Greenhouse Gas Analysis for the Centerpointe 78 Project, City of Escondido, California

Prepared for

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Acronyms

AB	Assembly Bill
BAU	Business as usual
CAFÉ	Corporate Average Fuel Economy Standards
CalEEMod	California Emissions Estimator Model
CalGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon dioxide
E-CAP	Escondido Climate Action Plan
EIR	Environmental Impact Report
EO	Executive Order
EPIC	University of San Diego School of Law, Energy Policy Initiatives Center
GHG	Greenhouse Gas
GWP	Global warming potential
LCFS	Low Carbon Fuel Standard
LEV III	Low Emission Vehicle III Standards
$MMTCO_2E$	Million metric tons of CO_2 equivalent
mpg	Miles per gallon
$MTCO_2E$	Metric tons of CO_2 equivalent
N_2O	Nitrous oxide
RPS	Renewables Portfolio Standard
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
Title 24	California Code of Regulations, Title 24 (i.e., California Building Code)
US EPA	US Environmental Protection Agency

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Executive Summary

This report evaluates potential greenhouse gas (GHG) impacts associated with the Centerpointe 78 project (project) located in the city of Escondido (City). The project site is currently developed with a vacant, approximately 30,000-square-foot auto dealership, which has relocated to new facilities. The project proposes to redevelop the 3-7-acre site into a 43,500 square-foot grocery market and a 3,200 square-foot quick service restaurant with drive-through facilities along with associated parking, access, and utility improvements.

The significance of the project's GHG emissions was evaluated against the City *CEQA Thresholds and Screening Tables*. The City uses 2,500 metric tons carbon dioxide equivalent ($MTCO_2E$) as the first screening threshold to determine if a project has potential to result in significant GHG contributions. If a project exceeds this level of emissions, additional analysis is necessary to demonstrate if it would have a cumulatively significant GHG impact. Projects that exceed the 2,500 $MTCO_2E$ screening level must demonstrate that the project would achieve GHG reductions that are consistent with goals established in the City's Escondido Climate Action Plan (E-CAP). This can be demonstrated through one of two methods: (1) a qualitative method using a checklist of GHG reduction measures contained in the Screening Tables from the City's *CEQA Thresholds and Screening Tables* document, or (2) a quantitative method demonstrating that the project would achieve a 20.6 percent reduction in GHG emissions when compared to an "unmitigated" project, which does not include any features to reduce GHG emissions.

Based on emission estimates, the increase in GHG emissions associated with the project would exceed the 2,500 $MTCO_2E$ screening criterion. For this analysis, the City's Screening Tables were used to demonstrate that the project would be consistent with the City's GHG reduction goals. The Screening Table method assigns points for project design features and project mitigation measures (collectively referred to as "feature"), and those points correspond to the minimum emissions reduction expected from each feature. The 100-point scale corresponds to approximately 26,807 $MTCO_2E$ of emissions reductions attributable to new development within the E-CAP, which is equivalent to a 20.6 percent reduction of new development GHG emissions (in aggregate) compared to an "unmitigated" 2010 condition. Projects that garner at least 100 points would be considered consistent with the reduction quantities anticipated in the City's E-CAP and would have a less than significant impact for GHG emissions.

Based on features included in the project, the project would achieve 100 points in GHG reductions. These reductions would be due to an increase in energy efficiency of the proposed buildings; the use of energy efficient appliances and heating and cooling systems; the installation of water efficient landscaping, irrigation systems, and plumbing fixtures; and a decrease in vehicle miles traveled due to the proximity of the project to residential and other commercial uses. Thus, the project would be consistent with the reduction quantities anticipated in the City's E-CAP and required by AB 32. The project would therefore have a less than significant GHG impact.

1.0 Introduction

This report evaluates the significance of the Centerpointe 78 project (project) located in the city of Escondido and the consistency of the project with the City's greenhouse gas (GHG) reduction goals established in the Escondido Climate Action Plan (E-CAP). To evaluate the incremental effect of project development on statewide emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem.

1.1 Understanding Global Climate Change

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed "ice ages," which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated interacting natural factors that include: volcanic eruptions that spew gases and particles (dust) into the atmosphere; the amount of water, vegetation, and ice covering the earth's surface; subtle changes in the earth's orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances not found in nature. This in turn has led to a marked increase in the emissions of gases shown to influence the world's climate. These gases, termed "greenhouse" gases, influence the amount of heat trapped in the earth's atmosphere. Because recently observed increased concentrations of GHGs in the atmosphere are related to increased emissions resulting from human activity, the current cycle of "global warming" is generally believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. Because it is the collective of human actions taking place throughout the world that contributes to climate change, it is quintessentially a global or cumulative issue.

1.2 Greenhouse Gases of Primary Concern

There are numerous GHGs, both naturally occurring and manmade. Table 1 summarizes some of the most common. Each GHG has variable atmospheric lifetime and global warming potential (GWP), which is indicated in the table below.

TABLE 1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES (YEARS)

Gas	Atmospheric Lifetime	100-year GWP	20-year GWP	500-year GWP
Carbon dioxide (CO_2)	50–200	1	1	1
Methane (CH_4) [1]	12	25	72	7.6
Nitrous oxide (N_2O)	114	298	289	153
HFC-23	270	14,800	12,000	12,200
HFC-32	4.9	675	2,330	205
HFC-125	29	3,500	6,350	1,100
HFC-134a	14	1,430	3,830	435
HFC-143a	52	4,470	5,890	1,590
HFC-152a	1.4	124	437	38
HFC-227ea	34.2	3,220	5,310	1,040
HFC-236fa	240	9,810	8,100	7,660
HFC-43-10mee	15.9	1,640	4,140	500
CF_4	50,000	7,390	5,210	11,200
C_2F_6	10,000	12,200	8,630	18,200
C_3F_8	2,600	8,830	6,310	12,500
C_4F_{10}	2,600	8,860	6,330	12,500
c-C_4F_8	3,200	10,300	7,310	14,700
C_5F_{12}	4,100	9,160	6,510	13,300
C_6F_{14}	3,200	9,300	6,600	13,300
SF_6	3,200	22,800	16,300	32,600

SOURCE: IPCC 2007

[1] The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

The atmospheric lifetime of the gas is the average time a molecule stays stable in the atmosphere. Most GHGs have long atmospheric lifetimes, staying in the atmosphere hundreds or thousands of years. GWP is a measure of the potential for a gas to trap heat and warm the atmosphere. Although GWP is related to its atmospheric lifetime, many other factors including chemical reactivity of the gas also influence GWP. GWP is reported as a unitless factor representing the potential for the gas to affect global climate relative to the potential of carbon dioxide (CO_2). Because CO_2 is the reference gas for establishing GWP, by definition its GWP is 1. Although methane (CH_4) has a shorter atmospheric lifetime than CO_2, it has a 100-year GWP of 25; this means that CH_4 has 25 times more effect on global warming than CO_2 on a molecule-by-molecule basis.

The GWP is officially defined as (U.S. Environmental Protection Agency [US EPA] 2010):

> The cumulative radiative forcing—both direct and indirect effects—integrated over a period of time from the emission of a unit mass of gas relative to some reference gas.

All of the gases in Table 1 are produced by both biogenic (natural) and anthropogenic (human) sources. These are the GHGs of primary concern in this analysis. CO_2 would be emitted by the project due to the combustion of fossil fuels in vehicles (including construction), from electricity generation and natural gas consumption, water use, and from solid waste disposal. Smaller amounts of CH_4 and nitrous oxide (N_2O) would be emitted from the same project operations.

2.0 Project Description

The Centerpointe 78 project (hereafter "project") is located at 925 North Broadway in the city of Escondido, California. The 3.7-acre site is bounded by Lincoln Avenue to the north, Broadway to the east, Highway 78 to the south, and residences to the west. The project proposes to redevelop the project site into a market and a restaurant with associated parking, access, and utility improvements. Figure 1 shows the regional location of the project. Figure 2 shows an aerial photograph of the project and vicinity. Figure 3 shows the proposed site plan.

The proposed market uses would consist of a specialty local grocery store. The approximately 43,500-square-foot market building would be located in the western portion of the site. The back area of the building would include a loading dock area with two large rollup doors. The 3,200-square-foot restaurant pad would be located in the eastern portion of the site. No building plans are proposed for the restaurant at this time. The proposed quick-service restaurant (e.g., taco shop or coffee shop) would include a one-way, 12-foot wide drive-through wrapping around the southern and eastern side of the pad. The project would also include 199 parking spaces.

