.

Y_{MA} = mitigated annual emissions of carbon dioxide from electricity used for potable water treatment and transportation, tons/yr.

Red₁ = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential.

 $Red_2 = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).$

Red₃ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (3% reduction)

Y _{UM1} , tons/yr	Red₁	Red ₂	Red₃	Y _{MA} , tons/yr	
1.92	0.63923	0.004	0.036	1.24	
0.06	0.01124	0.001	0.001	0.04	
0.31			0.005	0.31	
	Reduction percentage, % 30.42				

C. Summary Table

	Source Type	Emissions, tons/yr	GWP tons/yr
Direct	Mobile and stationary	86,785.61	86,785.61
	Total direct, tons/yr	86,785.61	
	Electricity	7,948.17	7,948.17
Indirect	Potable water	2.43	2.43
mairect	Solid waste	18.92	18.92
	Wastewater	1.24	1.24
	Total indirect, tons/yr	7,970.76	
	Total, tons/yr	94,756.37	
Reduction percentage, %		8.78	
Global warming potential index		1	
	Global warming potential, tons/yr	94,756.37	

Methane

A. Direct Sources

A1. Mobile Source (Construction Equipment)

Emissions of methane from construction equipment are not reduced by any mitigation measures; therefore, emissions of methane from construction equipment equal to 0.09

A2. Mobile Source (Motor Vehicles)

Emissions of methane from motor vehicles are calculated using the following equation:

 $Y_{MA} = (M_M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$

Y_{MA} = mitigated annual emissions of methane from motor vehicles, tons/yr.

M_M = mitigated annual mileage for motor vehicles, miles/yr (URBEMIS 2007 9.2.2 output file).

E = emission factor for motor vehicles, gr/mile (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).

C₁ = conversion factor from gr to lbs, 453.59 gr/lbs.

C₂ = conversion factor from lbs to tons, 2,000 lbs/ton.

Red, = Promote ride sharing programs for all tenants: Non-Residential Land Uses Transportation only; Reduction = %reduction*wehicle emissions from total use (?% reduction)

Red₂ = Provide Adequate bicycle parking near building entrances: Non-Residential Land Uses Transportation only; Reduction = %reduction*wehicle emissions from total use (?% reduction) Red₃ = Idling is limited to less than 5 minutes: Non-Residential Land Uses Transportation only; Reduction = %reduction* whehicle emissions from total use (7% reduction)

*Note all reductions are accounted for in Urbemis.

Unit Type	M _M , miles/yr	E, gr/mile	C ₁ , gr/lbs	C ₂ , lbs/tons	Y _{MA} , tons/yr
Non cat passenger car	0.00	0.1931	453.59	2,000	0.00
Cat passenger car	72915853.92	0.1127	453.59	2,000	9.06
Diesel passenger car	0.00	0.0161	453.59	2,000	0.00
Non cat light-duty truck	0.00	0.2253	453.59	2,000	0.00
Cat light-duty truck	66231900.64	0.1448	453.59	2,000	10.57
Diesel light-duty truck	0.00	0.0966	453.59	2,000	0.00
Non cat heavy-duty truck	0.00	0.2012	453.59	2,000	0.00
Cat heavy-duty truck	5,164,721.08	0.1448	453.59	2,000	0.82
Diesel heavy-duty truck	3,797,852.63	0.0161	453.59	2,000	0.07
Non cat motorcycles	1,215,264.23	0.2092	453.59	2,000	0.28
Cat motorcycles	2,582,436.49	0.2092	453.59	2,000	0.60
				Total, tons/yr	21.40
			Reduction i	nercentage %	5.60

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A3. Mobile Source (Landscape Equipment)

Emissions of methane from landscape equipment are calculated using the following equation:

$$\mathsf{Y}_{\mathsf{MA2}} = (\mathsf{Y}_{\mathsf{MA1}})^*(\mathsf{R}_\mathsf{T})$$

Y_{MA2} = mitigated annual emissions of methane from landscape equipment, tons/yr.

