

PROPOSED PROJECT
Greenhouse Gas Emissions

1) OPERATIONAL EMISSIONS

Electricity Consumption	Units	kWH	Project Usage
Residences	418	7000 per unit	2926000

Total Project Annual kWH	2926000		
Project Annual mWH	2926		

Emission Factors	
CO2	724.12 lbs/mWH/year
CH4	0.0302 lbs/mWH/year
N2O	0.0081 lbs/mWH/year

Variables	Variable	Units
Total Annual Emissions	T	metric tons/year
Electricity Usage	E	mWH
Emission Factors	F	lbs/mWH/year

Constants	
Metric Tons	2204.623 lbs

Equation
T=(EF)/2204.62

CO2 Area Source (URBEMIS)	8175 lbs/day
CO2 Area Source MT/yr	1354.39

Annual Operational Emissions	Emissions	Units	CO2E Factor	CO2E Emissions
CO2, electricity	961.0602	metric tons/year	1	961.060229
CO2, URBEMIS	1354.39	metric tons/year	1	1354.389964
CH4	0.040082	metric tons/year	21	0.841717391
N2O	0.01075	metric tons/year	310	3.332627513
	PROJECT TOTAL			2319.624537

CO2 TOTAL 2315.45

2) MOBILE EMISSIONS

Variables	
URBEMIS Trips/Day	4000.26
URBEMIS Miles/Day	20801
Miles/Year	7597565
Metric Tons/Gallon	0.000001

Urbemis CO2 Operational

3447.42 tons/year

3127.446819 metric tons/year

Vehicle Type	Percent	CH4 (g/mi)		N2O (g/mi0)	
		Factor	MT/year Emissions	Factor	MT/year Emissions
Light Auto	41.60%	0.04	0.126423486	0.04	0.126423
Light Truck <3750 lbs	18.80%	0.05	0.071417113	0.06	0.085701
Light Truck 3751-5750 lbs	19.90%	0.05	0.075595774	0.06	0.090715
Med Truck 5751-8500 lbs	8.00%	0.12	0.072936626	0.2	0.121561
Lite-Heavy Truck 8501-10000 lbs	2.10%	0.12	0.019145864	0.2	0.03191
Lite-Heavy Truck 10001-14000 lbs	1.20%	0.09	0.00820537	0.125	0.011396
Med-Heavy Truck 14001-33000 lbs	1.00%	0.06	0.004558539	0.05	0.003799
Heavy-Heavy Truck 33001-60000	0.30%	0.06	0.001367562	0.05	0.00114
Other Bus	0.10%	0.06	0.000455854	0.05	0.00038
Urban Bus	0.00%	0.06	0	0.05	0
Motorcycle	5.20%	0.09	0.035556605	0.01	0.003951
School Bus	0.10%	0.06	0.000455854	0.05	0.00038
Motor Home	1.70%	0.09	0.011624275	0.125	0.016145
TOTAL			0.427742924		0.4935

Annual Mobile Emissions	Emissions Units	CO2E Factor	CO2E Emissions
CO2	3127.447 metric tons/year	1	3127.446819
CH4	0.427743 metric tons/year	21	8.982601395
N2O	0.4935 metric tons/year	310	152.9849538
	PROJECT TOTAL		3289.414374

3) CONSTRUCTION PHASE

20 Year Buildout Estimate

Total Construction Emissions	662.65 tons	601.1459685 metric tons
Project Lifetime	20 years	
Annual Emissions	30.0573 metric tons/year	

5 Year Buildout Estimate

Total Construction Emissions	662.65 tons	601.1459685 metric tons
Project Lifetime	5 years	
Annual Emissions	120.2292 metric tons/year	

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Virtual Project Files\General Plan Amendments\2008-2009FY\LRP2008-00010 COUNTY (Ag Cluster Amend)\Environmental Determination\Draft EIR\Air Quality Analysis\Ag Cluster GHG - Proposed Ord.urb924