Project Location

FIGURE 1

Regional Location

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Image Source: SanGIS (flown May 2012)

0 Feet 250

Project Boundary

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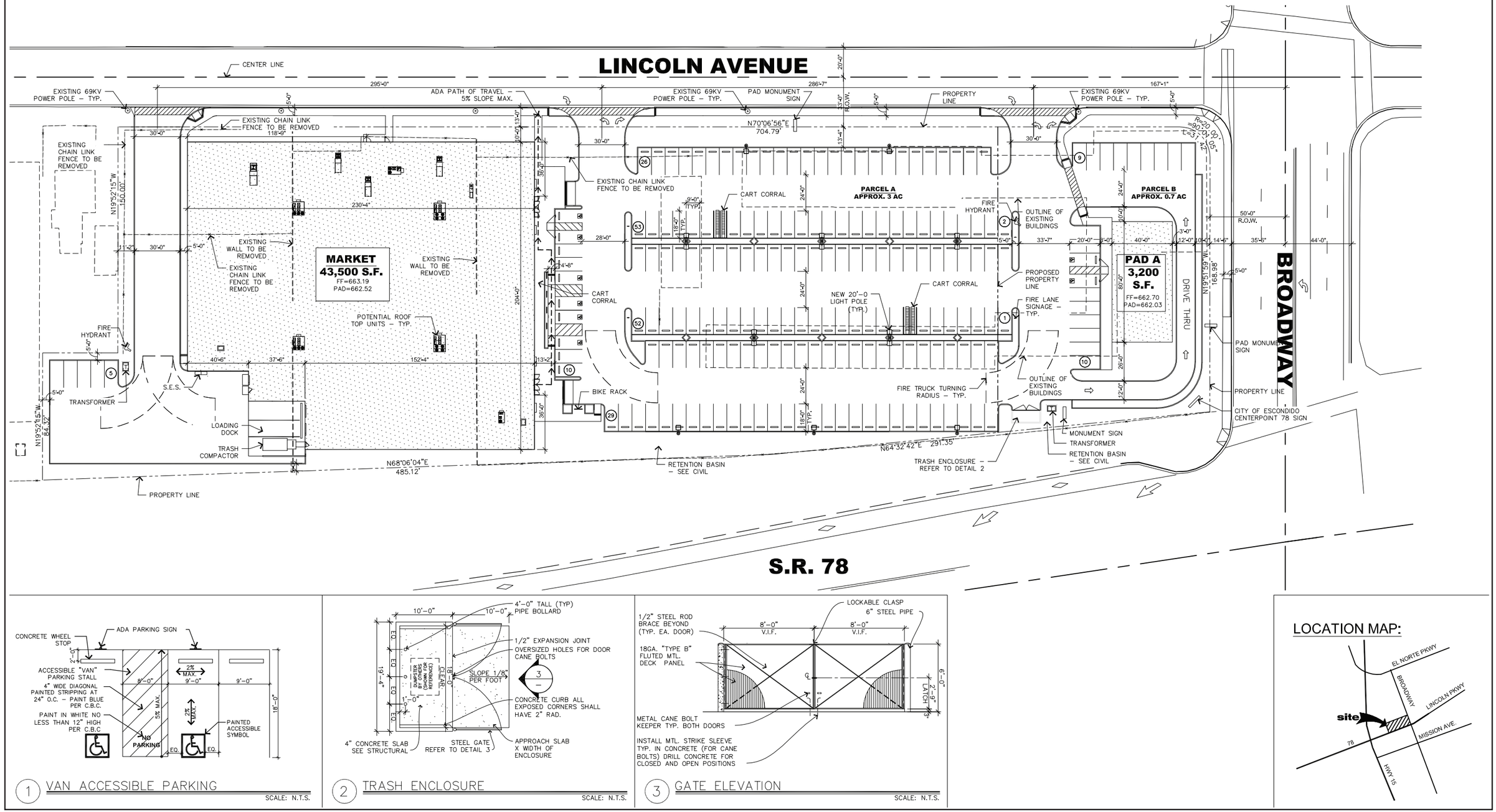
FIGURE 2

Aerial Photograph

Map Source: RKAA Architects



1 VAN ACCESSIBLE PARKING

SCALE: N.T.S.

2 TRASH ENCLOSURE

SCALE: N.T.S.

3 GATE ELEVATION

SCALE: N.T.S.

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FIGURE 3
Site Plan

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3.0 Environmental Setting

3.1 State, Regional, and Local GHG Inventories

3.1.1 State GHG Inventory

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO_2 equivalent ($MMTCO_2E$). Table 2 shows the estimated statewide GHG emissions for the years 1990, 2008, and 2011.

TABLE 2
CALIFORNIA GHG EMISSIONS BY SECTOR IN 1990, 2008, AND 2011

Sector	1990[1] Emissions in $MMTCO_2E$ (% total)[2]	2008[3] Emissions in $MMTCO_2E$ (% total)[2]	2011 Emissions in $MMTCO_2E$ (% total)[2]
Sources			
Agriculture	23.4 (5%)	33.9 (7%)	32.2 (7%)
Commercial	14.4 (3%)	15.6 (3%)	15.6 (3%)
Electricity Generation	110.6 (26%)	120.1 (25%)	86.6 (19%)
High GWP	--	11.5 (2%)	15.2 (3%)
Industrial	103.0 (24%)	89.3 (18%)	93.2 (21%)
Recycling and Waste	--	6.7 (1%)	7.0 (2%)
Residential	29.7 (7%)	29.0 (6%)	29.9 (7%)
Transportation	150.7 (35%)	177.2 (37%)	168.4 (38%)
Forestry (Net CO_2 flux)[4]	-6.7	--	--
Not Specified	1.3	--	--
TOTAL	**426.6**	**483.2**	**448.1**

SOURCE: California Energy Commission 2014, CARB 2007, CARB 2013a
1 1990 data was retrieved from the CARB 2007 source.
2 Percentages may not total 100 due to rounding.
3 2008 and 2011 data was retrieved from the CARB 2013a source.
4 The inventory totals for 2008 and 2011 did not include Forestry or Not Specified sources.

As shown in Table 2, statewide GHG source emissions totaled approximately 427 $MMTCO_2E$ in 1990, 483 $MMTCO_2E$ in 2008, and 448 $MMTCO_2E$ in 2011. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. According to CARB, most of the reductions since 2008 have been driven by economic factors (recession), previous energy efficiency actions, and the renewable portfolio standard (RPS; CARB 2013a). Transportation-related

emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

3.1.2 Regional GHG Inventory

The San Diego County regional GHG emissions inventory was prepared by the University of San Diego School of Law, Energy Policy Initiatives Center (EPIC). The inventory takes into account the unique characteristics of the region. Their 2010 emissions inventory for San Diego is shown in Table 3. The sectors included in this inventory are somewhat different from those in the statewide inventory, which is based on the 2008 Scoping Plan categories.

TABLE 3
SAN DIEGO COUNTY GHG EMISSIONS BY SECTOR IN 2010

Sector	2010 Emissions	
	$MMTCO_2E$	% total[1]
Agriculture/Forestry/Land Use	0.05	0.2%
Waste	0.6	1.8%
Electricity	8.3	25.0%
Natural Gas Consumption	2.9	8.7%
Industrial Processes & Products	1.8	5.4%
On-Road Transportation	14.4	43.4%
Off-Road Equipment & Vehicles	1.4	4.2%
Civil Aviation	1.9	5.7%
Rail	0.32	1.0%
Water-Borne Navigation	0.1	0.3%
Other Fuels/Other	1.58	4.8%
Land Use Wildfires	0.28	0.8%
Development (Loss of Vegetation)	0.18	0.5%
Sequestration from Land Cover	-0.66	-0.5%
TOTAL	**33.15**	100%

SOURCE: University of San Diego Energy Policy Initiatives Center 2013.
[1] Percentages may not total 100 due to rounding.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

3.1.3 Local GHG Inventory

The City's 2010 Community-wide Emissions Inventory was adopted in 2013 as a part of the E-CAP (see Section 4.2.3, Climate Change Scoping Plan). Table 4 summarizes the inventory. As shown, the primary sources of GHG emissions in Escondido are energy (electricity and natural gas) and transportation.

TABLE 4
ESCONDIDO 2010 COMMUNITY-WIDE GHG EMISSIONS BY SOURCE

Category	2010 Emissions	
	$MTCO_2E$	% total
Energy	395,565	44.6%
Transportation	368,622	41.6%
Area Sources	52,559	5.9%
Solid Waste	41,724	4.7%
Water and Wastewater	25,360	2.9%
Construction	2,288	0.3%
TOTAL	**886,118**	100%

SOURCE: City of Escondido 2013a

3.2 Project Site Emissions

As shown in Figure 2, the project site is currently developed with a vacant automotive dealership use. The automotive dealership moved their operations to a facility across the street in 2007 and the on-site buildings have been vacant since that time. The project site does not currently generate any vehicle trips and is not a source of GHG emissions.

4.0 Regulatory Setting

In response to rising concern associated with increasing GHG emissions and global climate change impacts, several plans and regulations have been adopted at the international, national, and state levels with the aim of reducing GHG emissions. The following is a discussion of the federal, state, and local plans and regulations most relevant to the project.