Y_{MA1} = Annual emissions of methane from landscape equipment, tons/yr. (from unmitigated)

R_T = % reduction from Urbemis

Y _{MA1} , tons/yr	R _T *	Y _{MA2} , tons/yr
0.00	1	0.00
Reduction	n percentage, %	100.00

A4. Stationary Source (Cooling and Heating)

Emissions of methane from cooling and heating are calculated using the following equation:

$$Y_{MA} = (Y_{IIA})^*(1-Red)$$

Y_{MA} = mitigated annual emissions of methane from cooling and heating, tons/yr.

Y_{UA} = unmitigated mitigated annual emissions of methane from cooling and heating, tons/yr.

Red, = Building design shall incorporate basic or enhanced insulation such that heat transfer and thermal bridging is minimized (20% reduction)

Red₂ = Limit air leakage through the structure or within the heating & cooling distribution system (?%reduction).

Red₃ = Residential buildings meet or exceed ENERGY STAR rated windows. (?% reduction)
Red₄ = Residential buildings meet or exceed ENERGY STAR rated heating and cooling units. (5% reduction)

 Red_{δ} = Plant shade trees around main buildings to reduce direct sunlight into the structures (?% reduction)

Land Use Type	Y _{UA} , tons/yr	Red₁	Red ₂	Red ₃	Red₄	Red ₅	Y _{MA} , tons/yr
SF Residential	0.182968	0.03476	0.000	0.000	0.000	0.000	0.15
MF Residential	1.22944	0.23359	0.000	0.000	0.000	0.000	1.00
Food Store	0	0.00000	0.000			0.000	0.00
Restaurant	0	0.00000	0.000			0.000	0.00
Hospitals	0	0.00000	0.000			0.000	0.00
Retail	0.091968	0.00478	0.000			0.000	0.09
Commercial	0	0.00000	0.000			0.000	0.00
College/University	0	0.00000	0.000			0.000	0.00
High school	0	0.00000	0.000			0.000	0.00
Elementary School	0	0.00000	0.000			0.000	0.00
Office	0	0.00000	0.000			0.000	0.00
Hotel/Motel	0	0.00000	0.000			0.000	0.00
Warehouse	0	0.00000	0.000			0.000	0.00
Open Space	0	0.00000	0.000			0.000	0.00
						Total, tons/yr	1.23124
	Reduction percentage, %						

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B. Indirect Sources

B1. Electricity

Emissions of methane from electricity usage are calculated using the following equation:

 $Y_{MA} = (Y_{UA})^*(1-Red)$

 Y_{MA} = mitigated annual emissions of methane from electricity usage, tons/yr. Y_{UA} = unmitigated annual emissions of methane from electricity usage, tons/yr.

V_{IA} = unmitigated annual emissions of methane from electricity usage, tonsyr.

Red1 = Title 24 reduction proportion, (URBEMIS 2007 9.2.2 output file). Note if mitigated in Urbemis, do not add mitigation here for it.

Red2 = Proposed residential buildings meet or exceeds the performance of an energy star labeled home (5% reduction) RESIDENTIAL ONLY

Red3 = Residential buildings meet or exceed Energy Star rated light fixtures (7% reduction)

Red4 = Residential buildings meet or exceed Energy Star rated appliances (7% reduction)

Red5 = Installation and operation of renewable electric generation systems (7% reduction)

Red6 = Installation and operation of energy efficient domestic hot water systems (5% reduction)

Red6 = Reduction from use of solar panels

Land Use Type	Y _{UA} , tons/yr	Red₁	Red ₂	Red ₃	Red ₄	Red₅	Red ₆	Red ₇	Red ₈	Y _{MA} , tons/yr
Residential	0.08	0.00000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.07
Food Store	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Restaurant	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Hospitals	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Retail	0.02	0.00000				0.000	0.00	0.000	0.000	0.02
College/University	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
High school	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Elementary School	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Office	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Hotel/Motel	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Warehouse	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
Open Space	0.00	0.00000				0.000	0.000	0.000	0.000	0.00
							T	otal mitigated	tons per year	0.09143
l								Reduction p	ercentage, %	3.85

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Emissions of methane from potable water treatment and transportation for domestic use are calculated using the following equation:

$$\mathsf{Y}_{\mathsf{MA}} = (\mathsf{Y}_{\mathsf{UA}})^*(1\text{-}(\mathsf{Red}_1\text{+}\mathsf{Red}_2))$$

Y_{MA} = mitigated annual emissions of methane from electricity used for potable water treatment and transportation, tons/yr.