Project Name: SLO County Ag Cluster Ord - Proposed Ord

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	0.14	1.09	0.56	0.00	8.01	0.05	8.06	1.67	0.05	1.72	109.27
2012 TOTALS (tons/year unmitigated)	7.09	2.73	5.11	0.00	2.80	0.16	2.96	0.59	0.14	0.73	553.38

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	6.06	1.18	13.06	0.03	1.57	1.51	1,492.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4.94	6.12	53.18	0.03	6.54	1.26	3,447.42

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	11.00	7.30	66.24	0.06	8.11	2.77	4,939.43

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 34.83

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

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

Phase: Architectural Coating 8/8/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

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

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

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.07	0.96	0.41	0.00	0.00	0.00	1,220.25
Hearth	1.05	0.19	9.57	0.03	1.56	1.50	266.82
Landscape	0.56	0.03	3.08	0.00	0.01	0.01	4.94
Consumer Products	3.73						
Architectural Coatings	0.65						
TOTALS (tons/year, unmitigated)	6.06	1.18	13.06	0.03	1.57	1.51	1,492.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	4.94	6.12	53.18	0.03	6.54	1.26	3,447.42
TOTALS (tons/year, unmitigated)	4.94	6.12	53.18	0.03	6.54	1.26	3,447.42

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Summary of Land Uses

Land Use Type	Acres	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	139.33	9.57 dwelling units		418.00	4,000.26	20,801.35
					4,000.26	20,801.35

Vehicle Fleet Mix

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	41.6	1.0	98.5	0.5
Light Truck < 3750 lbs	18.8	2.1	91.5	6.4
Light Truck 3751-5750 lbs	19.9	0.5	99.0	0.5
Med Truck 5751-8500 lbs	8.0	1.2	98.8	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.2	57.7	42.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.2	11.8

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.2	5.2	5.2	5.2	5.2	5.2
Rural Trip Length (miles)	5.2	5.2	5.2	5.2	5.2	5.2
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

ALTERNATIVE 2A

Greenhouse Gas Emissions

1) OPERATIONAL EMISSIONS

Electricity Consumption	Units	kWH	Project Usage
Residences	212	7000 per unit	1484000

Total Project Annual kWH	1484000
Project Annual mWH	1484

Emission Factors

CO2	724.12 lbs/mWH/year
CH4	0.0302 lbs/mWH/year
N2O	0.0081 lbs/mWH/year

Variables

Variable	Units
Total Annual Emissions	T metric tons/year
Electricity Usage	E mWH
Emission Factors	F lbs/mWH/year

Constants

Metric Tons	2204.623 lbs
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Equation

$T = (EF) / 2204.62$

CO2 Area Source (URBEMIS)	4146.57 lbs/day
CO2 Area Source MT/yr	686.9814

Annual Operational Emissions

Emissions	Units	CO2E Factor	CO2E Emissions
CO2, electricity	487.4277 metric tons/yea	1	487.4276759
CO2, URBEMIS	686.9814 metric tons/yea	1	686.9813812
CH4	0.020329 metric tons/yea	21	0.426899729
N2O	0.005452 metric tons/yea	310	1.690232136
PROJECT TOTAL			1176.526189

CO2 TOTAL	1174.409
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2) MOBILE EMISSIONS

Variables

URBEMIS Trips/Day	2028.84	
URBEMIS Miles/Day	4463.45	
Miles/Year	1630275	
Metric Tons/Gallon	0.000001	
Urbemis CO2 Operational	792.56 tons/year	718.9983381 metric tons/year