4. 1 Federal

The federal government, U.S. Environmental Protection Agency (US EPA), and other federal agencies have many federal level programs and projects to reduce GHG emissions.

4.1.1 Environmental Protection Agency

The US EPA provides technical expertise and encourages voluntary reductions from the private sector.

Energy Star is a joint program of US EPA and the US Department of Energy, which promotes energy-efficient products and practices. Tools and initiatives include the Energy Star Portfolio Manager, which helps track and assess energy and water

consumption across an entire portfolio of buildings, and the Energy Star Most Efficient 2013, which provides information on exceptional products that represent the leading edge in energy-efficient products in the year 2013 (US EPA 2013).

The US EPA also partners with the public sector, including states, tribes, localities, and resource managers, to encourage smart growth, sustainability preparation, and renewable energy and climate change preparation. These initiatives include the Clean Energy–Environment State Partnership Program, the Climate Ready Water Utilities Initiative, the Climate Ready Estuaries Program, and the Sustainable Communities Partnership (US EPA 2014).

4.1.2 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the US. While the standards had not changed since 1990, as part of the Energy and Security Act of 2007, the CAFE standards were increased for new light-duty vehicles to achieve the equivalent of 35 miles per gallon (mpg) by 2020. In May 2009, plans were announced to further increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 mpg by 2016. In October 2012, the US EPA and National Highway Traffic Safety Administration issued a final rule for new light-duty vehicles for model years 2017 to 2025 to achieve an equivalent of 54.5 mpg (Federal Register 2011). With improved gas mileage, fewer gallons of transportation fuel would be combusted to travel the same distance, thereby reducing nationwide GHG emissions associated with vehicle travel.

4.2 State

The State of California has adopted a number of plans and regulations aimed at identifying statewide and regional GHG emissions caps, GHG emissions reduction targets, and actions and timelines to achieve the target GHG reductions.

4.2.1 Executive Orders

4.2.1.2 EO-S-3-05—Statewide GHG Emission Targets

This executive order (EO) established the following GHG emission reduction targets for the state of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels;
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directs the Secretary of the California EPA to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. With regard to impacts, the report shall also prepare and report on mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years.

4.2.1.3 EO-B-30-15—2030 Statewide GHG Emission Goal

This EO, issued on April 29, 2015, establishes an interim GHG emission reduction goal for the state of California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This EO also directs all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05. Additionally, this EO directs CARB to update its Climate Action Scoping Plan (Scoping Plan) to address the 2030 goal. Therefore, in the coming months, CARB is expected to develop statewide inventory projection data for 2030, as well as commence its efforts to identify reduction strategies capable of securing emission reductions that allow for achievement of the EO's new interim goal.

4.2.2 Assembly Bill 32—California Global Warming Solutions Act

In response to EO S-3-05, the California Legislature passed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and thereby enacted Sections 38500–38599 of the California Health and Safety Code. The heart of AB 32 is its requirement that CARB establish an emissions cap and adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. AB 32 also requires CARB to adopt a plan by January 1, 2009 indicating how emission reductions would be achieved from significant GHG sources via regulations, market mechanisms, and other actions.

Relevant to the project, AB 32 also contains a Mandatory Commercial Recycling Measure, which focuses on increased commercial waste diversion as a method to reduce GHG emissions. It is designed to achieve a reduction in GHG emissions of 5 $MMTCO_2E$. To achieve the measure's objective, an additional 2 to 3 million tons of materials annually will need to be recycled from the commercial sector by the year 2020 and beyond.

4.2.3 Climate Change Scoping Plan

As directed by AB 32, in 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change, which identifies the main strategies California will implement to achieve the GHG reductions necessary to reduce forecasted business-as-usual (BAU) emissions in 2020 to the state's historic 1990 emissions level. As indicated in Table 5, the reduction strategies identified in the Scoping Plan are directed at the sectors with the largest GHG emissions contributions—transportation and electricity generation—and involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities.

In 2008, as part of its adoption of the Scoping Plan, CARB estimated that annual statewide GHG emissions were 427 $MMTCO_2E$ in 1990 and would reach 596 $MMTCO_2E$ by 2020 under a BAU condition (CARB 2008). To achieve the mandate of AB 32, CARB determined that a 169 $MMTCO_2E$ (or approximate 28.5 percent) reduction in BAU emissions was needed by 2020. The 2020 emissions estimate used in the Scoping Plan was developed using pre-recession data and reflects GHG emissions expected to occur in the absence of any reduction measures in 2010 (CARB 2011a).

In 2011, CARB revised its 2020 BAU projections to account for the economic downturn and to account for laws that had taken effect but were not included in the 2008 calculations. Based on that effort, CARB updated the projected 2020 emissions to 507 $MMTCO_2E$ (CARB 2011a). With respect to the new economic data alone, CARB determined that the economic downturn reduced the 2020 BAU by 55 $MMTCO_2E$; as a result, achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 (not 28.5) percent from the 2020 BAU. With the additional implementation of two reduction measures not previously included in the BAU calculations, Pavley I and the Initial RPS, achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 15.8 (not 28.5) percent (CARB 2011a).

Most recently, in 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update). The stated purpose of the First Update is to "highlight […] California's success to date in reducing its GHG emissions and lay […] the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050" (CARB 2014). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32. The Update noted that California could reduce emissions further by 2030 to levels in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals (CARB 2014). The First Update to the Scoping Plan contains key actions to drive the state toward developing and deploying the most appropriate options to achieve long-term GHG emission reductions. Relevant to this project are recommended actions for the waste and energy sectors.

TABLE 5
CARB SCOPING PLAN-RECOMMENDED GHG REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted Towards 2020 Target	
	$MMTCO_2E$	% total[2]
REDUCTIONS FROM CAPPED SECTORS AND COMPLEMENTARY MEASURES	**146.7**	
California Light-duty Vehicle Greenhouse Gas Standards • Implement Pavley Standards • Develop LEV III light-duty vehicle standards	31.7	22%
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase combined heat and power generation by 30,000 gigaWatt hours (GWh) • Solar Water Heating (AB 1470 goal)	26.3	18%
Renewables Portfolio Standard (RPS) (33% by 2020)	21.3	14%
Low Carbon Fuel Standard	15.0	10%
Regional Transportation-related GHG Targets[1]	5.0	4%
Vehicle Efficiency Measures	4.5	3%
Goods Movement • Ship Electrification at Ports • System-wide Efficiency Improvements	3.7	3%
Million Solar Roofs	2.1	2%
Medium/Heavy Duty Trucks • Heavy-duty Vehicle Greenhouse Gas Emissions Reduction (Aerodynamic Efficiency) • Medium- and Heavy-duty Vehicle Hybridization	1.4	<1%
High Speed Rail	1.0	<1%
Industrial Measures (for sources covered under cap & trade program) • Refinery Measures • Energy Efficiency and Co-Benefits Audits	0.3	<.5%
Additional Reductions Necessary to Achieve the Cap	34.4	23%
REDUCTIONS FROM UNCAPPED SECTORS	**27.3**	
Industrial Measures (for sources not covered under cap & trade program) • Oil and Gas Extraction and Transmission	1.1	
High Global Warming Potential Gas Measures	20.2	
Sustainable Forests	5.0	
Recycling and Waste (landfill methane capture)	1.0	
TOTAL REDUCTIONS COUNTED TOWARDS 2020 TARGET	**174.0**[3]	

SOURCE: Table 2 of CARB 2008.

[1] This number represents an estimate of what may be achieved from local land use changes. It is not the Senate Bill 375 regional target. CARB will establish regional targets for each Metropolitan Planning Organization following input of the Regional Targets Advisory Committee and a public stakeholders' consultation process per Senate Bill 375.

[2] Percentages are relative to the capped sector subtotal of 146.7 $MMTCO_2E$, and may not total 100 due to rounding.

[3] The total reduction for the recommended measures slightly exceeds the 169 $MMTCO_2E$ of reductions estimated in the BAU 2020 Emissions Forecast. This is the net effect of adding several measures and adjusting the emissions reduction estimates for some other measures.

The key recommended actions for the waste sector include policies to eliminate the disposal of organic materials at landfills, development of waste management goals, and improve recycled-content procurement. According to the Scoping Plan, "meeting the AB 341 mandate 75 percent recycling goal is the best path forward to maximizing GHG emissions reductions from the Waste management Sector." AB 341 is further discussed in Section 4.2.5.5, AB 32 and project consistency with AB 341 is discussed further in Section 7.2, Consistency Analysis.

The key recommended actions for the energy sector include more energy from renewable sources in the state's electricity mix. Goals include providing 33 percent of the state's electricity needs through renewable energy sources by 2020. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Potential renewable energy associated with the project is discussed in Section 7.2, Consistency Analysis.

4.2.4 Transportation-related Emissions Reductions

Transportation accounts for the largest share of the state's GHG emissions. Accordingly, a large share of the reduction of GHG emissions from the recommended measures addresses this sector. CARB's method is a comprehensive, three-prong strategy: reducing GHG emissions from vehicles, reducing the carbon content of the fuel these vehicles burn, and reducing the miles these vehicles travel.

