

Appendix F  
Climate Change URBEMIS Models  
and Calculations



## Area Source

Baseline is currently: OFF

Unmitigated Area Source			Project-Baseline
	Project	Baseline	
Landscaping Emissions from URBEMIS (CO2 metric tons/year):	1.143	0.000	
Hearth Emissions from URBEMIS (CO2 metric tons/year):	0.000	0.000	
Wood Burning Fireplaces (N2O metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (N2O metric tons/year):	0.000	0.000	
Wood Burning Stoves (CH4 metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (CH4 metric tons/year):	0.000	0.000	
Total (CO2e metric tons/year):	1.143	0.000	
Total (CO2e metric tons/year):			<b>1.143</b>

The URBEMIS area source calculations include five separate categories: 1) natural gas fuel combustion, 2) hearth fuel combustion, 3) landscape maintenance equipment, 4) consumer products, and 5) architectural coatings. BGM then calculates CO2 emissions for hearths and landscape maintenance equipment only. BGM then calculates natural gas use and the resulting CO2 emissions in the Electricity and Natural Gas tab. Instead, BGM calculates natural gas use and the resulting CO2 emissions in the Electricity and Natural Gas tab.



<b>Mitigated Area Source</b>			<b>Project-Baseline</b>
	<b>Project</b>	<b>Baseline</b>	
Landscaping Emissions from URBEMIS (CO2 metric tons/year):	1.143	0.000	
Hearth Emissions from URBEMIS (CO2 metric tons/year):	0.000	0.000	
Wood Burning Fireplaces (N2O metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (N2O metric tons/year):	0.000	0.000	
Wood Burning Stoves (CH4 metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (CH4 metric tons/year):	0.000	0.000	
Total (CO2e metric tons/year):	1.143	0.000	
Total (CO2e metric tons/year):			<b>1.143</b>

stion, 3) landscape maintenance equipment, 4) consumer products, and 5) architectural coatings. This Area Source  
lates N2O and CH4 emissions for woodstoves and fireplaces and uses the resulting emissions to calculate CO2e. The  
, are not used by BGM. Also, URBEMIS' estimate of CO2 from natural gas fuel combustion is not used by BGM.

# Electricity and Natural Gas

Baseline is currently: OFF

Unmitigated Electricity			
	Project	Baseline	Project-Baseline
CO2 metric tons/year CO2:	4,341.612	0.000	
CH4 metric tons/year CH4:	0.036	0.000	
N2O metric tons/year:	0.020	0.000	
CO2e metric tons/year:	4,348.561	0.000	
CO2e metric tons/year:			<b>4,348.56</b>

Unmitigated Natural Gas			
	Project	Baseline	Project-Baseline
CO2 metric tons/year:	1094.39	0.000	
CH4 metric tons/year:	0.10	0.000	
N2O metric tons/year:	0.00	0.000	
CO2e metric tons/year:	1097.20	0.000	
CO2e metric tons/year:			<b>1,097.20</b>

Project Climate Zone Location:  Zone 4  Zone 5



<b>Mitigated Electricity</b>			
	<b>Project</b>	<b>Baseline</b>	<b>Project-Baseline</b>
CO2 metric tons/year CO2:	2,862.053	0.000	
CH4 metric tons/year CH4:	0.024	0.000	
N2O metric tons/year:	0.013	0.000	
CO2e metric tons/year:	2,866.633	0.000	
CO2e metric tons/year:			<b>2,866.63</b>

<b>Mitigated Natural Gas</b>			
	<b>Project</b>	<b>Baseline</b>	<b>Project-Baseline</b>
CO2 metric tons/year:	809.927	0.000	
CH4 metric tons/year:	0.076	0.000	
N2O metric tons/year:	0.002	0.000	
CO2e metric tons/year:	812.003	0.000	
CO2e metric tons/year:			<b>812.00</b>

\*\*\* Select Mitigation Measures on the Mitigation Tab ==>

[Mitigation](#)



Mitigated Water and Wastewater Emissions

## Water and Wastewater

Baseline is currently: OFF

Unmitigated Water and Wastewater			
	Project	Baseline	Project-Baseline
CO2 metric tons/year:	62.5616	0.0000	
CH4 metric tons/year:	0.0005	0.0000	
N2O metric tons/year:	0.0003	0.0000	
CO2e metric tons/year:	62.6617	0.0000	
CO2e metric tons/year:			<b>62.66</b>

Clear All User Overrides

	User Override of Model Estimates (af/yr)	Model Estimate (af/yr)	Total Gallons/year	Indoor Gallons/Year
Baseline Water Demand		0.00	0	0.00
Project Water Demand	112.00	174.80	56,966,628	35,633,608.18
Net Increase in Water Demand		174.80	56,966,628	35,633,608.18

# Mitigation

## Mitigation Category

Mitigation Category	Check=On	Mitigation Options	MMBtu/year Reduced		
	Electricity & Natural Gas	<input type="checkbox"/>	Solar Water Heater	5000	
<input type="checkbox"/>		Tankless Water Heater	5000		
				kwh/year reduced	MMBtu/year Increased
<input checked="" type="checkbox"/>		Cool Roofs/Green Roofs	109,065	2	
				% Increase In Energy Efficiency	
<input checked="" type="checkbox"/>		Increase Energy Efficiency Beyond Title 24	26		
				kwh/year generated	
<input checked="" type="checkbox"/>		Onsite Renewable Energy Systems - Solar	1189364		
<input type="checkbox"/>		Onsite Renewable Energy Systems - Wind	5000		
<input type="checkbox"/>	Onsite Renewable Energy Systems - Other	5000			
Water and Wastewater	<input type="checkbox"/>	Drought Tolerant Landscaping	10	% Reduction Outdoor Use	
	<input type="checkbox"/>	Low Flush Toilets	54.68	% Reduction Indoor Use	
Solid Waste	<input checked="" type="checkbox"/>	Reduce Solid Waste by the Following Percentage	10	Solid Waste Reduction %	
Refrigerants	<input type="checkbox"/>	Use Ammonia or CFCs or HCFCs	50	% Reduction	
Offsets / Credits	<input type="checkbox"/>	Purchase Emission Offsets / Credits	5000	Metric Tons CO2e/Year	



**Calculations for Mitigation Selections**

	0
	0
	<u>-2</u>
Change in Natural Gas Use (MMBtu/year)	-2
	109065
	1189364
	0
	0
Change in Electricity Use (kwh/year)	1298429
Percentage Reduction in Elec and Nat Gas Use	26
% Reduction Outdoor H2O Use	0
% Reduction Indoor Water Use	0
Solid Waste Reduction %	10
% Reduction in CFC/HCFC Use	0

Baseline is currently: OFF

	Unmitigated Project- Baseline Emissions CO2e/year	Mitigated Project- Baseline Emissions CO2e/year
Transportation	9,484.31	9,484.31
Area Sources	1.14	1.14
Electricity	4,348.56	2,866.63
Natural Gas	1,097.20	812.00
Water and Wastewater	125.88	97.80
Solid Waste	2,337.22	2,103.50
Ag	0.00	0.00
Off-Road Equipment	0.00	0.00
Refrigerants	0.00	0.00
Sequestration	N/A	0.00
Emission Credits	N/A	0.00
Totals	17,394.31	15,365.38



