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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: R:\ES Information\Air Quality\Jobs\Chapman\Urbemis\Chapman J001 rev6 083111.urb924

Project Name: Chapman 083111

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	CO2	CO2e (tons)	CO2e (metric tons)
2012 TOTALS (tons/year unmitigated)	137.76		
2012 TOTALS (tons/year mitigated)	137.76	139.0	126
Percent Reduction	0.00		
2013 TOTALS (tons/year unmitigated)	421.85		
2013 TOTALS (tons/year mitigated)	421.85	425.6	386
Percent Reduction	0.00		
2014 TOTALS (tons/year unmitigated)	430.29		
2014 TOTALS (tons/year mitigated)	430.29	434.2	394
Percent Reduction	0.00		
2015 TOTALS (tons/year unmitigated)	70.66		
2015 TOTALS (tons/year mitigated)	70.66	71.3	65
Percent Reduction	0.00		

971	Total
32	Total amortized over 30 years

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	161.99

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	1,748.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	1,910.26

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: R:\ES Information\Air Quality\Jobs\Chapman\Urbemis\Chapman Annual Summary CO2 083111.urb924

Project Name: Chapman 042210

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	161.99

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	228.96

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	390.95

CHAPMAN PERFORMING ARTS CENTER - GREENHOUSE GAS EMISSIONS - 083111

Emission Source	Quantity	Unit	Annual Usage Factor	Annual Use	Total Estimated Annual Emissions	Percent of New Emissions
Proposed Project at Buildout						
Commercial Electricity	110,663	gsf	13.63 kwh/gsf/yr	1,508,337 kwh/yr	495,339 kg CO2 495 $MTCO_2$	54.4%
Commercial Water Consumption	110,663	gsf	123.0 gallons/yr/gsf	13.6 MG/yr 177,250 kwh/yr	58,209 kg CO2 58 $MTCO_2$	6.4%
Combined Natural Gas and Landscape	from URBEMIS				162 ton CO2 147 $MTCO_2$	16.2%
Private Vehicle Trips	from URBEMIS				229 ton CO2 209 $MTCO_2$	23.0%
Total, Proposed Project Buildout					**910 $MTCO_2$**	100%

Emission Category	CO2 Emission Factor		CO2e/CO2
Purchased Electricity	0.72	lbs/kwh	
Emergency Diesel Generators	9.96	kg/gallon	
Propane Liquid Gas	5.67	kg/gallon	
Purchased Natural Gas	53.06	kg/mmBTU	1.0026
Gasoline vehicles (typical)			1.0064

Water	Energy Usage Factor	
Indoor Potable Water Consumption	13,022	kwh/MG
Outdoor Potable Water Consumption	11,111	kwh/MG

Convert…	
Pounds to Metric Tons, multiply pounds by:	0.000453592
Tons to Metric Tons, multiply tons by:	0.90718474
Kilogram to pounds, multiply kg by:	2.2046
Pound to kilograms, multiply lbs. by:	0.45359237
kilogram to Metric Tons, multiply kg by:	0.001
kBTU to kilowatt hours, multiply kBTU by:	0.293071083
kBTU to megawatt hours, multiply kBTU by:	0.000293071

Notes:
kwh = kilowatt hour
gsf = gross square foot
mmBTU = million British Thermal Units
MG = million gallons
kg = kilogram
CO_2 = carbon dioxide
MT = Metric Tons