4.2.4.1 AB 1493—Pavley GHG Vehicle Standards

AB 1493 (Pavley), enacted in 2002, directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light-duty trucks to the maximum extent technologically feasible, beginning with the 2009 model year. CARB adopted these regulations (termed "Pavley I") as a discrete early action measure pursuant to AB 32 and estimates that full implementation of Pavley I will reduce GHG emissions from California passenger vehicles by about 26 $MMTCO_2E$ (CARB 2011a and 2011b).

CARB has also adopted a second phase of the Pavley regulations that covers model years 2017 to 2025. These regulations were originally termed "Pavley II" but are now referred to as either the "Low Emission Vehicle III" (LEV III) standards or the "Advanced Clean Cars Program." In this report, they are referred to as the LEV III standards.

CARB has adopted a new approach to passenger vehicles–cars and light trucks–by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards, which includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2013b).

4.2.4.2 EO S-01-07—Low Carbon Fuel Standard

EO S-01-07 directed that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a Low Carbon Fuel Standard (LCFS). CARB adopted the LCFS as a discrete early action measure pursuant to AB 32 and includes the LCFS as a reduction measure in its Scoping Plan (see Table 5). The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean low-carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low-carbon fuels such as biofuels, electricity, and hydrogen by taking into consideration the full life cycle of GHG emissions.

4.2.4.3 Regional Transportation-related GHG Targets

The Regional Transportation-related GHG Targets measure included in the Scoping Plan identifies policies to reduce transportation emissions through changes in future land use patterns and community design, as well as through improvements in public transportation that reduce vehicle miles traveled. Improved planning and the resulting development are seen as essential for meeting the 2050 emissions target (CARB 2008).

4.2.4.4 Senate Bill 375—Regional Emissions Targets

Senate Bill 375 requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan measure described above. Its purpose is to align regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations to reduce GHG emissions by promoting high-density mixed-use developments around mass transit hubs.

4.2.4.5 Tire Pressure Program

The purpose of this regulation is to reduce GHG emissions from vehicles operating with inflated tires by inflating them to the recommended tire pressure rating. Automotive service providers, among other requirements, must check and inflate each vehicle's tires to the recommended tire pressure rating at the time of performing any automotive maintenance or repair service; indicate on the vehicle service invoice that a tire inflation service was completed and the tire pressure measurements after the service were performed. A copy of the service invoice must be kept for a minimum of three years, and the vehicle service invoice shall be available to the CARB or its authorized representative upon request.

4.2.5 Non-transportation-related Emissions Reductions

In the energy sector, Scoping Plan measures aim to provide better information and overcome institutional barriers that slow the adoption of cost-effective, energy-efficiency technologies. They include enhanced energy-efficiency programs to provide incentives for customers to purchase and install more efficient products and processes, and building and appliance standards to ensure that manufacturers and builders bring improved products to market. Over the long term, the recommended measures will increase the amount of electricity from renewable energy sources and improve the energy efficiency of industries, homes, and buildings. While energy efficiency accounts for the largest emissions reductions from this sector, other applicable land development measures, such as water conservation, materials use and waste reduction, and green building design and development practices, achieve additional emissions reduction.

4.2.5.1 Renewables Portfolio Standard

The Renewables Portfolio Standard (RPS) promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a mandate to achieve a 20 percent renewable energy mix by 2020 (referred to as the "Initial RPS"), the mandate has been accelerated and increased to 33 percent by 2020. The purpose of the RPS, upon full implementation, is to provide 33 percent of the state's electricity needs through renewable energy sources by 2020 (CARB 2008). Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

4.2.5.2 California Code of Regulations, Title 24, Part 6—California Energy Code

The California Code of Regulations, Title 24, Part 6 is the California Energy Code. This code establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. The most recent amendments to the Energy Code, known as 2013 Title 24, or the 2013 Energy Code, became effective January 1, 2014. The 2013 Energy Code provides mandatory energy-efficiency measures as well as voluntary tiers for increased energy efficiency. The 2008 Title 24 was more energy efficient than the former 2005 Title 24 Energy Code. The 2013 Energy Code is anticipated to result in 25 percent energy savings over the 2008 Title 24 standards (Imperial Valley Economic Development Corporation 2013; California Energy Commission 2014). The reference to 2005 Title 24 is relevant in that many of the state's long-term energy and GHG reduction goals identify energy-saving targets relative to 2005 Title 24.

New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission. The compliance reports must demonstrate a building's energy performance through use of California Energy Commission-approved energy performance software that shows iterative increases in energy efficiency given selection of various heating, ventilation, and air conditioning; sealing; window glazing; insulation; and other components related to the building envelope. Title 24 governs energy consumed by the major building envelope systems such as space heating, space cooling, water heating, some aspects of the fixed lighting system, and ventilation. Non-building energy use, or "plug-in" energy use (such as appliances, equipment, electronics, plug-in lighting), are independent of building design and are not subject to Title 24.

4.2.5.3 California Code of Regulations, Title 24, Part 11— California Green Building Standards Code (CalGreen)

CalGreen instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial and low-rise residential buildings, state-owned buildings, schools, and hospitals. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory requirements and may adopt CalGreen with amendments for stricter requirements.

The mandatory standards require:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels;
- 50 percent construction/demolition waste diverted from landfills;
- mandatory inspections of energy systems to ensure optimal working efficiency; and
- requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards.

The voluntary standards require:

- Tier I – 15 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, cool/solar reflective roof; and
- Tier II – 30 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving, 30 percent cement reduction, cool/solar reflective roof.

Similar to the compliance reporting procedure described above for demonstrating code compliance under Title 24, Part 6, in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

4.3 Local

4.3.1 Escondido General Plan

The City General Plan was last updated in May 2012. The Resource Conservation Element contains air quality and climate protection policies aimed at reducing GHG emissions. The overall intent of these policies is to support climate protection actions, while retaining flexibility in the design of implementation measures, which could be influenced by new scientific research, technological advances, environmental conditions, or state and federal legislation. As such, these measures include policies such as "implementing land use patterns that reduce automobile dependence" and "promoting local agriculture."

4.3.2 E-CAP

To address GHG emissions, the City adopted the E-CAP with the target of reducing GHG emissions within Escondido by 15 percent below existing levels by 2020 (City of Escondido 2013a). The E-CAP includes GHG inventories for 2010 and GHG forecasts for 2020 and 2035. The E-CAP identifies local measures to reduce transportation, energy, area source, water, solid waste, and construction emissions in 2020. Local GHG reductions would come from improvements to residential and commercial building energy efficiency (45.8 percent), revised land use policies, and increased public transportation (33.9 percent), and implementation of a Waste Disposal Program (18.1 percent).

5.0 Significance Criteria and Analysis Methodology

5.1 Determining Significance

Adopted December 4, 2013, the City's *CEQA Thresholds and Screening Tables* provides guidance on how to assess the significance of GHG emissions (City of Escondido 2013b). City guidance recognizes that individual projects do not generate enough GHG emissions to have a significant direct impact to the environment; however, projects do contribute to cumulative emissions that may have a significant effect on the environment. Thus, the City guidance follows the 90th percentile capture-rate concept. Guidance identifies a threshold for GHG emissions such that 90 percent of the emissions from all projects would exceed that threshold and be required to be reduced. Figure 4 below is a flow chart from that guidance which summarizes how projects are evaluated.

The City's Guidance includes a screening level of 2,500 $MTCO_2E$ to determine the need for additional analysis of project emissions. Where a project's emission are projected to exceed 2,500 $MTCO_2E$, further analysis with respect to the City's Guidance is required.

Projects that exceed the 2,500 $MTCO_2E$ screening level must demonstrate that the project would achieve GHG reductions that area consistent with City goals established in the E-CAP. This can be demonstrated through one of two methods: (1) a qualitative method using a list of GHG reduction measures contained in the Screening Tables from the City's *CEQA Thresholds and Screening Tables* document; or (2) a quantitative method demonstrating that the project would achieve a 20.6 percent reduction in GHG emissions when compared to an "unmitigated" project.

The purpose of the Screening Tables is to provide guidance in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated into development projects. The Screening Table method assigns points for project design features and project mitigation measures (collectively referred to as "feature"). Point values correspond to the minimum emissions reduction expected from each feature. The 100-point scale corresponds to an approximate 20.6 percent reduction of GHG emissions from new development as compared to an "unmitigated" condition, which does not include any features to reduce GHG emissions. Projects that garner at least 100 points would be considered consistent with the reduction quantities anticipated in the City's E-CAP on a project level. As such, those projects would be determined to have a less than significant impact for GHG emissions.