 Y_{UA} = unmitigated annual emissions of methane from electricity used for potable water treatment and transportation, tons/yr.

Red₁ = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential.

Red₂ = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).

Red₃ = Incorporate water-efficient irrigation controls (?% reduction)

Red₄ = Use reclaimed water for landscape irrigation (?% reduction)
Red₅ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (?% reduction)

Land Use Type	YUA, tons/yr	Red₁	Red ₂	Red ₃	Red₄	Red ₅	Y _{MA} , tons/yr
SF Residential	0.00098	0.00033	0.000	0.000	0.000	0.000	0.00
MF Residential	0.12212	0.04060	0.000	0.000	0.000	0.000	0.08
Food Store	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Restaurant	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Hospitals	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Retail	1.27200	0.24931	0.000	0.000	0.000	0.000	1.02
Commercial	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
College/University	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
High school	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Elementary School	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Office	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Hotel/Motel	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Warehouse	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Open Space	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
					Total mitigated	tons per year	1.10465
					Reduction p	ercentage, %	20.82

Red₂ = low flush toilet reduction proportion based on the ratio between the daily water saving of 22 gals per household and the daily water usage of 700 gals per household.

B3. Solid Waste

B3a. Fugitive Emissions

Emissions of methane from solid waste disposal treatment are calculated using the following equation:

$$Y_{MA} = (Y_{UA})^*(1-Red_1)^*(1-Red_2)$$

Y_{MA} = mitigated annual emissions of methane from solid waste disposal treatment, tons/yr.

Y_{UA} = unmitigated annual emissions of methane from solid waste disposal treatment, tons/yr.

Red₁ = Los Angles-County Recycling Program reduction proportion, 0.50. Red₂ = Providing educational and publicity material for reducing waste (?% reduction).

Y _{UA} , tons/yr	Red₁	Red ₂	Y _{MA} , tons/yr
16.65	8.33		8.33
	Reducti	50.00	

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B3b. Exhaust Emissions (Hauling Trucks)

Emissions of methane from solid waste transportation are not reduced by any mitigation measures; therefore, emissions of methane from solid waste transportation equal to 0.13 tons/yr.

B3c. Exhaust Emissions (Disposal Equipment)

Emissions of methane from solid waste disposal are not reduced by any mitigation measures; therefore, emissions of methane from solid waste disposal equal to 0.16 tons/yr.

Emissions of methane from waste water treatment are calculated using the following equation:

$$\mathsf{Y}_{\mathsf{MA1}} = (\mathsf{Y}_{\mathsf{MA2}})^{\star}(\mathsf{R}_{\mathsf{W}})$$

 Y_{MA1} = mitigated annual emissions of methane from waste water treatment, tons/yr.

Y_{MAD} = mitigated annual emissions of methane from electricity used for potable water treatment and transportation, tons/vr.

Red, = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential.

Red₂ = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).

Red₃ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (?% reduction)

Y _{UM1} , tons/yr	Red ₁	Red ₂	Red ₃	Y _{MA} , tons/yr	
0.78125	0.25977	0.001 0.000 0.52			
			Reduction percentage, %	33.43690	

C. Summary Table

B4. Wastewater

	Source Type	Emissions, tons/yr	GWP tons/yr
	Construction equipment	0.09	1.89
Direct	Motor vehicles	21.40	449.40
Direct	Landscape equipment	0.00	0.03
	Cooling and heating	1.23	25.86
	Total direct, tons/yr	22.72	
	Electricity	0.09	1.92
Indirect	Potable water	1.10	23.20
munect	Solid waste	8.61	180.90
	Wastewater	0.52	10.92
	Total indirect, tons/yr	10.33	
	Total, tons/yr	33.05	
	Reduction percentage, %	24.03	
	Global warming potential index	21	
	Global warming potential, tons/yr	694.12	694.12

A. Direct Sources

A1. Mobile Source (Construction Equipment)

Emissions of nitrous oxide from construction equipment are not reduced by any mitigation measures; therefore, emissions of nitrous oxide from construction equipment equal to 0.00 tons/yr.