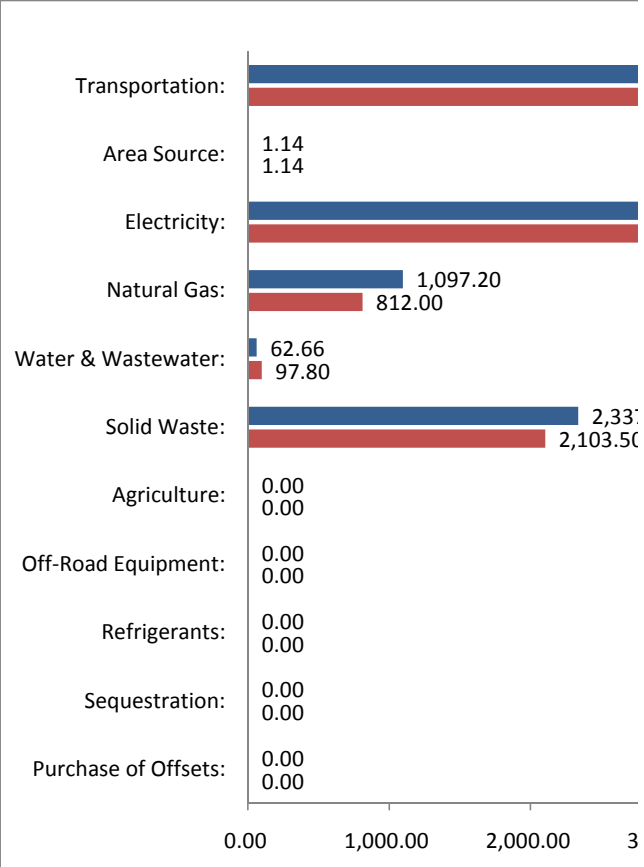




# Summary Results

Project Name: 300 Airport Operational FINAL  
 Project and Baseline Years: 2015 N/A

Results	Unmitigated Project- Baseline CO2e (metric tons/year)	Mitigated Project- Baseline CO2e (metric tons/year)
Transportation:	9,484.31	9,484.31
Area Source:	1.14	1.14
Electricity:	4,348.56	2,866.63
Natural Gas:	1,097.20	812.00
Water & Wastewater:	62.66	97.80
Solid Waste:	2,337.22	2,103.50
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
<b>Total:</b>	<b>17,331.09</b>	<b>15,365.38</b>



Baseline is currently: **OFF**  
 Baseline Project Name:  
 Go to Settings Tab to Turn On Baseline

## Solid Waste

Baseline is currently: OFF

	Unmitigated Solid Waste		
	Project	Baseline	Project - Baseline
Truck Haul CO2 (metric tons/year):	35.92	0.00	
Truck Haul CH4 (metric tons/year):	0.0006	0.0000	
Truck Haul CO2e (metric tons/year):	35.93	0.00	
Landfill Offgasing (CO2e metric tons/year):	2,301.29	0.00	
Total Solid Waste (CO2e metric tons/year):	2,337.22	0.00	
Total Solid Waste (CO2e metric tons/year):			<b>2,337.22</b>

Project Landfill disposal option:

Select 1 of 3 options

- Landfilling only     Landfilling with Flaring to Burn Methane  
 Landfilling with Energy Recovery

Clear All User Overrides

Mitigated Solid Waste			
	Project	Baseline	Project - Baseline
Truck Haul CO2 (metric tons/year):	32.33	0.00	
Truck Haul CH4 (metric tons/year):	0.0005	0.0000	
Truck Haul CO2e (metric tons/year):	32.34	0.00	
Landfill Offgasing (CO2e metric tons/year):	2,071.16	0.00	
Total Solid Waste (CO2e metric tons/year):	2,103.50	0.00	
Total Solid Waste (CO2e metric tons/year):			<b>2,103.50</b>

\*\*\* Select Mitigation Measures on the Mitigation Tab ==>

[Mitigation](#)

Baseline Landfill disposal option:

Select 1 of 3 options

Landfilling only     
 Landfilling with Flaring to Burn Methane  
 Landfilling with Energy Recovery



# Transportation

Baseline is Currently: OFF

Unmitigated Transportation	Target Year:		Project-Baseline
	2015	2011	
	Project	Baseline	
Operational Emissions from URBEMIS (CO2 tons/year)	10,936.05	0.00	
Metric Ton Adjustment (CO2 metric tons/year)	9,923.82	0.00	
Pavley Regulation Adjustment (CO2 metric tons/year):	9,175.25	0.00	
US EPA Adjustment (CO2e metric tons/year):	9,658.15	0.00	
Low Carbon Fuels Rule Adjustment (CO2e metric tons/year)	9,484.31	0.00	
Total (CO2e metric tons/year):			<b>9,484.31</b>

The BGM User's Manual describes in detail each step used to convert URBEMIS's transportation CO2 emissions to total CO2e. These steps include converting from English to Metric units, adjusting for the Pavley Rule, converting CO2 to CO2e, and adjusting for the Low

Reference

U.S. EPA assumption that GHG emissions from other pollutants - CH4, N2O, and hydrofluorcarbons (HFCs) from leaking air conditioners accou

Jump to the Following Transportation Related Tabs:

[Transportation Detail for Operational Mitigation](#)

[Land Use Detail](#)

**Unmitigated Water and Wastewater Emissions**

## Water and Wastewater

Baseline is currently: OFF

<b>Unmitigated Water and Wastewater</b>			
	<b>Project</b>	<b>Baseline</b>	<b>Project-Baseline</b>
CO2 metric tons/year:	125.6817	0.0000	
CH4 metric tons/year:	0.0010	0.0000	
N2O metric tons/year:	0.0006	0.0000	
CO2e metric tons/year:	125.8829	0.0000	
CO2e metric tons/year:			<b>125.88</b>

Clear All User Overrides

	User Override of Model Estimates (af/yr)	Model Estimate (af/yr)	Total Gallons/year	Indoor Gallons/Year
Baseline Water Demand		0.00	0	0.00
Project Water Demand	225.00	174.80	56,966,628	35,633,608.18
Net Increase in Water Demand		174.80	56,966,628	35,633,608.18

## Area Source

Baseline is currently: OFF

Unmitigated Area Source			Project-Baseline
	Project	Baseline	
Landscaping Emissions from URBEMIS (CO2 metric tons/year):	0.227	0.000	
Hearth Emissions from URBEMIS (CO2 metric tons/year):	0.000	0.000	
Wood Burning Fireplaces (N2O metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (N2O metric tons/year):	0.000	0.000	
Wood Burning Stoves (CH4 metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (CH4 metric tons/year):	0.000	0.000	
Total (CO2e metric tons/year):	0.227	0.000	
Total (CO2e metric tons/year):			<b>0.227</b>

The URBEMIS area source calculations include five separate categories: 1) natural gas fuel combustion, 2) hearth fuel combustion, 3) landscape maintenance equipment, 4) consumer products, and 5) architectural coatings. The Source tab imports CO2 emissions calculated by URBEMIS for hearths and landscape maintenance equipment only. BGM calculates CO2e. The consumer products and architectural coatings categories within URBEMIS do not generate GHG emissions as calculated by BGM. Instead, BGM calculates natural gas use and the resulting CO2 emissions in the Electricity and Natural Gas tab.