Vehicle Type	CH4 (g/mi)		N2O (g/mi0)	
	Percent	Factor	MT/year Emissions	MT/year Emissions
Light Auto	41.60%	0.04	0.027127778	0.04 0.027128
Light Truck <3750 lbs	18.80%	0.05	0.015324586	0.06 0.01839
Light Truck 3751-5750 lbs	19.90%	0.05	0.016221237	0.06 0.019465
Med Truck 5751-8500 lbs	8.00%	0.12	0.015650641	0.2 0.026084
Lite-Heavy Truck 8501-10000 lbs	2.10%	0.12	0.004108293	0.2 0.006847
Lite-Heavy Truck 10001-14000 lbs	1.20%	0.09	0.001760697	0.125 0.002445
Med-Heavy Truck 14001-33000 lbs	1.00%	0.06	0.000978165	0.05 0.000815
Heavy-Heavy Truck 33001-60000	0.30%	0.06	0.00029345	0.05 0.000245
Other Bus	0.10%	0.06	9.78165E-05	0.05 8.15E-05
Urban Bus	0.00%	0.06	0	0.05 0
Motorcycle	5.20%	0.09	0.007629688	0.01 0.000848
School Bus	0.10%	0.06	9.78165E-05	0.05 8.15E-05
Motor Home	1.70%	0.09	0.002494321	0.125 0.003464
TOTAL			0.091784489	0.105895

Annual Mobile Emissions	Emissions Units	CO2E Factor	CO2E Emissions
CO2	718.9983 metric tons/yea	1	718.9983381
CH4	0.091784 metric tons/yea	21	1.927474266
N2O	0.105895 metric tons/yea	310	32.82730118
	PROJECT TOTAL		753.7531136

3) CONSTRUCTION PHASE

20 Year Buildout Estimate

Total Construction Emissions	329.19 tons	298.6361448 metric tons
Project Lifetime	20 years	
Annual Emissions	14.93181 metric tons/year	

5 Year Buildout Estimate

Total Construction Emissions	329.19 tons	298.6361448 metric tons
Project Lifetime	5 years	
Annual Emissions	59.72723 metric tons/year	

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Virtual Project Files\General Plan Amendments\2008-2009\FYLRP2008-00010 COUNTY (Ag Cluster Amend)\Environmental
Determination\Draft EIR\Air Quality Analysis\Ag Cluster GHG - Proposed Ord.urb924

Project Name: SLO County Ag Cluster Ord - Proposed Ord

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.07	0.50	0.29	0.00	4.06	0.03	4.09	0.85	0.03	0.88	48.85
2012 TOTALS (tons/year unmitigated)	3.72	2.02	2.44	0.00	1.42	0.13	1.55	0.30	0.12	0.42	280.34

AREA SOURCE EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	3.07	0.60	6.63	0.02	0.79	0.76	756.72

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.71	1.63	15.80	0.01	1.41	0.28	792.56

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	4.78	2.23	22.43	0.03	2.20	1.04	1,549.28

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
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2012	3.72	2.02	2.44	0.00	1.42	0.13	1.55	0.30	0.12	0.42	280.34
Asphalt 12/28/2011-01/11/2012	0.03	0.08	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	7.50
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	5.09
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Fine Grading 11/30/2011-01/11/2012	0.02	0.15	0.09	0.00	1.41	0.01	1.42	0.30	0.01	0.30	16.01
Fine Grading Dust	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.30	0.00	0.30	0.00
Fine Grading Off Road Diesel	0.02	0.15	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.86
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Building 01/11/2012-08/22/2012	0.36	1.79	2.28	0.00	0.00	0.12	0.12	0.00	0.11	0.11	255.39
Building Off Road Diesel	0.28	1.64	1.10	0.00	0.00	0.11	0.11	0.00	0.11	0.11	181.87
Building Vendor Trips	0.01	0.08	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.58
Building Worker Trips	0.07	0.07	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.94
Coating 08/08/2012-09/05/2012	3.31	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44
Architectural Coating	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description
 Total Acres Disturbed: 70.67
 Maximum Daily Acreage Disturbed: 17.67
 Fugitive Dust Level of Detail: Default
 20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 17.67

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

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

Phase: Architectural Coating 8/8/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