Source: City of Escondido - 2013

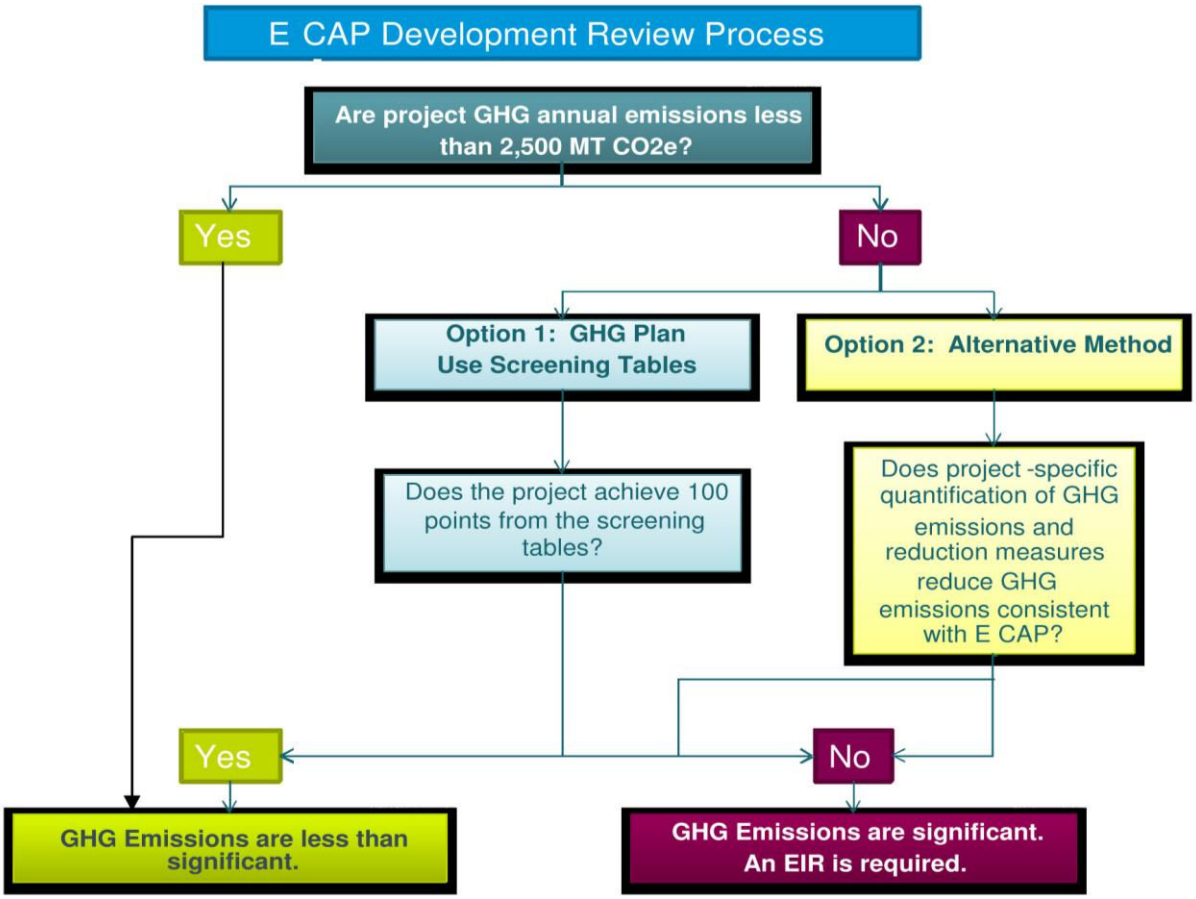

FIGURE 4

Escondido GHG Impact
Significance Determination Process

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Alternatively, a project may demonstrate consistency without the use of the Screening Tables by demonstrating a 20.6 percent reduction in GHG emissions when compared to its "unmitigated" (business as usual) emissions. The E-CAP includes a forecast of 2020 "unmitigated" emissions from a benchmark of 2010 emissions. Thus, calculation of "unmitigated" project GHG emissions is a calculation of what the project's GHG emissions would be under average efficiency assumptions for 2010. Project proponents then must calculate their estimate of current GHG emissions including any post-2010 California regulations and applicant-proposed reduction measures to determine if the project would provide a minimum 20.6 percent reduction over the "unmitigated" project.

5.2 Methodology and Assumptions

To evaluate the project's GHG emissions, emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2 (California Air Pollution Control Officers Association [CAPCOA] 2013). CalEEMod program is a tool used to estimate air quality and GHG emissions resulting from land development projects in the state of California. CalEEMod was developed with the participation of several state air districts including the San Diego Air Pollution Control District. Emissions sources modeled by CalEEMod include construction (off-road vehicles), mobile (on-road vehicles), area (fireplaces, consumer products [cleansers, aerosols, solvents], landscape maintenance equipment, architectural coatings), water and wastewater, and solid waste sources.

All GHG emissions calculated in this analysis are estimated in terms of total $MTCO_2E$. The analysis methodology and input data are described in the following sections. Where project-specific data was not available, model inputs were based on information provided in the CalEEMod User's Guide (CAPCOA 2013). The Attachment to this report includes the complete CalEEMod output files.

5.2.1 Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through combustion of diesel and gasoline in on-road construction vehicles and the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted through the energy use embodied in water use for fugitive dust control. Every phase of the construction process, including demolition, grading, paving, and building, emits GHGs in volumes proportional to the quantity and type of construction equipment used. Construction equipment was based on the CalEEMod defaults for each phase.

GHG emissions associated with each phase of project construction are calculated by multiplying the total fuel consumed by the construction equipment and worker trips by applicable emission factors. The number and pieces of construction equipment are

calculated based on the project-specific design. In the absence of project-specific construction information, equipment for all phases of construction is estimated based on the size of the land use. CalEEMod defaults for construction phasing equipment, worker trips, and vendor trips were used.

Construction emissions are calculated for each year of construction activity based on the construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year has varying quantities of GHG emissions. However, to provide a method for assessing the impacts of the overall project, the South Coast Air Quality Management District (SCAQMD) recommend that total construction GHG emissions resulting from a project be amortized over 30 years and added to operational GHG emissions (SCAQMD 2009).

5.2.2 Vehicle Emissions

Transportation-related GHG emissions comprise the largest sector contributing to inventoried statewide GHG emissions, accounting for 38 percent of the total statewide emissions in 2011 (CARB 2013a). GHG emissions from vehicles come from the combustion of fossil fuels in vehicle engines. The vehicle emissions are calculated based on the vehicle type and the trip rate for each land use. The vehicle emission factors and fleet mix used in CalEEMod are derived from CARB's Emission Factors 2011 model, which includes GHG-reducing effects from the implementation of Pavley I (Clean Car Standards) and the Low Carbon Fuel Standard, and are thus considered in the calculation of standard project emissions. Trip generation rates were obtained from the traffic report prepared for the project (RK Engineering Group, Inc. 2015). The project would generate 8,605 average daily trips. San Diego Association of Government's average regional trip length of 5.8 miles was used (2014). All other CalEEMod default trip characteristics were used.

5.2.3 Energy Use Emissions

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. GHGs are emitted during the generation of electricity from fossil fuels off-site in power plants. These emissions are considered indirect but are calculated in CalEEMod as associated with a building's operation. Electric power generation accounts for the second largest sector contributing to both inventoried and projected statewide GHG emissions. Combustion of fossil fuel emits criteria pollutants and GHGs directly into the atmosphere. When this occurs in a building this is considered a direct emissions source associated with that building. CalEEMod estimates emissions from the direct combustion of natural gas for space and water heating.

CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the project location and utility provider.

Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.).

Energy consumption values are based on the California Energy Commission-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies, which identify energy use by building type and climate zone. Because these studies are based on older buildings, adjustments have been made in CalEEMod to account for changes to Title 24 building codes. CalEEMod is based on the 2008 Title 24 energy code (part 6 of the building code). The effects of the State Building Code required the calculation of electricity and natural gas emissions based on the 2008 Title 24 energy code consumption rates to generate the initial emissions. A separate calculation was subsequently performed to account for the increase in energy efficiency standards of the 2013 Title 24 over the current 2008 Title 24. This involved a 21.8 decrease in GHG emissions from electricity sources and a 16.8 percent reduction in GHG emission from natural gas sources for non-residential buildings (California Energy Commission 2014).

5.2.4 Area Source Emissions

Area sources include GHG emissions that would occur from the use of fireplaces and landscaping equipment, as well as from the use of consumer products and architectural coatings. The use of fireplaces directly emits CO_2 from the combustion of natural gas, wood, or biomass, some of which are classified as biogenic. However, the project would not include fireplaces.

The use of landscape equipment emits GHGs associated with the equipment's fuel combustion. The landscaping equipment values were derived from the 2011 In-Use Off-Road Equipment Inventory Model (CARB 2011c).

5.2.5 Water and Wastewater Emissions

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply,

distribute, and treat the water and wastewater. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both CH_4 and N_2O.