<b>Mitigated Area Source</b>			<b>Project-Baseline</b>
	<b>Project</b>	<b>Baseline</b>	
Landscaping Emissions from URBEMIS (CO2 metric tons/year):	0.227	0.000	
Hearth Emissions from URBEMIS (CO2 metric tons/year):	0.000	0.000	
Wood Burning Fireplaces (N2O metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (N2O metric tons/year):	0.000	0.000	
Wood Burning Stoves (CH4 metric tons/year):	0.000	0.000	
Natural Gas Fireplaces (CH4 metric tons/year):	0.000	0.000	
Total (CO2e metric tons/year):	0.227	0.000	
Total (CO2e metric tons/year):			<b>0.227</b>

mbustion, 3) landscape maintenance equipment, 4) consumer products, and 5) architectural coatings. This Area 1 then calculates N2O and CH4 emissions for woodstoves and fireplaces and uses the resulting emissions to calculate d, consequently, are not used by BGM. Also, URBEMIS' estimate of CO2 from natural gas fuel combustion is not used

# Electricity and Natural Gas

Baseline is currently: OFF

Unmitigated Electricity			
	Project	Baseline	Project-Baseline
CO2 metric tons/year CO2:	2,081.810	0.000	
CH4 metric tons/year CH4:	0.017	0.000	
N2O metric tons/year:	0.010	0.000	
CO2e metric tons/year:	2,085.142	0.000	
CO2e metric tons/year:			<b>2,085.14</b>

Unmitigated Natural Gas			
	Project	Baseline	Project-Baseline
CO2 metric tons/year:	461.20	0.000	
CH4 metric tons/year:	0.04	0.000	
N2O metric tons/year:	0.00	0.000	
CO2e metric tons/year:	462.38	0.000	
CO2e metric tons/year:			<b>462.38</b>

Project Climate Zone Location:  Zone 4  Zone 5



<b>Mitigated Electricity</b>			
	<b>Project</b>	<b>Baseline</b>	<b>Project-Baseline</b>
CO2 metric tons/year CO2:	1,372.476	0.000	
CH4 metric tons/year CH4:	0.011	0.000	
N2O metric tons/year:	0.006	0.000	
CO2e metric tons/year:	1,374.673	0.000	
CO2e metric tons/year:			<b>1,374.67</b>

<b>Mitigated Natural Gas</b>			
	<b>Project</b>	<b>Baseline</b>	<b>Project-Baseline</b>
CO2 metric tons/year:	341.366	0.000	
CH4 metric tons/year:	0.032	0.000	
N2O metric tons/year:	0.001	0.000	
CO2e metric tons/year:	342.241	0.000	
CO2e metric tons/year:			<b>342.24</b>

\*\*\* Select Mitigation Measures on the Mitigation Tab ==>

[Mitigation](#)



# Transportation

Baseline is Currently: OFF

<b>Unmitigated Transportation</b>	<b>Target Year:</b>		<b>Project-Baseline</b>
	2015	2011	
	<b>Project</b>	<b>Baseline</b>	
Operational Emissions from URBEMIS (CO2 tons/year)	4,379.86	0.00	
Metric Ton Adjustment (CO2 metric tons/year)	3,974.46	0.00	
Pavley Regulation Adjustment (CO2 metric tons/year):	3,674.66	0.00	
US EPA Adjustment (CO2e metric tons/year):	3,868.07	0.00	
Low Carbon Fuels Rule Adjustment (CO2e metric tons/year)	3,798.44	0.00	
<b>Total (CO2e metric tons/year):</b>			<b>3,798.44</b>

# Water and Wastewater

Baseline is currently: OFF

	Project	Baseline
CO2 metric tons/year:	31.0015	0.0000
CH4 metric tons/year:	0.0003	0.0000
N2O metric tons/year:	0.0001	0.0000
CO2e metric tons/year:	31.0511	0.0000
CO2e metric tons/year:		

Clear All User Overrides

	User Override of Model Estimates (af/yr)	Model Estimate (af/yr)
Baseline Water Demand		0.00
Project Water Demand	55.50	89.55
Net Increase in Water Demand		89.55





<b>Water</b> <b>Project-Baseline</b>
<b>31.05</b>

Total Gallons/year	Indoor Gallons/Year
0	0.00
29,184,897	18,255,655.98
29,184,897	18,255,655.98

# Mitigation

## Mitigation Category

Mitigation Category	Check=On	Mitigation Options	MMBtu/year Reduced	
	Electricity & Natural Gas	<input type="checkbox"/>	Solar Water Heater	5000
<input type="checkbox"/>		Tankless Water Heater	5000	
				kwh/year reduced
<input checked="" type="checkbox"/>		Cool Roofs/Green Roofs	52,260	MMBtu/year Increased 2
				% Increase In Energy Efficiency
<input checked="" type="checkbox"/>		Increase Energy Efficiency Beyond Title 24	26	
				kwh/year generated
<input checked="" type="checkbox"/>		Onsite Renewable Energy Systems - Solar	569906	
<input type="checkbox"/>		Onsite Renewable Energy Systems - Wind	5000	
<input type="checkbox"/>		Onsite Renewable Energy Systems - Other	5000	
Water and Wastewater	<input type="checkbox"/>	Drought Tolerant Landscaping	10	% Reduction Outdoor Use
				% Reduction Indoor Use
<input type="checkbox"/>	Low Flush Toilets	2		
Solid Waste	<input checked="" type="checkbox"/>	Reduce Solid Waste by the Following Percentage	10	Solid Waste Reduction %
Refrigerants	<input type="checkbox"/>	Use Ammonia of CFCs or HCFCs	50	% Reduction
Offsets / Credits	<input type="checkbox"/>	Purchase Emission Offsets / Credits	5000	Metric Tons CO2e/Year

Calculations for Mitigation Selections

	0
	0
	-2
Change in Natural Gas Use (MMBtu/year)	-2
	52260
	569906
	0
	0
Change in Electricity Use (kwh/year)	622166
Percentage Reduction in Elec and Nat Gas Use	26
% Reduction Outdoor H2O Use	0
% Reduction Indoor Water Use	0
Solid Waste Reduction %	10
% Reduction in CFC/HCFC Use	0

Baseline is currently: OFF

	Unmitigated Project-Baseline Emissions CO2e/year	Mitigated Project-Baseline Emissions CO2e/year
Transportation	3,798.44	3,798.44
Area Sources	0.23	0.23
Electricity	2,085.14	1,374.67
Natural Gas	462.38	342.24
Water and Wastewater	38.04	50.10
Solid Waste	1,230.68	1,107.61
Ag	0.00	0.00
Off-Road Equipment	0.00	0.00
Refrigerants	0.00	0.00
Sequestration	N/A	0.00
Emission Credits	N/A	0.00
Totals	7,614.92	6,673.30