A2. Mobile Source (Motor Vehicles)

Emissions of nitrous oxide from motor vehicles are calculated using the following equation:

$$Y_{MA} = (M_M)^*(E)^*(C_1)^{-1}*(C_2)^{-1}$$

Y_{MA} = mitigated annual emissions of nitrous oxide from motor vehicles, tons/yr.

M_M = mitigated annual mileage for motor vehicles, miles/yr (URBEMIS 2007 9.2.2 output file).

E = emission factor for motor vehicles, g/mile (USEPA Direct Emissions from Mobile Combustion Sources, Climate Leaders, 2004).

C₁ = conversion factor form of to lbs, 453.59 g/lbs.

C₂ = conversion factor from lbs to tons, 2,000 lbs/ton.

Red₁ = Promote ride sharing programs for all tenants: Non-Residential Land Uses Transportation only; Reduction = %reduction*%vehicle emissions from total use (?% reduction)

Red_ = Provide Adequate bicycle parking near building entrances: Non-Residential Land Uses Transportation only; Reduction = %reduction*wehicle emissions from total use (7% reduction)

Red₃ = Idling is limited to less than 5 minutes: Non-Residential Land Uses Transportation only; Reduction = %reduction*%vehicle emissions from total use (?% reduction)

*Note all reductions are accounted for in Urbemis.

Unit Type	M _M , miles/yr	E, gr/mile	C ₁ , gr/lbs	C2, lbs/tons	Y _{MA} , tons/yr
Non cat passenger car	0.00	0.0166	453.59	2,000	0.00
Cat passenger car	72915853.92	0.0518	453.59	2,000	4.16
Diesel passenger car	0.00	0.0161	453.59	2,000	0.00
Non cat light-duty truck	0.00	0.0208	453.59	2,000	0.00
Cat light-duty truck	66231900.64	0.0649	453.59	2,000	4.74
Diesel light-duty truck	0.00	0.0483	453.59	2,000	0.00
Non cat heavy-duty truck	0.00	0.0480	453.59	2,000	0.00
Cat heavy-duty truck	5164721.08	0.1499	453.59	2,000	0.85
Diesel heavy-duty truck	3797852.63	0.0322	453.59	2,000	0.13
Non cat motorcycles	1215264.23	0.0073	453.59	2,000	0.01
Cat motorcycles	2582436.49	0.0073	453.59	2,000	0.02
				Total, tons/yr	9.91
Reduction percentage, %					

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A3. Mobile Source (Landscape Equipment)

Emissions of nitrous oxide from landscape equipment are calculated using the following equation:

$$\mathsf{Y}_{\mathsf{MA2}} = (\mathsf{Y}_{\mathsf{MA1}})^*(\mathsf{R}_\mathsf{T})$$

Y_{MA2} = mitigated annual emissions of nitrous oxide from landscape equipment, tons/yr.

Y_{MA1} = Annual emissions of nitrous oxide from landscape equipment, tons/yr. (directly from unmitigated)

R_T = ratio between carbon monoxide unmitigated emissions from motor vehicles and carbon monoxide unmitigated emissions from landscape equipment, 0.00064 (URBEMIS 2007 9.2.2 output file).

Y _{MA1} , tons/yr	R _T *	Y _{MA2} , tons/yr			
0.00074	1.00000	0.001			
Reduction	Reduction percentage, %				

A4. Stationary Source (Cooling and Heating)

Emissions of nitrous oxide from cooling and heating are calculated using the following equation:

$$Y_{MA} = (Y_{UA})^*(1-Red)$$

Y_{MA} = mitigated annual emissions of nitrous oxide from cooling and heating, tons/yr.