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

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

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.04	0.48	0.21	0.00	0.00	0.00	618.89
Hearth	0.53	0.10	4.86	0.02	0.79	0.76	135.32
Landscape	0.28	0.02	1.56	0.00	0.00	0.00	2.51
Consumer Products	1.89						
Architectural Coatings	0.33						
TOTALS (tons/year, unmitigated)	3.07	0.60	6.63	0.02	0.79	0.76	756.72

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Single family housing	1.71	1.63	15.80	0.01	1.41	0.28	792.56
TOTALS (tons/year, unmitigated)	1.71	1.63	15.80	0.01	1.41	0.28	792.56

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	2.2	2.2	2.2	2.2	2.2	2.2
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

ALTERNATIVE 2B

Greenhouse Gas Emissions

1) OPERATIONAL EMISSIONS

Electricity Consumption	Units	kWH	Project Usage
Residences	279	7000 per unit	1953000

Total Project Annual kWH	1953000		
Project Annual mWH	1953		

Emission Factors	
CO2	724.12 lbs/mWH/year
CH4	0.0302 lbs/mWH/year
N2O	0.0081 lbs/mWH/year

Variables	Variable	Units
Total Annual Emissions	T	metric tons/year
Electricity Usage	E	mWH
Emission Factors	F	lbs/mWH/year

Constants	
Metric Tons	2204.623 lbs

Equation
 $T=(EF)/2204.62$

CO2 Area Source (URBEMIS)	5456.82 lbs/day
CO2 Area Source MT/yr	904.0565

Annual Operational Emissions	Emissions	Units	CO2E Factor	CO2E Emissions
CO2, electricity	641.4732	metric tons/yea	1	641.473215
CO2, URBEMIS	904.0565	metric tons/yea	1	904.0565432
CH4	0.026753	metric tons/yea	21	0.561816153
N2O	0.007176	metric tons/yea	310	2.224409273
	PROJECT TOTAL			1548.315984

CO2 TOTAL 1545.53

2) MOBILE EMISSIONS

Variables		
URBEMIS Trips/Day	2670.03	
URBEMIS Miles/Day	5874.07	
Miles/Year	2145504	
Metric Tons/Gallon	0.000001	
Urbemis CO2 Operational	1043.03 tons/year	946.2209002 metric tons/year

Vehicle Type	Percent	CH4 (g/mi)	MT/year	N2O (g/mi0)	MT/year
		Factor	Emissions	Factor	Emissions
Light Auto	41.60%	0.04	0.035701188	0.04	0.035701
Light Truck <3750 lbs	18.80%	0.05	0.020167738	0.06	0.024201
Light Truck 3751-5750 lbs	19.90%	0.05	0.021347765	0.06	0.025617
Med Truck 5751-8500 lbs	8.00%	0.12	0.020596839	0.2	0.034328
Lite-Heavy Truck 8501-10000 lbs	2.10%	0.12	0.00540667	0.2	0.009011
Lite-Heavy Truck 10001-14000 lbs	1.20%	0.09	0.002317144	0.125	0.003218
Med-Heavy Truck 14001-33000 lbs	1.00%	0.06	0.001287302	0.05	0.001073
Heavy-Heavy Truck 33001-60000	0.30%	0.06	0.000386191	0.05	0.000322
Other Bus	0.10%	0.06	0.00012873	0.05	0.000107
Urban Bus	0.00%	0.06	0	0.05	0
Motorcycle	5.20%	0.09	0.010040959	0.01	0.001116
School Bus	0.10%	0.06	0.00012873	0.05	0.000107
Motor Home	1.70%	0.09	0.003282621	0.125	0.004559
TOTAL			0.120791879		0.139361

Annual Mobile Emissions	Emissions Units	CO2E Factor	CO2E Emissions
CO2	946.2209 metric tons/yea	1	946.2209002
CH4	0.120792 metric tons/yea	21	2.536629459
N2O	0.139361 metric tons/yea	310	43.20197718
	PROJECT TOTAL		991.9595068