# Solid Waste

Baseline is currently: OFF

	Unmitigated Solid Waste		
	Project	Baseline	Project - Baseline
Truck Haul CO2 (metric tons/year):	18.91	0.00	
Truck Haul CH4 (metric tons/year):	0.0003	0.0000	
Truck Haul CO2e (metric tons/year):	18.92	0.00	
Landfill Offgasing (CO2e metric tons/year):	1,211.76	0.00	
Total Solid Waste (CO2e metric tons/year):	1,230.68	0.00	
Total Solid Waste (CO2e metric tons/year):			<b>1,230.68</b>

Project Landfill disposal option:

Select 1 of 3 options

- Landfilling only
- Landfilling with Flaring to Burn Methane
- Landfilling with Energy Recovery

Base

Clear All User Overrides

Mitigated Solid Waste			
	Project	Baseline	Project - Baseline
Truck Haul CO2 (metric tons/year):	17.02	0.00	
Truck Haul CH4 (metric tons/year):	0.0003	0.0000	
Truck Haul CO2e (metric tons/year):	17.03	0.00	
Landfill Offgasing (CO2e metric tons/year):	1,090.58	0.00	
Total Solid Waste (CO2e metric tons/year):	1,107.61	0.00	
Total Solid Waste (CO2e metric tons/year):			<b>1,107.61</b>

\*\*\* Select Mitigation Measures on the Mitigation Tab ==>

[Mitigation](#)

!line Landfill disposal option:

Select 1 of 3 options

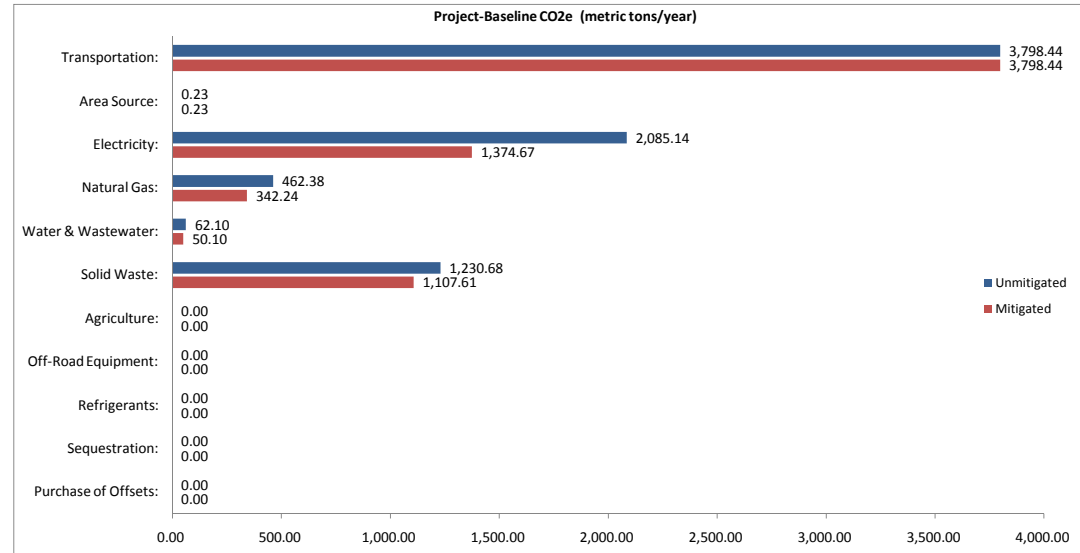
Landfilling only     
 Landfilling with Flaring to Burn Methane  
 Landfilling with Energy Recovery

## Summary Results

Project Name: 350 Airport Operation  
 Project and Baseline Years: 2015 N/A

Results	Unmitigated Project-Baseline CO2e (metric tons/year)	Mitigated Project-Baseline CO2e (metric tons/year)
Transportation:	3,798.44	3,798.44
Area Source:	0.23	0.23
Electricity:	2,085.14	1,374.67
Natural Gas:	462.38	342.24
Water & Wastewater:	62.10	50.10
Solid Waste:	1,230.68	1,107.61
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
<b>Total:</b>	<b>7,638.97</b>	<b>6,673.30</b>

Baseline is currently: **OFF**  
 Baseline Project Name:  
 Go to Settings Tab to Turn On Baseline



Unmitigated Water Emissions

## Water and Wastewater

Baseline is currently: OFF

Unmitigated Water and Wastewater			
	Project	Baseline	Project-Baseline
CO2 metric tons/year:	62.0030	0.0000	
CH4 metric tons/year:	0.0005	0.0000	
N2O metric tons/year:	0.0003	0.0000	
CO2e metric tons/year:	62.1022	0.0000	
CO2e metric tons/year:			<b>62.10</b>

Clear All User Overrides

	User Override of Model Estimates (af/yr)	Model Estimate (af/yr)	Total Gallons/year
Baseline Water Demand		0.00	0
Project Water Demand	111.00	89.55	29,184,897
Net Increase in Water Demand		89.55	29,184,897



Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: R:\General Air Quality Info\Projects\z - Internal Project Reviews\300 Airport Blvd\August Modeling\Final URBEMIS Runs\300 Airport Construction All 1 Phase.urb924

Project Name: 300 Aripport Construction All 1 Phase - Revised 9-2011

Project Location: Bay Area Air District

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

	<u>CO2</u>
2012 TOTALS (tons/year unmitigated)	617.00
2012 TOTALS (tons/year mitigated)	617.00
Percent Reduction	0.00
2013 TOTALS (tons/year unmitigated)	2,839.49
2013 TOTALS (tons/year mitigated)	2,839.49
Percent Reduction	0.00
2014 TOTALS (tons/year unmitigated)	1,804.64
2014 TOTALS (tons/year mitigated)	1,804.64
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>CO2</u>
2012	617.00
Asphalt 06/01/2012-01/10/2013	127.35
Paving Off-Gas	0.00
Paving Off Road Diesel	107.80
Paving On Road Diesel	2.10
Paving Worker Trips	17.45
Mass Grading 06/01/2012-01/10/2013	278.76
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	192.57
Mass Grading On Road Diesel	76.49
Mass Grading Worker Trips	9.69
Trenching 06/01/2012-01/10/2013	138.07
Trenching Off Road Diesel	130.31
Trenching Worker Trips	7.75
Fine Grading 10/05/2012-07/11/2013	72.83
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	69.67
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.16
2013	2,839.49

**9/15/2011 9:55:09 AM**

Asphalt 06/01/2012-01/10/2013	6.70
Paving Off-Gas	0.00
Paving Off Road Diesel	5.67
Paving On Road Diesel	0.11
Paving Worker Trips	0.92
Fine Grading 10/05/2012-07/11/2013	162.11
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	155.06
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	7.04
Mass Grading 06/01/2012-01/10/2013	14.67
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	10.14
Mass Grading On Road Diesel	4.03
Mass Grading Worker Trips	0.51
Trenching 06/01/2012-01/10/2013	7.27
Trenching Off Road Diesel	6.86
Trenching Worker Trips	0.41
Building 02/22/2013-07/17/2014	2,622.23
Building Off Road Diesel	180.76
Building Vendor Trips	1,210.50
Building Worker Trips	1,230.97