Y_{UA} = unmitigated mitigated annual emissions of nitrous oxide from cooling and heating, tons/yr.
Red₁ = Building design shall incorporate basic or enhanced insulation such that heat transfer and thermal bridging is minimized (20% reduction)

Red₂ = Limit air leakage through the structure or within the heating & cooling distribution system (?%reduction).

Red₃ = Residential buildings meet or exceed ENERGY STAR rated windows. (?% reduction)
Red₄ = Residential buildings meet or exceed ENERGY STAR rated heating and cooling units. (5% reduction)

Red₅ = Plant shade trees around main buildings to reduce direct sunlight into the structures (?% reduction)

Land Use Type	Y _{UA} , tons/yr	Red ₁	Red ₂	Red ₃	Red ₄	Red₅	Y _{MA} , tons/yr
SF Residential	3.10E-03	0.00059	0.000	0.000	0.000	0.000	0.00
MF Residential	2.08E-02	0.00396	0.000	0.000	0.000	0.000	0.02
Food Store	0.00E+00	0.00000	0.000			0.000	0.00
Restaurant	0.00E+00	0.00000	0.000			0.000	0.00
Hospitals	0.00E+00	0.00000	0.000			0.000	0.00
Retail	1.56E-03	0.00008	0.000			0.000	0.00
Commercial	0.00E+00	0.00000	0.000			0.000	0.00
College/University	0.00E+00	0.00000	0.000			0.000	0.00
High school	0.00E+00	0.00000	0.000			0.000	0.00
Elementary School	0.00E+00	0.00000	0.000			0.000	0.00
Office	0.00E+00	0.00000	0.000			0.000	0.00
Hotel/Motel	0.00E+00	0.00000	0.000			0.000	0.00
Warehouse	0.00E+00	0.00000	0.000			0.000	0.00
Open Space	0.00E+00	0.00000	0.000			0.000	0.00
						Total, tons/yr	0.02087
			•	•	Reduction	percentage, %	18.16

B1. Electricity

Emissions of nitrous oxide from electricity usage are calculated using the following equation:

 Y_{MA} = mitigated annual emissions of nitrous oxide from electricity usage, tons/yr.

Y_{IIA} = unmitigated annual emissions of nitrous oxide from electricity usage, tons/yr.

Y_{UA} = unmitigated annual emissions of nitrous oxide from electricity usage, tons/yr.

Red1 = Title 24 reduction proportion, (URBEMIS 2007 9.2.2 output file). 'Note if mitigated in Urbemis, do not add mitigation here for it.

Red2 = Proposed residential buildings meet or exceeds the performance of an energy star labeled home (5% reduction) RESIDENTIAL ONLY

Red3 = Residential buildings meet or exceed Energy Star rated light fixtures ('7% reduction)

Red4 = Residential buildings meet or exceed Energy Star rated appliances ('7% reduction)

Red5 = Installation and operation of renewable electric generation systems ('7% reduction)

Red6 = Installation and operation of energy efficient domestic hot water systems (5% reduction)

Red7 = All lighting is fluorescent: Non-Residential Land Uses ('7% reduction)

Red8 = Reduction from use of solar panels

Land Use Type	Y _{UA} , tons/yr	Red₁	Red ₂	Red ₃	Red₄	Red₅	Red ₆	Red ₇	Red ₈	Y _{MA} , tons/yr
Residential	0.04242	0.00806	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.03
Food Store	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Restaurant	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Hospitals	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Retail	0.01009	0.00000				0.000	0.000	0.000	0.000	0.01
College/University	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
High school	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Elementary School	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Office	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Hotel/Motel	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Warehouse	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
Open Space	0.00000	0.00000				0.000	0.000	0.000	0.000	0.00
								Total mitigated	tons per year	0.04215
								Reduction p	ercentage, %	19.73

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Emissions of methane from potable water treatment and transportation for domestic use are calculated using the following equation:

 $\mathsf{Y}_{\mathsf{MA}} = (\mathsf{Y}_{\mathsf{UA}})^*(1\text{-}(\mathsf{Red}_1\text{+}\mathsf{Red}_2))$

Y_{MA} = mitigated annual emissions of nitrous oxide from electricity used for potable water treatment and transportation, tons/yr.