3) CONSTRUCTION PHASE

20 Year Buildout Estimate

Total Construction Emissions	404.46 tons	366.9199402 metric tons
Project Lifetime	20 years	
Annual Emissions	18.346 metric tons/year	

5 Year Buildout Estimate

Total Construction Emissions	404.46 tons	366.9199402 metric tons
Project Lifetime	5 years	
Annual Emissions	73.38399 metric tons/year	

5-Year Buildout

CO2
CH4
N2O

20-Year Buildout

CO2
CH4
N2O

AMORTIZATIONS

TOTAL

20 Yr

OP	CO2	2315.450193	115.7725096
	CH4	0.841717391	0.04208587
	N2O	3.332627513	0.166631376
MOB	CO2	3127.446819	156.3723409
	CH4	8.982601395	0.44913007
	N2O	152.9849538	7.649247688

20 Year

CO2

OP

MOB

CSTR

	OP	MOB	CSTR
2011	0	0	0
2012	115.7725096	156.3723409	30.05729842
2013	231.5450193	312.7446819	30.05729842
2014	347.3175289	469.1170228	30.05729842
2015	463.0900385	625.4893638	30.05729842
2016	578.8625481	781.8617047	30.05729842
2017	694.6350578	938.2340457	30.05729842
2018	810.4075674	1094.606387	30.05729842
2019	926.180077	1250.978728	30.05729842
2020	1041.952587	1407.351069	30.05729842
2021	1157.725096	1563.723409	30.05729842
2022	1273.497606	1720.09575	30.05729842
2023	1389.270116	1876.468091	30.05729842
2024	1505.042625	2032.840432	30.05729842
2025	1620.815135	2189.212773	30.05729842
2026	1736.587644	2345.585114	30.05729842
2027	1852.360154	2501.957455	30.05729842
2028	1968.132664	2658.329796	30.05729842
2029	2083.905173	2814.702137	30.05729842
2030	2199.677683	2971.074478	30.05729842
2031	2315.450193	3127.446819	30.05729842

5 yr average

20 yr average

min

max

Now

5 Year Average

Baseline

Baseline

Baseline

Baseline

Baseline

Baseline

5 Yr

463.0900385

0.168343478

0.666525503

625.4893638

1.796520279

30.59699075

CO2 TOTAL	CH4 OP	MOB	CH4 TOTAL	N2O OP
0	0	0	0	0
302.202149	0.04208587	0.44913007	0.491215939	0.166631376
574.3469996	0.084171739	0.89826014	0.982431879	0.333262751
846.4918502	0.126257609	1.347390209	1.473647818	0.499894127
1118.636701	0.168343478	1.796520279	1.964863757	0.666525503
1390.781551	0.210429348	2.245650349	2.456079697	0.833156878
1662.926402	0.252515217	2.694780419	2.947295636	0.999788254
1935.071252	0.294601087	3.143910488	3.438511575	1.16641963
2207.216103	0.336686956	3.593040558	3.929727514	1.333051005
2479.360954	0.378772826	4.042170628	4.420943454	1.499682381
2751.505804	0.420858696	4.491300698	4.912159393	1.666313757
3023.650655	0.462944565	4.940430767	5.403375332	1.832945132
3295.795505	0.505030435	5.389560837	5.894591272	1.999576508
3567.940356	0.547116304	5.838690907	6.385807211	2.166207884
3840.085207	0.589202174	6.287820977	6.87702315	2.332839259
4112.230057	0.631288043	6.736951046	7.36823909	2.499470635
4384.374908	0.673373913	7.186081116	7.859455029	2.666102011
4656.519758	0.715459782	7.635211186	8.350670968	2.832733386
4928.664609	0.757545652	8.084341256	8.841886908	2.999364762
5200.809459	0.799631522	8.533471325	9.333102847	3.165996138
5472.95431	0.841717391	8.982601395	9.824318786	3.332627513
846.4918502			1.473647818	
2887.578229			5.157767363	
302.202149			0.491215939	
5472.95431			9.824318786	