**9/15/2011 9:55:09 AM**

Asphalt 11/22/2013-07/17/2014	23.42
Paving Off-Gas	0.00
Paving Off Road Diesel	19.86
Paving On Road Diesel	0.34
Paving Worker Trips	3.22
Coating 11/22/2013-07/17/2014	3.09
Architectural Coating	0.00
Coating Worker Trips	3.09
2014	1,804.64
Asphalt 11/22/2013-07/17/2014	118.77
Paving Off-Gas	0.00
Paving Off Road Diesel	100.71
Paving On Road Diesel	1.74
Paving Worker Trips	16.32
Building 02/22/2013-07/17/2014	1,670.20
Building Off Road Diesel	115.10
Building Vendor Trips	770.85
Building Worker Trips	784.24
Coating 11/22/2013-07/17/2014	15.68
Architectural Coating	0.00
Coating Worker Trips	15.68

Phase Assumptions

Phase: Fine Grading 10/5/2012 - 7/11/2013 - Type Your Description Here

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**9/15/2011 9:55:09 AM**

Total Acres Disturbed: 14

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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

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

Phase: Mass Grading 6/1/2012 - 1/10/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 14

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 233 cubic yards/day; Offsite Cut/Fill: 267 cubic yards/day

On Road Truck Travel (VMT): 250

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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

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

Phase: Trenching 6/1/2012 - 1/10/2013 - Default Building Construction Description

Off-Road Equipment:

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

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 6/1/2012 - 1/10/2013 - Default Paving Description

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**9/15/2011 9:55:09 AM**

Acres to be Paved: 3.7

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 11/22/2013 - 7/17/2014 - Type Your Description Here

Acres to be Paved: 3.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 2/22/2013 - 7/17/2014 - Default Architectural Coating Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/22/2013 - 7/17/2014 - Type Your Description Here

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>CO2</u>
2012	617.00
Asphalt 06/01/2012-01/10/2013	127.35
Paving Off-Gas	0.00
Paving Off Road Diesel	107.80
Paving On Road Diesel	2.10
Paving Worker Trips	17.45
Mass Grading 06/01/2012-01/10/2013	278.76
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	192.57
Mass Grading On Road Diesel	76.49
Mass Grading Worker Trips	9.69
Trenching 06/01/2012-01/10/2013	138.07
Trenching Off Road Diesel	130.31
Trenching Worker Trips	7.75

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Fine Grading 10/05/2012-07/11/2013	72.83
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	69.67
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.16
2013	2,839.49
Asphalt 06/01/2012-01/10/2013	6.70
Paving Off-Gas	0.00
Paving Off Road Diesel	5.67
Paving On Road Diesel	0.11
Paving Worker Trips	0.92
Fine Grading 10/05/2012-07/11/2013	162.11
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	155.06
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	7.04
Mass Grading 06/01/2012-01/10/2013	14.67
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	10.14
Mass Grading On Road Diesel	4.03
Mass Grading Worker Trips	0.51



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Trenching 06/01/2012-01/10/2013	7.27
Trenching Off Road Diesel	6.86
Trenching Worker Trips	0.41
Building 02/22/2013-07/17/2014	2,622.23
Building Off Road Diesel	180.76
Building Vendor Trips	1,210.50
Building Worker Trips	1,230.97
Asphalt 11/22/2013-07/17/2014	23.42
Paving Off-Gas	0.00
Paving Off Road Diesel	19.86
Paving On Road Diesel	0.34
Paving Worker Trips	3.22
Coating 11/22/2013-07/17/2014	3.09
Architectural Coating	0.00
Coating Worker Trips	3.09

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2014	1,804.64
Asphalt 11/22/2013-07/17/2014	118.77
Paving Off-Gas	0.00
Paving Off Road Diesel	100.71
Paving On Road Diesel	1.74
Paving Worker Trips	16.32
Building 02/22/2013-07/17/2014	1,670.20
Building Off Road Diesel	115.10
Building Vendor Trips	770.85
Building Worker Trips	784.24
Coating 11/22/2013-07/17/2014	15.68
Architectural Coating	0.00
Coating Worker Trips	15.68

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 10/5/2012 - 7/11/2013 - Type Your Description Here

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

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For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Mass Grading 6/1/2012 - 1/10/2013 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Trenching 6/1/2012 - 1/10/2013 - Default Building Construction Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 6/1/2012 - 1/10/2013 - Default Paving Description

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 11/22/2013 - 7/17/2014 - Type Your Description Here

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Building Construction 2/22/2013 - 7/17/2014 - Default Architectural Coating Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Architectural Coating 11/22/2013 - 7/17/2014 - Type Your Description Here

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For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: R:\General Air Quality Info\Projects\z - Internal Project Reviews\300 Airport Blvd\August Modeling\Final URBEMIS Runs\300 Airport Phase 1 Construction .urb924

Project Name: 300 Airport Phase 1 Construction - Revised 9-2011

Project Location: Bay Area Air District

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

CO2

2012 TOTALS (tons/year unmitigated)	584.31
2012 TOTALS (tons/year mitigated)	584.31
Percent Reduction	0.00

2013 TOTALS (tons/year unmitigated)	1,111.75
2013 TOTALS (tons/year mitigated)	1,111.75
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2

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2012	584.31
Asphalt 06/01/2012-12/14/2012	105.07
Paving Off-Gas	0.00
Paving Off Road Diesel	89.68
Paving On Road Diesel	1.00
Paving Worker Trips	14.39
Mass Grading 06/01/2012-12/14/2012	227.89
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	178.64
Mass Grading On Road Diesel	40.26
Mass Grading Worker Trips	8.99
Trenching 06/01/2012-12/14/2012	128.08
Trenching Off Road Diesel	120.88
Trenching Worker Trips	7.19
Fine Grading 08/17/2012-04/25/2013	113.94
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	108.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	4.95
Building 12/28/2012-09/30/2013	9.33
Building Off Road Diesel	1.62
Building Vendor Trips	3.63
Building Worker Trips	4.09

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2013	1,111.75
Building 12/28/2012-09/30/2013	910.21
Building Off Road Diesel	158.07
Building Vendor Trips	353.56
Building Worker Trips	398.59
Fine Grading 08/17/2012-04/25/2013	97.50
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	93.26
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	4.24
Asphalt 04/02/2013-09/30/2013	96.96
Paving Off-Gas	0.00
Paving Off Road Diesel	82.68
Paving On Road Diesel	1.00
Paving Worker Trips	13.27
Coating 04/02/2013-09/30/2013	7.08
Architectural Coating	0.00
Coating Worker Trips	7.08

Phase Assumptions

Phase: Fine Grading 8/17/2012 - 4/25/2013 - Type Your Description Here

Total Acres Disturbed: 6.72

Maximum Daily Acreage Disturbed: 5

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 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 6/1/2012 - 12/14/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 6.72