GHG emissions associated with supplying and treating the water and wastewater are calculated for this project. The indoor and outdoor water use consumption data for each land use subtype comes from the Pacific Institute's *Waste Not, Want Not: The Potential for Urban Water Conservation in California* 2003 (as cited in CAPCOA 2013). Based on that report, a percentage of total water consumption was dedicated to landscape irrigation. This percentage was used to determine outdoor water use. Wastewater generation was similarly based on a reported percentage of total indoor water use (CAPCOA 2013). Additionally, the project would be subject to 2013 Title 24 Part 11 standards, also known as the California Green Building Standards. Thus, in order to demonstrate compliance with the 2013 Title 24 Part 11 standards, a 20 percent increase in indoor water use efficiency was included in the water consumption calculations.

The electricity intensity values for various phases of supplying and treating water are derived from the California Energy Commission's 2006 *Refining Estimates of Water-related Energy Use in California*. The water/wastewater emissions for the analysis were calculated by multiplying the total projected water/wastewater demand by the applicable water electricity intensities and the utility intensity GHG factors.

5.2.6 Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. To calculate the GHG emissions generated by disposing of solid waste for the project, the total volume of solid waste was calculated using waste disposal rates identified by California Department of Resources Recycling and Recovery. The methods for quantifying GHG emissions from solid waste are based on the Intergovernmental Panel on Climate Change method, using the degradable organic content of waste. GHG emissions associated with the project's waste disposal were calculated using these parameters.

6.0 GHG Emissions Calculations

Projects are evaluated first against the City's screening level threshold of 2,500 $MTCO_2E$. Projects that would surpass the 2,500 $MTCO_2E$ screening threshold may demonstrate consistency using Screening Tables from the City guidance or an alternative method demonstrating a 20.6 percent reduction in GHG emissions when compared to an "unmitigated" project.

Based on the methodology summarized in Section 5.2, Methodology and Assumptions, the primary sources of direct and indirect GHG emissions have been calculated. Table 6 summarizes the project emissions. The complete model outputs for the project are included in the Attachment.

TABLE 6
PROJECT GHG EMISSIONS
($MTCO_2E$ PER YEAR)

Emission Source	Project GHG Emissions
Vehicles	3,480
Energy Use	650
Area Sources	0
Water Use	28
Solid Waste Disposal	128
Construction	41
TOTAL	**4,327**

As shown, the increase in GHG emissions is projected to exceed the 2,500 $MTCO_2E$ screening criterion. Thus, an additional detailed analysis is required to determine the project's consistency with the E-CAP. For this analysis, the E-CAP Screening Tables were used to determine consistency (see Figure 4 – Option 1).

7.0 GHG Impact Analysis

In accordance with CEQA and City guidance, this analysis evaluates the significance of the proposed project in terms of (1) its contribution of GHGs to cumulative statewide emissions and (2) its consistency with local and state regulations, plans, and policies aimed at reducing GHG emissions.

7.1 GHG Emissions

7.1.1 Impacts

As indicated above in Section 6.0, GHG Emissions Calculations, the project exceeds the first screening level threshold and, therefore, additional Screening Tables analysis was used to determine consistency with the E-CAP. Table 7 shows the screening table for implementation of GHG reduction measures for the project. As shown, the project would achieve 100 points in GHG reductions. Thus, the project would be consistent with the reduction quantities anticipated in the City's E-CAP. Impacts would be less than significant.

TABLE 7
SCREENING TABLE FOR IMPLEMENTATION OF GHG REDUCTION MEASURES FOR THE PROJECT

Feature	Description	Assigned Point Value	Project Points
Reduction Measure R2 E5: Energy Efficiency for Commercial Development			
Building Envelope			
Insulation	Title 24 Standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15% > Title 24) Greatly Enhanced Insulation (20% > Title 24)	0 points 3 points 7 points 11 points	3
Windows	Title 24 Standard (required) Modestly Enhanced Window Insulation (5% > Title 24) Enhanced Window Insulation (15% > Title 24) Greatly Enhanced Window Insulation (20% > Title 24)	0 points 3 points 7 points 11 points	3
Doors	Title 24 Standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15% > Title 24) Greatly Enhanced Insulation (20% > Title 24)	0 points 3 points 7 points 11 points	3
Air Infiltration	Title 24 Standard (required) Modest Building Envelope Leakage (5% > Title 24) Reduced Building Envelope Leakage (15% > Title 24) Minimum Building Envelope Leakage (20% > Title 24)	0 points 3 points 7 points 11 points	7
Thermal Storage of Building	Thermal storage designed to reduce heating/cooling by 5 ºF within the building Thermal storage to reduce heating/cooling by 10 ºF within the building. Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.	5 points 11 points	5
Building Envelope Performance Standard	Modestly Enhanced Building Envelope (5% > Title 24) Enhanced Building Envelope (15% > Title 24) Greatly Enhanced Building Envelope (20% > Title 24)	12 points 28 points 44 points	28
Indoor Space Efficiencies			
Heating/Cooling Distribution System	Title 24 Standard (required) Modest Distribution Losses (5% > Title 24) Reduced Distribution Losses (15% > Title 24) Greatly Distribution Losses (20% > Title 24)	0 points 3 points 7 points 11 points	3
Space Heating/Cooling Equipment	Title 24 Standard (required) Efficiency HVAC (5% > Title 24) High Efficiency HVAC (15% > Title 24) Very High Efficiency HVAC (20% > Title 24)	0 points 3 points 7 points 11 points	7
Water Heaters	Title 24 Standard (required) Efficiency Water Heater (Energy Star conventional that is 5% > Title 24) High Efficiency Water Heater (Conventional water heater that is 15% > Title 24) High Efficiency Water Heater (Conventional water heater that is 20% > Title 24) *Solar Water Heating System*	0 points 3 points 7 points 11 points 13 points	7
Artificial Lighting	Title 24 Standard (required) Efficient Lights (5% > Title 24) High Efficiency Lights (LED, etc. 15% > Title 24) Very High Efficiency Lights (LED, etc. 20% > Title 24)	0 points 3 points 5 points 7 points	5
Appliances	Title 24 Standard (required) Efficient Appliances (5% > Title 24) High Efficiency Energy Star Appliances (15% > Title 24) Very High Efficiency Appliances (20% > Title 24)	0 points 3 points 7 points 11 points	7

TABLE 7
SCREENING TABLE FOR IMPLEMENTATION OF GHG REDUCTION MEASURES FOR THE PROJECT
(continued)

Feature	Description	Assigned Point Value	Project Points
Reduction Measure R2 E6: New Commercial/Industrial Renewable Energy			
Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments: Solar Ready Roofs (sturdy roof and electric hookups) 10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project	 1 point 7 points 13 points 19 points 25 points 31 points 37 points	1
Reduction Measure R2 W1: Water Use Reduction Initiative			
Irrigation and Landscaping			
Water Efficient Landscaping	Limit conventional turf to < 20% of each lot (required) Eliminate conventional turf from landscaping Eliminate turf and only provide drought tolerant plants Xeroscaping that requires no irrigation (after plants are established)	0 points 2 points 3 points 5 points	3
Water Efficient Irrigation Systems	Drip Irrigation Smart irrigation control systems combined with drip irrigation (demonstrate 20% reduced water use)	1 point 4 points	4
Potable Water			
Toilets	Title 24 Standard (required) EPA High Efficiency Toilets/Urinals (15% > Title 24) Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets have a combined point value of 6 points)	0 points 3 points 3 points	6
Faucets	Title 24 Standard (required) EPA High Efficiency Faucets (15% > Title 24)	0 points 3 points	3
Reduction Measure R2 T1: Land Use Based Trips and VMT Reduction Policies			
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD*	2
Local Retail Near Residential (Commercial Only Projects)	Having residential developments within walking and biking distance of local retail helps reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD*	3
POINTS TOTAL			**100**

*TBD = To Be Determined. For the proposed project, values were determined per conversation with Jay Petrek.

7.1.2 Significance of Impacts

As demonstrated, the project would achieve 100 points in GHG reductions. Thus, the project would be consistent with the reduction quantities anticipated in the City's E-CAP. The level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than significant.

7.2 Consistency with Adopted Plans, Policies, and Regulations

7.2.1 Impacts

AB 32 codified the 2020 goal of reducing statewide GHG emissions to 1990 levels and launched the Climate Change Scoping Plan that outlined the reduction measures needed to reach these targets. The Scoping Plan and its implementing and complementary regulations are discussed in Section 4.2.

Following the state's adopted AB 32 GHG reduction target, the City has set a goal to reduce emissions back to 1990 levels by the year 2020. The City's E-CAP was prepared to demonstrate how this would be achieved.

As demonstrated in this analysis, the project would achieve 100 points in GHG reductions. By achieving 100 points in GHG reductions, the project would achieve the GHG reduction goals established in the E-CAP. Table 7 summarizes the measures that would be implemented by the project. As the project would achieve 100 points, it would be considered consistent with the E-CAP, and GHG impacts would be considered less than significant.