Fifth Year

5 Year					
MOB	N2O TOTAL	CO2	MOB	CSTR	
	0	OP	0	0	0
	7.649247688	7.815879063	463.0900385	625.4893638	120.2291937
	15.29849538	15.63175813	926.180077	1250.978728	120.2291937
	22.94774306	23.44763719	1389.270116	1876.468091	120.2291937
	30.59699075	31.26351625	1852.360154	2501.957455	120.2291937
	38.24623844	39.07939532	2315.450193	3127.446819	120.2291937
	45.89548613	46.89527438	2315.450193	3127.446819	0
	53.54473381	54.71115344	2315.450193	3127.446819	0
	61.1939815	62.52703251	2315.450193	3127.446819	0
	68.84322919	70.34291157	2315.450193	3127.446819	0
	76.49247688	78.15879063	2315.450193	3127.446819	0
	84.14172456	85.9746697	2315.450193	3127.446819	0
	91.79097225	93.79054876	2315.450193	3127.446819	0
	99.44021994	101.6064278	2315.450193	3127.446819	0
	107.0894676	109.4223069	2315.450193	3127.446819	0
	114.7387153	117.2381859	2315.450193	3127.446819	0
	122.387963	125.054065	2315.450193	3127.446819	0
	130.0372107	132.8699441	2315.450193	3127.446819	0
	137.6864584	140.6858231	2315.450193	3127.446819	0
	145.3357061	148.5017022	2315.450193	3127.446819	0
	152.9849538	156.3175813	2315.450193	3127.446819	0
		23.44763719			
		82.06673016			
		7.815879063			
		156.3175813			

20 Year Average

20th Year

CO2 TOTAL	CH4 OP	MOB	CH4 TOTAL	N2O OP
0	0	0	0	0
1208.808596	0.168343478	1.796520279	1.964863757	0.666525503
2297.387998	0.336686956	3.593040558	3.929727514	1.333051005
3385.967401	0.505030435	5.389560837	5.894591272	1.999576508
4474.546803	0.673373913	7.186081116	7.859455029	2.666102011
5563.126205	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
5442.897012	0.841717391	8.982601395	9.824318786	3.332627513
3385.967401			5.894591272	
4928.664609			8.841886908	
1208.808596			1.964863757	
5563.126205			9.824318786	

Buildout

MOB	N2O TOTAL		ALL TOTAL	
	0	0	20	5
30.59699075	31.26352		310.509244	1242.037
61.1939815	62.52703		590.96119	2363.845
91.79097225	93.79055		871.413135	3485.653
122.387963	125.0541		1151.86508	4607.46
152.9849538	156.3176		1432.31703	5729.268
152.9849538	156.3176		1712.76897	5609.039
152.9849538	156.3176		1993.22092	5609.039
152.9849538	156.3176		2273.67286	5609.039
152.9849538	156.3176		2554.12481	5609.039
152.9849538	156.3176		2834.57675	5609.039
152.9849538	156.3176		3115.0287	5609.039
152.9849538	156.3176		3395.48065	5609.039
152.9849538	156.3176		3675.93259	5609.039
152.9849538	156.3176		3956.38454	5609.039
152.9849538	156.3176		4236.83648	5609.039
152.9849538	156.3176		4517.28843	5609.039
152.9849538	156.3176		4797.74037	5609.039
152.9849538	156.3176		5078.19232	5609.039
152.9849538	156.3176		5358.64426	5609.039
152.9849538	156.3176		5639.09621	5609.039
	93.79055		871.413135	3485.653
	140.6858		2974.80273	5078.192
	31.26352		310.509244	1242.037
	156.3176		5639.09621	5729.268