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 116.5 cubic yards/day; Offsite Cut/Fill: 133.5 cubic yards/day

On Road Truck Travel (VMT): 141.84

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/1/2012 - 12/14/2012 - Default Trenching Description

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 6/1/2012 - 12/14/2012 - Default Paving Description

Acres to be Paved: 1.68

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

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- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 4/2/2013 - 9/30/2013 - Type Your Description Here

Acres to be Paved: 1.68

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 12/28/2012 - 9/30/2013 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2013 - 9/30/2013 - Default Architectural Coating Description

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>CO2</u>
2012	584.31
Asphalt 06/01/2012-12/14/2012	105.07
Paving Off-Gas	0.00
Paving Off Road Diesel	89.68
Paving On Road Diesel	1.00
Paving Worker Trips	14.39
Mass Grading 06/01/2012-12/14/2012	227.89
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	178.64
Mass Grading On Road Diesel	40.26
Mass Grading Worker Trips	8.99
Trenching 06/01/2012-12/14/2012	128.08
Trenching Off Road Diesel	120.88
Trenching Worker Trips	7.19
Fine Grading 08/17/2012-04/25/2013	113.94
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	108.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	4.95

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Building 12/28/2012-09/30/2013	9.33
Building Off Road Diesel	1.62
Building Vendor Trips	3.63
Building Worker Trips	4.09
2013	1,111.75
Building 12/28/2012-09/30/2013	910.21
Building Off Road Diesel	158.07
Building Vendor Trips	353.56
Building Worker Trips	398.59
Fine Grading 08/17/2012-04/25/2013	97.50
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	93.26
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	4.24
Asphalt 04/02/2013-09/30/2013	96.96
Paving Off-Gas	0.00
Paving Off Road Diesel	82.68
Paving On Road Diesel	1.00
Paving Worker Trips	13.27
Coating 04/02/2013-09/30/2013	7.08
Architectural Coating	0.00
Coating Worker Trips	7.08

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/17/2012 - 4/25/2013 - Type Your Description Here

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Mass Grading 6/1/2012 - 12/14/2012 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

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For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Trenching 6/1/2012 - 12/14/2012 - Default Trenching Description

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 6/1/2012 - 12/14/2012 - Default Paving Description

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 4/2/2013 - 9/30/2013 - Type Your Description Here

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

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NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Building Construction 12/28/2012 - 9/30/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2013 - 9/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: R:\General Air Quality Info\Projects\z - Internal Project Reviews\300 Airport Blvd\August Modeling\Final URBEMIS Runs\300 Airport Phase 2 Construction.urb924

Project Name: 300 Airport Phase 2 Construction - Revised 2011

Project Location: Bay Area Air District

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

	<u>CO2</u>
2013 TOTALS (tons/year unmitigated)	218.55
2013 TOTALS (tons/year mitigated)	218.55
Percent Reduction	0.00
2014 TOTALS (tons/year unmitigated)	1,410.04
2014 TOTALS (tons/year mitigated)	1,410.04
Percent Reduction	0.00
2015 TOTALS (tons/year unmitigated)	1,009.94
2015 TOTALS (tons/year mitigated)	1,009.94
Percent Reduction	0.00



Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>CO2</u>
2013	218.55
Fine Grading 10/01/2013-07/21/2014	77.53
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	74.16
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.37
Mass Grading 10/01/2013-12/02/2013	100.14
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	57.01
Mass Grading On Road Diesel	40.26
Mass Grading Worker Trips	2.87
Trenching 10/01/2013-12/02/2013	40.88
Trenching Off Road Diesel	38.58
Trenching Worker Trips	2.30

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2014	1,410.04
Fine Grading 10/01/2013-07/21/2014	169.16
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	161.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	7.35
Building 05/27/2014-06/09/2015	1,240.88
Building Off Road Diesel	127.26
Building Vendor Trips	567.61
Building Worker Trips	546.01
2015	1,009.94
Building 05/27/2014-06/09/2015	901.20
Building Off Road Diesel	92.41
Building Vendor Trips	412.17
Building Worker Trips	396.62
Asphalt 03/04/2015-09/01/2015	97.05
Paving Off-Gas	0.00
Paving Off Road Diesel	82.68
Paving On Road Diesel	1.09
Paving Worker Trips	13.28
Coating 03/04/2015-09/01/2015	11.69
Architectural Coating	0.00
Coating Worker Trips	11.69

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Phase Assumptions

Phase: Fine Grading 10/1/2013 - 7/21/2014 - Type Your Description Here

Total Acres Disturbed: 7.27

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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

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

Phase: Mass Grading 10/1/2013 - 12/2/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 7.27

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 116.5 cubic yards/day; Offsite Cut/Fill: 133.5 cubic yards/day

On Road Truck Travel (VMT): 444.44

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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

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

Phase: Trenching 10/1/2013 - 12/2/2013 - Type Your Description Here

Off-Road Equipment:

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

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 3/4/2015 - 9/1/2015 - Default Paving Description

Acres to be Paved: 1.82

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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

Phase: Building Construction 5/27/2014 - 6/9/2015 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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

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

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

Phase: Architectural Coating 3/4/2015 - 9/1/2015 - Default Architectural Coating Description

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

CO2

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2013	218.55
Fine Grading 10/01/2013-07/21/2014	77.53
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	74.16
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.37
Mass Grading 10/01/2013-12/02/2013	100.14
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	57.01
Mass Grading On Road Diesel	40.26
Mass Grading Worker Trips	2.87
Trenching 10/01/2013-12/02/2013	40.88
Trenching Off Road Diesel	38.58
Trenching Worker Trips	2.30

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2014	1,410.04
Fine Grading 10/01/2013-07/21/2014	169.16
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	161.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	7.35
Building 05/27/2014-06/09/2015	1,240.88
Building Off Road Diesel	127.26
Building Vendor Trips	567.61
Building Worker Trips	546.01
2015	1,009.94
Building 05/27/2014-06/09/2015	901.20
Building Off Road Diesel	92.41
Building Vendor Trips	412.17
Building Worker Trips	396.62
Asphalt 03/04/2015-09/01/2015	97.05
Paving Off-Gas	0.00
Paving Off Road Diesel	82.68
Paving On Road Diesel	1.09
Paving Worker Trips	13.28
Coating 03/04/2015-09/01/2015	11.69
Architectural Coating	0.00
Coating Worker Trips	11.69

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 10/1/2013 - 7/21/2014 - Type Your Description Here

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63.6% PM25: 55%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Mass Grading 10/1/2013 - 12/2/2013 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

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For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Trenching 10/1/2013 - 12/2/2013 - Type Your Description Here

For Excavators, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Other General Industrial Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 3/4/2015 - 9/1/2015 - Default Paving Description

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Building Construction 5/27/2014 - 6/9/2015 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:



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NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Architectural Coating 3/4/2015 - 9/1/2015 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: R:\General Air Quality Info\Projects\z - Internal Project Reviews\300 Airport Blvd\August Modeling\Final URBEMIS Runs\350 Construction Updated 9.13.11.urb924

