FOX PROPERTY PROJECT
GREENHOUSE GAS ASSESSMENT
SAN JOSE, CALIFORNIA

June 14, 2010
Revised July 1, 2010

Prepared for:

Will Burns
David J Powers & Associates, Inc.
1871 The Alameda, Suite 200
San Jose, California 95126

Prepared by:

James A. Reyff
ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
505 Petaluma Boulevard South
Petaluma, CA 94952
(707) 766-7700

Job No.: 10-010

Introduction

This report presents an evaluation of greenhouse gas (GHG) emissions from the Fox Property Development project in San Jose, California. The ~30-acre project site is located in the North San José Development Policy Area and within the *Rincon de Los Esteros Redevelopment Area*. The northern portion of the site was previously developed with three office/research and development (R&D) buildings totaling approximately 182,000 square feet. One of these buildings, a 53,000 square foot office/R&D building at 1040 East Brokaw Road, was demolished in the spring of 2008 as part of ongoing hazardous materials remediation work on the site. The two remaining buildings on the site were constructed in 1998. The southern portion of the site is primarily vacant land that was previously used as a metals recycling facility.

In 2005, the City of San José approved an update to the North San José Area Development Policy (NSJADP), which was intended to establish a policy framework to guide the ongoing development within the North San José area. The updated NSJADP allows for the development of 26.7 million square feet of new industrial/office/R&D building space, 1.7 million square feet of new neighborhood serving commercial uses, and 32,000 new dwelling units in the Rincon area.

The project proposes a General Plan Amendment (GPA) to change the land use designation on 27.4 acres of the site from Neighborhood/Community Commercial and High Density Residential (25-50 DU/AC) to General Commercial on 13.7 acres and Medium-High Density Residential (12-25 DU/AC) on 13.7 acres. The 2.5-acre area at the south end of the project site adjacent to Coyote Creek would maintain the Private Open Space land use designation. The proposed GPA is intended to allow general commercial and office, administrative, research and development and vertical mixed-use development, including residential, on the northern portion of the site. The proposed land use designation would also allow a greater range of residential densities on the southern portion of the site and parks, trails, and open space throughout the property.

The ultimate construction and occupation of development projects result in GHG emissions. GHG emissions would occur in connection with many activities associated with development, including the use of construction equipment and building materials, natural gas usage, electrical usage (since electricity generation is a major contributor to GHG emissions), water use (which relies on the use of electricity for pumping), and traffic. However, it is important to acknowledge that new development does not necessarily create entirely new GHG emissions, since most of the persons who will visit or occupy new development will come from other locations where they were already causing such GHG emissions.

GHGs and Global Warming

Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by mankind) atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide[1]. Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Solar radiation enters the earth's atmosphere from space, and a portion of the radiation is absorbed at

[1] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate

the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect, maintains a habitable climate. Natural processes and human activities emit GHGs. Emissions from human activities, such as electricity production, motor vehicle use and agriculture are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the earth's natural climate, known as global warming or climate change. Other than water vapor, the GHGs contributing to global warming include the following gases:

- Carbon dioxide, primarily a byproduct of fuel combustion.
- Nitrous oxide is a byproduct of fuel combustion and also associated with agricultural operations such as fertilization of crops.
- Methane is commonly created by off-gassing from agricultural practices (e.g. keeping livestock) and landfill operation.
- Chlorofluorocarbons that were widely used as refrigerants, propellants and cleaning solvents but their production has been mostly reduced by international treaty.
- Hydrofluorocarbons are now used as a substitute for chlorofluorocarbons in refrigeration and cooling.
- Perfluorocarbons and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself absorbs outgoing radiation. Indirect effects occur when gases cause chemical reactions that produce other GHGs or prolong the existence of other GHGs. The Global Warming Potential concept is used to compare the ability of each GHG to trap heat in the atmosphere relative to carbon dioxide (CO_2), which is the most abundant GHG. CO_2 has a GWP of 1, expressed as CO_2e. Other GHGs, such as methane and nitrous oxide are commonly found in the atmosphere but at much lower concentrations. However, the GWP for methane is 21, while nitrous oxide has a GWP of 310. Other trace gases, such as chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs), which are halocarbons that contain chlorine, have much greater GWPs. Fortunately these gases are found at much lower concentrations and many are being phased out as a result of global efforts to reduce destruction of stratospheric ozone. In the United States, CO_2 emissions account for about 85 percent of the CO_2e emissions, followed by methane at about eight percent and nitrous oxide at about five percent.

Thresholds of Significance

The Governor's Office of Planning and Research (OPR) first released a Technical Advisory on GHGs on June 19, 2008. This was followed by a draft of the proposed CEQA Guidelines amendments on January 8, 2009. Appendix G of the CEQA Guidelines have been updated to include the following criteria for determining significance with respect to GHG emissions. Projects would have a significant impact if they would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

OPR recommends that each agency develop an approach to addressing GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level.