Y_{UA} = unmitigated annual emissions of nitrous oxide from electricity used for potable water treatment and transportation, tons/yr

Red, = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential. Red₂ = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).

Red₃ = Incorporate water-efficient irrigation controls (?% reduction)

Red, = Use reclaimed water for landscape irrigation (?% reduction)

Red₅ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (?% reduction)

Land Use Type	YUA, tons/yr	Red₁	Red ₂	Red ₃	Red₄	Red₅	Y _{MA} , tons/yr
SF Residential	0.00054	0.00018	0.000	0.000	0.000	0.000	0.00
MF Residential	0.06744	0.02242	0.001	0.008	0.000	0.001	0.03
Food Store	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Restaurant	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Hospitals	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Retail	0.70245	0.13768	0.009	0.062	0.000	0.008	0.48
Commercial	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
College/University	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
High school	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Elementary School	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Office	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Hotel/Motel	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Warehouse	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
Open Space	0.00000	0.00000	0.000	0.000	0.000	0.000	0.00
					Total mitigated	tons per year	0.5194952
					Reduction p	ercentage, %	32.57

* Red₂ = low flush toilet reduction proportion based on the ratio between the daily water saving of 22 gals per household and the daily water usage of 700 gals per household.

B3. Solid Waste

B3a. Exhaust Emissions (Hauling Trucks)

Emissions of nitrous oxide from solid waste transportation are not reduced by any mitigation measures; therefore, emissions of nitrous oxide from solid waste transportation equal to 0.002008954 tons/yr.

B3b. Exhaust Emissions (Disposal Equipment)

Emissions of nitrous oxide from solid waste disposal are not reduced by any mitigation measures; therefore, emissions of nitrous oxide from solid waste disposal equal to 0.93 tons/yr.

Emissions of nitrous oxide from waste water treatment are calculated using the following equation:

$$\mathsf{Y}_{\mathsf{MA1}} = (\mathsf{Y}_{\mathsf{MA2}})^{\star}(\mathsf{R}_{\mathsf{W}})$$

Y_{MA1} = mitigated annual emissions of nitrous oxide from waste water treatment, tons/yr.

Y_{MA2} = mitigated annual emissions of nitrous oxide from electricity used for potable water treatment and transportation, tons/yr.

Red₁ = xeriscape landscaping reduction proportion, 0.35 (California Integrated Waste Management Board, Publication No. 442-96-033, 1996) for single family residential.

Red₂ = low flush toilet reduction proportion, 0.03 (Riverside Public Utilities, Engineering Data).

Red₃ = Includes measures to be water-efficient (water-efficient fixtures & appliances) (3% reduction)

Y _{UM1} , tons/yr	Red ₁	Red ₂	Red ₃	Y _{MA} , tons/yr
0.43	0.15	0.00	0.01	0.27
	•		Reduction percentage, %	36.9689150

C. Summary Table

	Source Type	Emissions, tons/yr	GWP tons/yr
	Construction equipment	0.00	0.68
Direct	Motor vehicles	9.91	3072.10
Direct	Landscape equipment	7.40E-04	0.23
	Cooling and heating	2.09E-02	6.47
	Total direct, tons/yr	9.93	
	Electricity	0.04	13.07
Indirect	Potable water	0.52	161.04
maneci	Solid waste	0.93	288.38
	Wastewater	0.27	84.30
	Total indirect, tons/yr	1.76	
	Total, tons/yr	11.70	
	Reduction percentage, %	20.13	
	Global warming potential index	310	
	Global warming potential, tons/vr	3.626.28	3626.28