Project Name: 350 Airport Boulevard Construction - Revised 2011

Project Location: Bay Area Air District

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

CO2

2013 TOTALS (tons/year unmitigated)	383.33
2013 TOTALS (tons/year mitigated)	383.33
Percent Reduction	0.00

2014 TOTALS (tons/year unmitigated)	25.82
2014 TOTALS (tons/year mitigated)	25.82
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2

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2013	383.33
Fine Grading 03/01/2013-06/01/2013	77.53
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	74.16
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.37
Building 06/02/2013-12/01/2013	303.47
Building Off Road Diesel	105.38
Building Vendor Trips	39.25
Building Worker Trips	158.84
Coating 12/02/2013-02/01/2014	2.33
Architectural Coating	0.00
Coating Worker Trips	2.33
2014	25.82
Coating 12/02/2013-02/01/2014	2.44
Architectural Coating	0.00
Coating Worker Trips	2.44
Asphalt 02/02/2014-03/15/2014	23.38
Paving Off-Gas	0.00
Paving Off Road Diesel	19.08
Paving On Road Diesel	1.24
Paving Worker Trips	3.06

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Phase Assumptions

Phase: Fine Grading 3/1/2013 - 6/1/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 8.58

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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

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

Phase: Paving 2/2/2014 - 3/15/2014 - Default Paving Description

Acres to be Paved: 2.14

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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

Phase: Building Construction 6/2/2013 - 12/1/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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

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

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

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Phase: Architectural Coating 12/2/2013 - 2/1/2014 - Default Architectural Coating Description

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

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

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

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>CO2</u>
2013	383.33
Fine Grading 03/01/2013-06/01/2013	77.53
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	74.16
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	3.37
Building 06/02/2013-12/01/2013	303.47
Building Off Road Diesel	105.38
Building Vendor Trips	39.25
Building Worker Trips	158.84
Coating 12/02/2013-02/01/2014	2.33
Architectural Coating	0.00
Coating Worker Trips	2.33

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2014	25.82
Coating 12/02/2013-02/01/2014	2.44
Architectural Coating	0.00
Coating Worker Trips	2.44
Asphalt 02/02/2014-03/15/2014	23.38
Paving Off-Gas	0.00
Paving Off Road Diesel	19.08
Paving On Road Diesel	1.24
Paving Worker Trips	3.06

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/1/2013 - 6/1/2013 - Default Fine Site Grading Description

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 63% PM25: 63%

For Soil Stabilizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Graders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rubber Tired Dozers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Water Trucks, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Paving 2/2/2014 - 3/15/2014 - Default Paving Description

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For Cement and Mortar Mixers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Pavers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Paving Equipment, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Rollers, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Building Construction 6/2/2013 - 12/1/2013 - Default Building Construction Description

For Cranes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Forklifts, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Generator Sets, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Tractors/Loaders/Backhoes, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

For Welders, the Use Aqueous Diesel Fuel mitigation reduces emissions by:

NOX: 20% PM10: 45% PM25: 45%

The following mitigation measures apply to Phase: Architectural Coating 12/2/2013 - 2/1/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

# **APPENDIX E**

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**300 Airport Blvd  
Assumptions & Calculations**



**300 Airport Boulevard  
Water Demand Assumptions**

<b>Building-Only Water Demand (life sciences campus land use)</b>	<b>g/day</b>	<b>g/year</b>	<b>AFY</b>
Worst Case Scenario (Unmitigated) <sup>1</sup>	180,750	65,973,750	203
Best Case Scenario (Mitigated) <sup>1</sup>	82,525	30,121,625	92

<sup>1</sup> The water demand quantities were taken from the Burlingame Point Wastewater Study, prepared for the Project by BKF Engineers. For further detail regarding water demand please refer to the Utilities Section of the Draft EIR. The Worst Case Scenario (unmitigated) water demand corresponds with the "Scenario A" water demand identified in the Wastewater Study. The Worst Case Scenario (unmitigated) demand is based on City standard generation rates which represent current, conservative industry standards. The Best Case Scenario (mitigated) water demand corresponds with the "Scenario C" water demand identified in the Wastewater Study, which incorporates aggressive water conservation measures.

<b>Irrigation water demand</b>	<b>g/day</b>	<b>g/year</b>	<b>AFY</b>
Combined 300 Airport Blvd & 350 Airport Blvd	28,910	10552150	32
300 Airport Blvd Worst Case Scenario (unmitigated) <sup>2</sup>	19,658.80	7175462	21.76
300 Airport Blvd Best Case Scenario (mitigated) <sup>2,3</sup>	17692.92	6457915.8	19.584

<sup>2</sup>300 Airport Blvd is approximately 18.12 acres or roughly 68 percent of the combined 300 and 350 Airport Blvd project sites. Therefore, 68 percent of the total irrigation water demand is attributed to 300 Airport Blvd.

<sup>3</sup>Includes 10% reduction in irrigation water demand from drought tolerant landscaping

<b>Building Plus Irrigation Water Demand</b>	<b>Buildings g/day</b>	<b>Irrigation g/year</b>	<b>AFY</b>
Worst Case Scenario (Unmitigated)	200,409	73,149,212	225
Best Case Scenario (Mitigated)	100,218	36,579,541	112

**percent reduction between mitigated and unmitigated total water demand**

50.35415554

**350 Airport Boulevard  
Electrical Demand Assumptions**

**Reduction in electricity demand from cool roof design feature**

	<b>Mwh/year</b>	<b>kwh/year</b>
Day-Care Center	44.04	44,040.00
Racquetball/Health	316.20	316,200.00
High Turnover/Sit-Down Restaurant	771.46	771,460.00
Strip Mall	243.22	243,220.00
General Office Building	10,518.72	10,518,720.00
<b>Total</b>	<b>11,893.64</b>	<b>11,893,640.00</b>

Air conditioning electricity demand <sup>1</sup>		1558066.84
cool roof reduction (7%) <sup>2</sup>		109,065
total AC electricity demand after cool roof reduction		1,449,002.16

<sup>1</sup> Assumption based on U.S. Department of Energy, *Energy Efficiency Trends in Residential and Commercial Buildings*, October 2008, which states that typically air conditioning represents approximately 13.1 percent of total electricity demand.

<sup>2</sup> Assumption based on Pacific Gas and Electric Company (PG&E), *Cool Roof Design Brief*, which states that typical electricit savings from cool roofs range from 7 percent to 34 percent.

**Reduction in electricity demand through implementation of onsite or offsite renewable electricity source**

total electricity demand (kwh/year)	11,893,640
10% reduction <sup>3</sup>	1189364

<sup>3</sup> The 569,906 kWh/year were entered into the BGM model as the total electrical reduction from solar for convenience, although it does not limit renewable resources to solar implementation. 10% was chosen as a conservative reduction that is attainable by the project applicant. Even offsetting 100% of the project electrical usage with renewable would not provide enough of a reduction to meet the BAAQMD thresholds.