BAAQMD CEQA Guidelines

The Bay Area Air Quality Management District (BAAQMD) recently adopted thresholds for evaluating GHG emissions from projects and plans and developed guidelines for assessing these impacts[2,3]. The thresholds include a bright line emissions threshold of 1,100 metric tons of CO_2 equivalents (CO_2e) per year or an emission efficiency metric of 4.6 tons of CO_2e per year per service population.

GHG Emissions Analysis Methodology

Greenhouse gas emissions associated with the development of the proposed project were calculated. The California Air Pollution Control Officers Association (CAPCOA) has provided guidance for calculating project emissions[4]. Emissions from area sources, mobile sources and electricity usage are recommended by CAPCOA. Area and mobile source emissions were calculated using the URBEMIS2007 model, as recommended by BAAQMD and CAPCOA. BAAQMD just released the BAAQMD Greenhouse Gas Model (BGM) that post processes the URBEMIS2007 output to provide CO2 equivalent (or CO2e) emissions for projects.

URBEMIS2007 is a computer model developed by the California Air Resources Board (CARB) to estimate air pollutant emissions from land use developments. The model predicts emissions for construction activities, area sources, and traffic associated with the project. The model uses the latest statewide emission inventory models for mobiles sources (i.e., EMFAC2007) and construction equipment (i.e., OFFROAD2007). The model is periodically updated to reflect most recent emissions estimates for source types and incorporate accuracies in estimating emission from land use activities. The latest version of this model (i.e., Version 9.2.4) was used in this analysis.

The model predicts emissions of CO_2. Although there are emissions of methane and nitrous oxide, which are more potent GHGs, these emissions are very small compared to CO_2 (i.e., less than three percent equivalent CO_2). As a result, these emissions were not calculated.

Construction Emissions

Project construction would involve emissions associated with equipment and vehicles used for

2 BAAQMD 2010. BAAQMD CEQA Thresholds of Significance. June.
3 BAAQMD. 2010. California Environmental Quality Act Air Quality Guidelines. May.
4 California Air Pollution Control Officers Association, 2008, *CEQA & Climate Change*, January.

demolition, grading, and construction of the project as well as emissions associated with manufacturing materials used to construct the project. The URBEMIS2007 model can be used to provide rough estimates of the emissions associated with construction equipment and vehicle activity. However, there are no reliable methods to estimate construction-related emissions associated with the manufacturing of project materials. BAAQMD did not adopt a construction-period emission based threshold for evaluating GHG emissions but does recommend they be calculated.

Operational Emissions

The development of in-fill projects located in urban areas within close proximity to transportation is likely to result in lower rates of GHG emissions. In addition, measures that reduce energy consumption and waste can be included in new development that reduces emissions. These would include energy-efficient construction methods, inclusion of solar photovoltaic panels to produce energy, passive solar design, appropriate landscape, water recycling systems, and waste diversion systems (e.g. collection of green waste and other recycling).

Mobile Sources. The URBEMIS2007 model was also used to estimate mobile source emissions from the project. This model is based on the CARB's EMFAC2007 on-road mobile source emission factor model. The modeling incorporated project-specific trip generation rates that were used in the traffic impact study[5]. The traffic study provided daily trip generation estimates for each project alternative. This trip generation rate was input to the model along with the project size and location. Default assumptions were used for the San Francisco Bay Area, with the exception that trip travel lengths were reduced to 5 miles to reflect the planned mixed-use nature of development in North San José. Passby trips were assumed for retail uses proposed under Alternative 2, since the type of retail proposed would serve the planned area. Effects for transit access, pedestrian and bicycle access, and mixed uses on project trips were accounted for in the model. BGM post processes the URBEMIS2007 output file to produce CO2e emissions. In addition, BGM accounts for the effects of the Paveley Rule and low carbon fuels standard for the build out year, which is assumed to be 2020.

Electricity Use Emissions. Emission from electricity consumption are considered to be indirectly produced by the project. URBEMIS2007 does not calculate these emissions, but they are calculated using BGM, which post-processes the URBEMIS2007 output. The project is committed to Green Building design features. Therefore, the project is assumed to achieve energy efficiency at a rate of at least 20 percent above the Title 24 standards. The residential electricity consumption rates are assumed in BGM, which assumes an emission rate based on a State average.

Natural Gas Usage. Emissions associated with natural gas usage are based on the post processing if the URBEMIS2007 output using BGM. BGM applies usage rates for typical land uses of these types and GHG emissions rates for natural gas based on the California Climate

5 Hexagon Transportation Consultants, Inc. 2010. *Memo from Robert Del Rio to Karen Mack (City of San Jose) regarding the Fox Mixed-Use Supplemental Traffic Analysis*. May.