7.2.2 Significance of Impacts

The project is consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development. The level of impacts would be less than significant.

8.0 Conclusions and Recommendations

As summarized in Table 7, based on features included in the project, the project would achieve 100 points in GHG reductions. Thus, the project would be consistent with the reduction quantities anticipated in the City's E-CAP. These reductions would be due to an increase in energy efficiency of the proposed buildings; the use of energy efficient appliances and heating and cooling systems; the installation of water efficient landscaping, irrigation systems, and plumbing fixtures; and a decrease in vehicle miles traveled due to the proximity of the project to residential and other commercial uses. Thus, the project would be consistent with the reduction quantities anticipated in the City's E-CAP. Because the project would be consistent with the reduction goals of the City's E-CAP, GHG impacts would be considered less than significant under CEQA. As the project would achieve 100 points, it would not conflict with the E-CAP or the AB 32 mandate for reducing GHG emissions. The level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than significant as well.

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ATTACHMENT

CalEEMod output –Project GHG Emissions

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CalEEMod output –Project GHG Emissions

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7374 Centerpointe 78

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	2.63	Acre	2.63	114,562.80	0
Fast Food Restaurant with Drive Thru	3.20	1000sqft	0.07	3,200.00	0
Supermarket	43.50	1000sqft	1.00	43,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 43,500 sf market
3,200 sf drive thru restuarant
199 parking spaces
3.7 acre site

Construction Phase - Phase lengths per project manager.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment per project manager

Off-road Equipment - Equipment per project manager

Off-road Equipment - Equipment per project manager

Off-road Equipment - Equipment per project manager

Off-road Equipment - Equipment per project manager

Off-road Equipment - Equipment per project manager

Demolition -

Grading -

Architectural Coating - SDAPCD VOC content limit = 150 g/L

Vehicle Trips - 5.8 mile trip length (SANDAG 2014)
Trip Rates (RK Engineering Group 2014)

Area Coating - SDAPCD VOC content limit - 150 g/L

Energy Mitigation -

Water Mitigation -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00

tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	18.00	230.00
tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	5.00	3.00
tblConstructionPhase	PhaseEndDate	11/20/2017	1/2/2017
tblConstructionPhase	PhaseEndDate	1/23/2017	1/2/2017
tblConstructionPhase	PhaseEndDate	1/26/2017	1/2/2017
tblConstructionPhase	PhaseStartDate	1/3/2017	2/16/2016
tblConstructionPhase	PhaseStartDate	3/8/2016	2/16/2016
tblConstructionPhase	PhaseStartDate	1/3/2017	12/8/2016
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Drainage/Utilities/Sub-Grade
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Drainage/Utilities/Sub-Grade
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Grading

tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Drainage/Utilities/Sub-Grade
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	ST_TR	722.03	650.00
tblVehicleTrips	ST_TR	177.59	150.00
tblVehicleTrips	SU_TR	542.72	650.00
tblVehicleTrips	SU_TR	166.44	150.00
tblVehicleTrips	WD_TR	496.12	650.00
tblVehicleTrips	WD_TR	102.24	150.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.4707	11.3110	6.9010	0.0132	0.0927	0.5748	0.6675	0.0227	0.5378	0.5606	0.0000	1,214.3575	1,214.3575	0.3027	0.0000	1,220.7136
2017	7.1500e-003	0.0564	0.0355	7.0000e-005	3.4000e-004	2.8000e-003	3.1400e-003	9.0000e-005	2.6100e-003	2.7000e-003	0.0000	6.2006	6.2006	1.6300e-003	0.0000	6.2348
Total	**1.4778**	**11.3674**	**6.9365**	**0.0133**	**0.0930**	**0.5776**	**0.6706**	**0.0228**	**0.5405**	**0.5633**	**0.0000**	**1,220.5581**	**1,220.5581**	**0.3043**	**0.0000**	**1,226.9483**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.4707	11.3110	6.9010	0.0132	0.0927	0.5748	0.6675	0.0227	0.5378	0.5606	0.0000	1,214.3561	1,214.3561	0.3027	0.0000	1,220.7123
2017	7.1500e-003	0.0564	0.0355	7.0000e-005	3.4000e-004	2.8000e-003	3.1400e-003	9.0000e-005	2.6100e-003	2.7000e-003	0.0000	6.2006	6.2006	1.6300e-003	0.0000	6.2348
Total	**1.4778**	**11.3674**	**6.9365**	**0.0133**	**0.0930**	**0.5776**	**0.6706**	**0.0228**	**0.5405**	**0.5633**	**0.0000**	**1,220.5567**	**1,220.5567**	**0.3043**	**0.0000**	**1,226.9470**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6640	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004
Energy	9.0500e-003	0.0823	0.0691	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	696.0591	696.0591	0.0261	6.6900e-003	698.6827
Mobile	4.8411	6.3839	35.1171	0.0429	2.7612	0.0713	2.8325	0.7385	0.0655	0.8040	0.0000	3,476.1368	3,476.1368	0.1865	0.0000	3,480.0537
Waste						0.0000	0.0000		0.0000	0.0000	57.2841	0.0000	57.2841	3.3854	0.0000	128.3773
Water						0.0000	0.0000		0.0000	0.0000	2.0093	27.7786	29.7879	0.2075	5.1000e-003	35.7276
Total	**5.5141**	**6.4662**	**35.1867**	**0.0434**	**2.7612**	**0.0776**	**2.8387**	**0.7385**	**0.0717**	**0.8102**	**59.2934**	**4,199.9754**	**4,259.2687**	**3.8055**	**0.0118**	**4,342.8421**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6640	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004
Energy	9.0500e-003	0.0823	0.0691	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	647.4611	647.4611	0.0242	6.2900e-003	649.9181
Mobile	4.8411	6.3839	35.1171	0.0429	2.7612	0.0713	2.8325	0.7385	0.0655	0.8040	0.0000	3,476.1368	3,476.1368	0.1865	0.0000	3,480.0537
Waste						0.0000	0.0000		0.0000	0.0000	57.2841	0.0000	57.2841	3.3854	0.0000	128.3773
Water						0.0000	0.0000		0.0000	0.0000	1.6075	21.6400	23.2474	0.1660	4.0800e-003	27.9972
Total	**5.5141**	**6.4662**	**35.1867**	**0.0434**	**2.7612**	**0.0776**	**2.8387**	**0.7385**	**0.0717**	**0.8102**	**58.8915**	**4,145.2387**	**4,204.1302**	**3.7621**	**0.0104**	**4,286.3471**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.68**	**1.30**	**1.29**	**1.14**	**12.04**	**1.30**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/4/2016	1/27/2016	5	18	
2	Site Preparation	Site Preparation	1/28/2016	2/1/2016	5	3	
3	Grading	Grading	2/2/2016	2/15/2016	5	10	
4	Drainage/Utilities/Sub-Grade	Trenching	2/16/2016	3/7/2016	5	15	
5	Building Construction	Building Construction	2/16/2016	1/2/2017	5	230	
6	Architectural Coatings	Architectural Coating	2/16/2016	1/2/2017	5	230	
7	Paving	Paving	12/8/2016	1/2/2017	5	18	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 73,632; Non-Residential Outdoor: 24,544 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Demolition	Excavators	1	8.00	162	0.38
Demolition	Other Construction Equipment	1	8.00	171	0.42
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Demolition	Rubber Tired Loaders	1	8.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Crawler Tractors	1	8.00	208	0.43
Site Preparation	Excavators	1	8.00	162	0.38
Site Preparation	Plate Compactors	1	8.00	8	0.43
Site Preparation	Rubber Tired Dozers	0	8.00	255	0.40