**Electricity reduction based on California's Renewable Portfolio Standard<sup>4</sup>**

	<b>MT CO2e</b>
Total unmitigated electricity-related GHG emissions	4348.56
electricity-related emissions w/ 17% of electricity from renewable sources	3609.3048
Total mitigated electricity-related GHG emissions	2,866.63
electricity-related emissions w/ 17% of electricity from renewable sources	2379.3029

<sup>4</sup> These reductions were applied to the results from BGM and are what is reported as the final electrical emissions in the EIR.

**300 Airport Boulevard  
Traffic Demand Assumptions**

**Transportation-Related GHG Emissions without implementation of a TDM program (MT CO2e/year) <sup>1</sup>**

10,858.16

<sup>1</sup>This value was considered as the unmitigated amount of transportation-related GHG emissions that would result from the 350 Airport Boulevard Project

**Transportation-Related GHG Emissions with Implementation of a TDM program (based on trip generation rates provided in the Traffic Analysis) program) <sup>2</sup>**

9,446.60

<sup>2</sup>This value was considered as the mitigated amount of transportation-related GHG emissions that would result from the 350 Airport Boulevard Project

**Table 3.6-1**  
**Comparison of Construction-Related GHG Emission**

	Multi-Phase Construction Scenario		Single Phase Construction Scenario
	Phase 1 GHG Emissions (CO <sub>2</sub> e/year)	Phase 2 GHG Emission (CO <sub>2</sub> e/year)	GHG Emission (CO <sub>2</sub> e/year)
2012	584.31	-	617.00
2013	1,111.75	218.55	2,839.49
2014	-	1,410.04	1,806.64
2015	-	1,009.94	
sub total (short	1,696.06	2,638.53	5,263.13
sub total (MT/yr)	1,538.64	2,393.63	4,774.63
<b>Totals</b>		<b>3,932.28</b>	<b>4,774.63</b>

*Source:* Atkins, 2011 based on URBEMIS 2007, Version 9.2.4.

*Note:* Results have been converted from short tons (as presented in URBEMIS) to metric tons (0.907185 metric tons per short

# **APPENDIX E**

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**350 Airport Blvd  
Assumptions & Calculations**

## 350 Airport Boulevard Water Demand Assumptions

### Building-Only Water Demand

	g/day	g/year	AFY
Worst Case Scenario (Unmitigated) <sup>1</sup>	90,000	32,850,000	101
Best Case Scenario (Mitigated) <sup>1</sup>	52,500	19,162,500	59

<sup>1</sup>The water demand quantities were taken from the *Burlingame Point Wastewater Study*, prepared for the Project by BKF Engineers. For further detail regarding water demand please refer to the Utilities Section of the Draft EIR. The Worst Case Scenario (unmitigated) water demand corresponds with the "Scenario A" water demand identified in the *Wastewater Study*. The Worst Case Scenario (unmitigated) demand is based on City standard generation rates which represent current, conservative industry standards. The Best Case Scenario (mitigated) water demand corresponds with the "Scenario C" water demand identified in the *Wastewater Study*, which incorporates aggressive water conservation measures.

### Irrigation water demand

	g/day	g/year	AFY
Combined 300 Airport Blvd & 350 Airport Blvd	28,910	10,552,150	32
350 Airport Blvd Worst Case Scenario (unmitigated) <sup>2</sup>	9,251	3,376,688	10
350 Airport Blvd Best Case Scenario (mitigated) <sup>2,3</sup>	8,049	2,937,719	9

<sup>2</sup>350 Airport Blvd is approximately 8.58 acres or roughly 32 percent of the combined 300 and 350 Airport Blvd project sites. Therefore, 32 percent of the total irrigation water demand is attributed to 350 Airport Blvd.

<sup>3</sup>Includes 10% reduction in irrigation water demand from drought tolerant landscaping

### Building Plus Irrigation Water Demand

	g/day	g/year	AFY
Worst Case Scenario (Unmitigated)	99,251	36,226,688	111
Best Case Scenario (Mitigated)	60,549	22,100,219	56

### percent reduction between mitigated and unmitigated total water demand

50.05399568

**350 Airport Boulevard  
Electrical Demand Assumptions**

**Reduction in electricity demand from cool roof design feature**

	<b>mWH/year</b>	<b>kWH/year</b>
General Office Building	5,699	5,699,058
Air conditioning electricity demand <sup>1</sup>		746,577
cool roof reduction (7%) <sup>2</sup>		52,260
total AC electricity demand after cool roof reduction		694,316

<sup>1</sup> Assumption based on U.S. Department of Energy, *Energy Efficiency Trends in Residential and Commercial Buildings*, October 2008, which states that typically air conditioning represents approximately 13.1 percent of total electricity demand.

<sup>2</sup> Assumption based on Pacific Gas and Electric Company (PG&E), *Cool Roof Design Brief*, which states that typical electricity savings from cool roofs range from 7 percent to 34 percent.

**Reduction in electricity demand through implementation of onsite or offsite renewable electricity source**

total electricity demand (kWH/year)	5,699,058
10% reduction <sup>3</sup>	569,906

<sup>3</sup> The 569,906 kWH/year were entered into the BGM model as the total electrical reduction from solar for convenience, although it does not limit renewable resources to solar implementation. 10% was chosen as a conservative reduction that is attainable by the project applicant. Even offsetting 100% of the project electrical usage with renewable would not provide enough of a reduction to meet the BAAQMD thresholds.

**Electricity reduction based on California's Renewable Portfolio Standard<sup>4</sup>**

	<b>MT CO<sub>2</sub>e</b>
Total unmitigated electricity-related GHG emissions	2,085
electricity-related emissions w/ 17% of electricity from renewable sources	1,731
Total mitigated electricity-related GHG emissions	1,375
electricity-related emissions w/ 17% of electricity from renewable sources	1,141

<sup>4</sup> These reductions were applied to the results from BGM and are what is reported as the final electrical emissions in the EIR.

**350 Airport Boulevard  
Traffic Demand Assumptions**

**Transportation-Related GHG Emissions (MT CO<sub>2</sub>e/year) without implementation of a TDM program (based on trip rates provided in the Traffic Analysis for the Project)<sup>1</sup>**  
3,798.44

<sup>1</sup>This value was considered as the unmitigated amount of transportation-related GHG emissions that would result from the 350 Airport Boulevard Project

**Transportation-Related GHG Emissions with Implementation of a TDM program (based on the same 13% reduction in trips achieved by the 300 Airport Boulevard Project TDM program)<sup>2</sup>**  
3304.6428

<sup>2</sup>This value was considered as the mitigated amount of transportation-related GHG emissions that would result from the 350 Airport Boulevard Project



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**Comparison of Construction-Related GHG  
Emission**

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**Single Phase Construction  
Scenario**

**GHG Emission  
(CO<sub>2</sub>e/year)**

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2013	383.33
2014	25.82
sub total (short	409.15
sub total (MT/year)	371.17
<b>Totals</b>	<b>371.17</b>

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*Source:* Atkins, 2011 based on URBEMIS 2007, Version

*Note:* Results have been converted from short tons (as