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Virtual Project Files\General Plan Amendments\2008-2009FYL RP2008-00010 COUNTY (Ag Cluster Amend)\Environmental
Determination\Draft EIR\Air Quality Analysis\Ag Cluster GHG - Proposed Ord.urb924

Project Name: SLO County Ag Cluster Ord - Proposed Ord

Project Location: San Luis Obispo County APCD

On-Road Vehicle Emissions Based on: Version : Emtfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.11	0.88	0.46	0.00	5.35	0.04	5.39	1.12	0.04	1.16	86.65
2012 TOTALS (tons/year unmitigated)	4.80	2.20	2.88	0.00	1.86	0.14	2.00	0.39	0.13	0.52	317.81

AREA SOURCE EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	4.04	0.79	8.72	0.02	1.05	1.01	995.87

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.25	2.14	20.80	0.01	1.86	0.36	1,043.03

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOX	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	6.29	2.93	29.52	0.03	2.91	1.37	2,038.90

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOX	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
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7/11/2011 3:37:53 PM

2012	4.80	2.20	2.88	0.00	1.86	0.14	2.00	0.39	0.13	0.52	317.81
Asphalt 12/28/2011-01/11/2012	0.03	0.08	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	8.22
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.01	5.09
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Fine Grading 11/30/2011-01/11/2012	0.03	0.27	0.15	0.00	1.86	0.01	1.87	0.39	0.01	0.40	29.07
Fine Grading Dust	0.00	0.00	0.00	0.00	1.86	0.00	1.86	0.39	0.00	0.39	0.00
Fine Grading Off Road Diesel	0.03	0.27	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	28.87
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Building 01/11/2012-08/22/2012	0.38	1.84	2.65	0.00	0.00	0.12	0.13	0.00	0.11	0.11	278.63
Building Off Road Diesel	0.28	1.64	1.10	0.00	0.00	0.11	0.11	0.00	0.11	0.11	181.87
Building Vendor Trips	0.01	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.46
Building Worker Trips	0.09	0.09	1.44	0.00	0.00	0.00	0.01	0.00	0.00	0.00	72.30
Coating 08/08/2012-09/05/2012	4.36	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Architectural Coating	4.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89

Phase Assumptions

Phase: Fine Grading 11/30/2011 - 1/11/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 93

Maximum Daily Acreage Disturbed: 23.25

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

7/11/2011 3:37:53 PM

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2011 - 1/11/2012 - Default Paving Description

Acres to be Paved: 23.25

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/11/2012 - 8/22/2012 - Default Building Construction Description

Off-Road Equipment:

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

Phase: Architectural Coating 8/8/2012 - 9/5/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150

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

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

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.05	0.64	0.27	0.00	0.00	0.00	814.48
Hearth	0.70	0.13	6.39	0.02	1.04	1.00	178.09
Landscape	0.37	0.02	2.06	0.00	0.01	0.01	3.30
Consumer Products	2.49						
Architectural Coatings	0.43						
TOTALS (tons/year, unmitigated)	4.04	0.79	8.72	0.02	1.05	1.01	995.87

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Single family housing	2.25	2.14	20.80	0.01	1.86	0.36	1,043.03
TOTALS (tons/year, unmitigated)	2.25	2.14	20.80	0.01	1.86	0.36	1,043.03

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	93.00	9.57 dwelling units		279.00	2,670.03	5,874.07
					2,670.03	5,874.07

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	41.6	1.0	98.5	0.5
Light Truck < 3750 lbs	18.8	2.1	91.5	6.4
Light Truck 3751-5750 lbs	19.9	0.5	99.0	0.5
Med Truck 5751-8500 lbs	8.0	1.2	98.8	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	71.4	28.6
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.2	57.7	42.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.2	11.8

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	2.2	2.2	2.2	2.2	2.2	2.2
Rural Trip Length (miles)	2.2	2.2	2.2	2.2	2.2	2.2
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)