Action Registry (CCAR)[6].

Water and Wastewater. The BGM post processes the URBEMIS2007 output to provide emissions associated with electricity demand to convey water and wastewater. These emissions are based on the BGM defaults and are relatively small.

Solid Waste. These emissions are also post processed using BGM. They account for emissions associated with waste transportation and land filling. Estimated distances to nearby landfills were estimated. Waste diversion was estimated at 61 percent.

GHG Emissions

Construction period annual emissions of GHG are reported in Table 1. These emissions are based on the output from URBEMIS2007 modeling, since BGM does not process construction period emissions. These are essentially emissions associated with construction equipment, trucks used to haul material and equipment, stationary equipment such as portable generators, and worker travel. Construction phases included demolition, fine site grading, building construction, and paving. Construction emissions were assumed to occur over a period of about three years. These emissions do not include those associated with the manufacturing of building materials. Since there are no significance thresholds for these temporary emissions, they are provided for informational purposes.

Table 1. Annual GHG Construction Emissions

	Annual Emissions in Metric Tons CO2e		
Year	**North San Jose Approved**	**Alternative 1**	**Alternative 2**
2011	335	627	683
2012	445	812	896
2013	168	288	316
Total	**948**	**1,727**	**1,895**

Project emissions are reported in Table 2. The proposed project is anticipated to have relatively low GHG emissions, which would be below the threshold proposed by BAAQMD. The relatively low emission rates are the result of less vehicle travel anticipated due to the mixture of uses (residential, employment, and neighborhood retail and services).

6 Climate Action Registry General Reporting Protocol, Version 3.1, January, 2009.

Table 2. Annual GHG Operational Emissions from the Fox Property Project

Emissions	Methodology	Annual Emissions in Metric Tons CO2e North San Jose Approved	Alternative 1	Alternative 2
Mobile Sources	URBEMIS2007/BGM - vehicle traffic	2,032	4,930	3,876
Natural Gas	URBEMIS2007/BGM - Based on natural gas for heating space/water and cooking	415	656	706
Electricity Use	BGM using URBEMIS2007 modeled building sizes and types	1,869	1,256	2,037
Solid Waste	BGM using URBEMIS2007 modeled building sizes and types	533	42	381
Area, water and waste water usage	URBEMIS2007/BGM	54	84	114
	Total	**4,902**	**6,968**	**7,114**
	Number of Residents + Employees		**2,156**	**2,624**
	CO2e emissions per capita		**3.2**	**2.7**

Conclusion

The proposed project would have total direct and indirect emissions that are below the GHG operational GHG efficiency threshold level proposed by BAAQMD for new projects. Because the project would be an in-fill type project located in an urban area with very good transit and pedestrian opportunities and include energy efficiency features, the per capita GHG emissions would be below the alternative GHG emission efficiency metric proposed by BAAQMD. These thresholds are identified in a final version of the Guidelines that was adopted by the BAAQMD Board of Directors in June 2010.

Attachment: Modeling Output

Fox Property Project

North San Jose Area

Source	Unmitigated Project-Baseline CO2e (metric tons/year)	Reported Mitigated Project-Baseline CO2e (metric tons/year)	Comments
NSJ Approved			
Transportation:	2,168	2,032	5-mile trip length
Area Source:	0	0	
Electricity:	2,338	1,869	Assume 20% reduction
Natural Gas:	518	415	Assume 20% reduction
Water & Wastewater:	56	54	
Solid Waste:	1,366	533	Assume 61% waste diversion
Agriculture:	-	-	
Off-Road Equipment:	-	-	
Refrigerants:	-	-	
Sequestration:	N/A	-	
Purchase of Offsets:	N/A	-	
Total:	**6,446**	**4,902**	
NSJ Alt 1 (Retail & Residential)			
Transportation:	5,904	4,930	5-mile trip length + Passby
Area Source:	4	4	
Electricity:	1,569	1,256	Assume 20% reduction
Natural Gas:	820	656	Assume 20% reduction
Water & Wastewater:	84	80	
Solid Waste:	109	42	Assume 61% waste diversion
Agriculture:	-	-	
Off-Road Equipment:	-	-	
Refrigerants:	-	-	
Sequestration:	N/A	-	
Purchase of Offsets:	N/A	-	
Total:	**8,490**	**6,968**	
NSJ Alt 2 (Office & Residential)			
Transportation:	4,640	3,876	5-mile trip length
Area Source:	4	4	
Electricity:	2,548	2,037	Assume 20% reduction
Natural Gas:	1,147	706	Assume 20% reduction
Water & Wastewat	115	110	
Solid Waste:	978	381	Assume 61% waste diversion
Agriculture:	-	-	
Off-Road Equipmer	-	-	
Refrigerants:	-	-	
Sequestration:	N/A	-	
Purchase of Offsets	N/A	-	
Total:	**9,433**	**7,114**	

7/2/2010 8:27:44 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\I&R Docs\2010\10-010 Fox GHG S Jose\Fox-approvedREV.urb924

Project Name: Fox NSJ-approved

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

7/2/2010 8:27:44 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2011 TOTALS (tons/year unmitigated)	335.33
2012 TOTALS (tons/year unmitigated)	445.38
2013 TOTALS (tons/year unmitigated)	168.80

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	0.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	2,864.95
TOTALS (tons/year, mitigated)	2,685.20
Percent Reduction	6.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	2,865.20

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

7/2/2010 8:27:44 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Natural Gas	
Hearth	
Landscape	0.25
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	0.25

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
General office building	2,864.95
TOTALS (tons/year, unmitigated)	2,864.95

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	CO2
General office building	2,685.20
TOTALS (tons/year, mitigated)	2,685.20

Operational Settings:

7/2/2010 8:27:44 AM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General office building		8.00	1000 sq ft	419.27	3,354.16	16,770.80
					3,354.16	16,770.80

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	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	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

7/2/2010 8:27:44 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
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)						
General office building				35.0	17.5	47.5

7/2/2010 8:31:21 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\I&R Docs\2010\10-010 Fox GHG S Jose\Fox-Alt 1REV.urb924

Project Name: Fox Alt 1

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
2011 TOTALS (tons/year unmitigated)	627.30
2012 TOTALS (tons/year unmitigated)	812.14
2013 TOTALS (tons/year unmitigated)	288.08

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	2.80
TOTALS (tons/year, mitigated)	2.80
Percent Reduction	0.00

7/2/2010 8:31:21 AM

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	7,801.65
TOTALS (tons/year, mitigated)	6,514.47
Percent Reduction	16.50

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	7,804.45
TOTALS (tons/year, mitigated)	6,517.27
Percent Reduction	16.49

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Natural Gas	
Hearth	2.29
Landscape	0.51
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	2.80

7/2/2010 8:31:21 AM

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	CO2
Natural Gas	
Hearth	2.29
Landscape	0.51
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, mitigated)	2.80

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

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

Percentage of residences with natural gas fireplaces changed from 55% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Condo/townhouse general	3,153.98
Strip mall	4,647.67
TOTALS (tons/year, unmitigated)	7,801.65

7/2/2010 8:31:21 AM

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	CO2
Condo/townhouse general	2,504.67
Strip mall	4,009.80
TOTALS (tons/year, mitigated)	6,514.47

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	15.00	6.38	dwelling units	650.00	4,147.00	18,153.49
Strip mall		65.13	1000 sq ft	150.00	9,769.50	26,939.40
					13,916.50	45,092.89

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0

7/2/2010 8:31:21 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	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	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
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)						
Strip mall				2.0	1.0	97.0

7/2/2010 8:43:13 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\I&R Docs\2010\10-010 Fox GHG S Jose\Fox-Alt 2REV.urb924

Project Name: Fox Alt 2

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

7/2/2010 8:43:13 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2011 TOTALS (tons/year unmitigated)	683.37
2012 TOTALS (tons/year unmitigated)	895.80
2013 TOTALS (tons/year unmitigated)	316.36

AREA SOURCE EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	2.80

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	6,131.71
TOTALS (tons/year, mitigated)	5,122.41
Percent Reduction	16.46

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	6,134.51

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

7/2/2010 8:43:13 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Natural Gas	
Hearth	2.29
Landscape	0.51
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	2.80

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

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

Percentage of residences with natural gas fireplaces changed from 55% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Condo/townhouse general	4,143.25
General office building	1,988.46
TOTALS (tons/year, unmitigated)	6,131.71

7/2/2010 8:43:13 AM

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	CO2
Condo/townhouse general	3,406.86
General office building	1,715.55
TOTALS (tons/year, mitigated)	5,122.41

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	15.00	7.39	dwelling units	650.00	4,803.50	24,017.50
General office building		7.76	1000 sq ft	300.00	2,328.00	11,640.00
					7,131.50	35,657.50

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.0	0.0	100.0	0.0
Light Truck < 3750 lbs	12.6	0.0	98.4	1.6
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0

7/2/2010 8:43:13 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	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	0.1	0.0	0.0	100.0
Motorcycle	3.2	40.6	59.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.0	5.0	5.0	5.0	5.0	5.0
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
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)						
General office building				35.0	17.5	47.5