Site Preparation	Rubber Tired Loaders	1	8.00	199	0.36
Site Preparation	Scrapers	1	8.00	361	0.48
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	162	0.38
Grading	Graders	0	8.00	174	0.41
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	2.00	226	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Off-Highway Trucks	4	8.00	400	0.38
Building Construction	Other Construction Equipment	3	8.00	171	0.42
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coatings	Air Compressors	1	6.00	78	0.48
Drainage/Utilities/Sub-Grade	Forklifts	1	8.00	89	0.20
Drainage/Utilities/Sub-Grade	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Sub-Grade	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	8.00	125	0.42
Paving	Paving Equipment	0	6.00	130	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Scrapers	1	8.00	361	0.48
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Paving	Trenchers	1	8.00	80	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	18.00	0.00	148.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	49.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Sub-Grade	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0163	0.0000	0.0163	2.4600e-003	0.0000	2.4600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0362	0.3256	0.2155	3.6000e-004		0.0199	0.0199		0.0192	0.0192	0.0000	32.6439	32.6439	6.8500e-003	0.0000	32.7877
Total	**0.0362**	**0.3256**	**0.2155**	**3.6000e-004**	**0.0163**	**0.0199**	**0.0362**	**2.4600e-003**	**0.0192**	**0.0216**	**0.0000**	**32.6439**	**32.6439**	**6.8500e-003**	**0.0000**	**32.7877**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5500e-003	0.0215	0.0177	6.0000e-005	1.2600e-003	2.8000e-004	1.5500e-003	3.5000e-004	2.6000e-004	6.1000e-004	0.0000	5.0546	5.0546	4.0000e-005	0.0000	5.0553
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.3000e-004	7.0000e-003	2.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.5000e-004	0.0000	1.2106	1.2106	6.0000e-005	0.0000	1.2120
Total	**2.1100e-003**	**0.0222**	**0.0247**	**8.0000e-005**	**2.5600e-003**	**2.9000e-004**	**2.8600e-003**	**7.0000e-004**	**2.7000e-004**	**9.6000e-004**	**0.0000**	**6.2652**	**6.2652**	**1.0000e-004**	**0.0000**	**6.2673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0163	0.0000	0.0163	2.4600e-003	0.0000	2.4600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0362	0.3256	0.2155	3.6000e-004		0.0199	0.0199		0.0192	0.0192	0.0000	32.6439	32.6439	6.8500e-003	0.0000	32.7877
Total	**0.0362**	**0.3256**	**0.2155**	**3.6000e-004**	**0.0163**	**0.0199**	**0.0362**	**2.4600e-003**	**0.0192**	**0.0216**	**0.0000**	**32.6439**	**32.6439**	**6.8500e-003**	**0.0000**	**32.7877**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5500e-003	0.0215	0.0177	6.0000e-005	1.2600e-003	2.8000e-004	1.5500e-003	3.5000e-004	2.6000e-004	6.1000e-004	0.0000	5.0546	5.0546	4.0000e-005	0.0000	5.0553
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	7.3000e-004	7.0000e-003	2.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.5000e-004	0.0000	1.2106	1.2106	6.0000e-005	0.0000	1.2120
Total	**2.1100e-003**	**0.0222**	**0.0247**	**8.0000e-005**	**2.5600e-003**	**2.9000e-004**	**2.8600e-003**	**7.0000e-004**	**2.7000e-004**	**9.6000e-004**	**0.0000**	**6.2652**	**6.2652**	**1.0000e-004**	**0.0000**	**6.2673**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5200e-003	0.0574	0.0290	5.0000e-005		2.2900e-003	2.2900e-003		2.1100e-003	2.1100e-003	0.0000	4.8560	4.8560	1.4600e-003	0.0000	4.8866
Total	**4.5200e-003**	**0.0574**	**0.0290**	**5.0000e-005**	**2.3900e-003**	**2.2900e-003**	**4.6800e-003**	**2.6000e-004**	**2.1100e-003**	**2.3700e-003**	**0.0000**	**4.8560**	**4.8560**	**1.4600e-003**	**0.0000**	**4.8866**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	8.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1457	0.1457	1.0000e-005	0.0000	0.1459
Total	**7.0000e-005**	**9.0000e-005**	**8.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1457**	**0.1457**	**1.0000e-005**	**0.0000**	**0.1459**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5200e-003	0.0574	0.0290	5.0000e-005		2.2900e-003	2.2900e-003		2.1100e-003	2.1100e-003	0.0000	4.8560	4.8560	1.4600e-003	0.0000	4.8866
Total	**4.5200e-003**	**0.0574**	**0.0290**	**5.0000e-005**	**2.3900e-003**	**2.2900e-003**	**4.6800e-003**	**2.6000e-004**	**2.1100e-003**	**2.3700e-003**	**0.0000**	**4.8560**	**4.8560**	**1.4600e-003**	**0.0000**	**4.8866**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	8.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1457	0.1457	1.0000e-005	0.0000	0.1459
Total	**7.0000e-005**	**9.0000e-005**	**8.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1457**	**0.1457**	**1.0000e-005**	**0.0000**	**0.1459**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0486	0.0212	5.0000e-005		2.3600e-003	2.3600e-003		2.1700e-003	2.1700e-003	0.0000	4.3547	4.3547	1.3100e-003	0.0000	4.3823
Total	**4.1900e-003**	**0.0486**	**0.0212**	**5.0000e-005**	**0.0000**	**2.3600e-003**	**2.3600e-003**	**0.0000**	**2.1700e-003**	**2.1700e-003**	**0.0000**	**4.3547**	**4.3547**	**1.3100e-003**	**0.0000**	**4.3823**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.0800e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1868	0.1868	1.0000e-005	0.0000	0.1870
Total	**9.0000e-005**	**1.1000e-004**	**1.0800e-003**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1868**	**0.1868**	**1.0000e-005**	**0.0000**	**0.1870**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0486	0.0212	5.0000e-005		2.3600e-003	2.3600e-003		2.1700e-003	2.1700e-003	0.0000	4.3547	4.3547	1.3100e-003	0.0000	4.3823
Total	**4.1900e-003**	**0.0486**	**0.0212**	**5.0000e-005**	**0.0000**	**2.3600e-003**	**2.3600e-003**	**0.0000**	**2.1700e-003**	**2.1700e-003**	**0.0000**	**4.3547**	**4.3547**	**1.3100e-003**	**0.0000**	**4.3823**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.0800e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1868	0.1868	1.0000e-005	0.0000	0.1870
Total	**9.0000e-005**	**1.1000e-004**	**1.0800e-003**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1868**	**0.1868**	**1.0000e-005**	**0.0000**	**0.1870**

3.5 Drainage/Utilities/Sub-Grade - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1100e-003	0.0654	0.0472	6.0000e-005		5.0600e-003	5.0600e-003		4.6600e-003	4.6600e-003	0.0000	5.7191	5.7191	1.6800e-003	0.0000	5.7543
Total	**7.1100e-003**	**0.0654**	**0.0472**	**6.0000e-005**		**5.0600e-003**	**5.0600e-003**		**4.6600e-003**	**4.6600e-003**	**0.0000**	**5.7191**	**5.7191**	**1.6800e-003**	**0.0000**	**5.7543**

3.5 Drainage/Utilities/Sub-Grade - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.4000e-004	3.2400e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5605	0.5605	3.0000e-005	0.0000	0.5611
Total	**2.6000e-004**	**3.4000e-004**	**3.2400e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5605**	**0.5605**	**3.0000e-005**	**0.0000**	**0.5611**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1100e-003	0.0654	0.0472	6.0000e-005		5.0600e-003	5.0600e-003		4.6600e-003	4.6600e-003	0.0000	5.7190	5.7190	1.6800e-003	0.0000	5.7543
Total	**7.1100e-003**	**0.0654**	**0.0472**	**6.0000e-005**		**5.0600e-003**	**5.0600e-003**		**4.6600e-003**	**4.6600e-003**	**0.0000**	**5.7190**	**5.7190**	**1.6800e-003**	**0.0000**	**5.7543**

3.5 Drainage/Utilities/Sub-Grade - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	3.4000e-004	3.2400e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5605	0.5605	3.0000e-005	0.0000	0.5611
Total	**2.6000e-004**	**3.4000e-004**	**3.2400e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5605**	**0.5605**	**3.0000e-005**	**0.0000**	**0.5611**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9582	9.9969	5.5669	0.0108		0.5060	0.5060		0.4719	0.4719	0.0000	1,005.4003	1,005.4003	0.2780	0.0000	1,011.2391
Total	**0.9582**	**9.9969**	**5.5669**	**0.0108**		**0.5060**	**0.5060**		**0.4719**	**0.4719**	**0.0000**	**1,005.4003**	**1,005.4003**	**0.2780**	**0.0000**	**1,011.2391**

3.6 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0274	0.2349	0.3291	5.7000e-004	0.0156	3.4600e-003	0.0191	4.4800e-003	3.1800e-003	7.6600e-003	0.0000	51.8763	51.8763	4.1000e-004	0.0000	51.8849
Worker	0.0192	0.0254	0.2423	5.5000e-004	0.0450	3.5000e-004	0.0453	0.0120	3.2000e-004	0.0123	0.0000	41.9279	41.9279	2.2100e-003	0.0000	41.9744
Total	**0.0466**	**0.2603**	**0.5714**	**1.1200e-003**	**0.0606**	**3.8100e-003**	**0.0644**	**0.0164**	**3.5000e-003**	**0.0199**	**0.0000**	**93.8042**	**93.8042**	**2.6200e-003**	**0.0000**	**93.8592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9582	9.9968	5.5669	0.0108		0.5060	0.5060		0.4719	0.4719	0.0000	1,005.3991	1,005.3991	0.2780	0.0000	1,011.2379
Total	**0.9582**	**9.9968**	**5.5669**	**0.0108**		**0.5060**	**0.5060**		**0.4719**	**0.4719**	**0.0000**	**1,005.3991**	**1,005.3991**	**0.2780**	**0.0000**	**1,011.2379**

3.6 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0274	0.2349	0.3291	5.7000e-004	0.0156	3.4600e-003	0.0191	4.4800e-003	3.1800e-003	7.6600e-003	0.0000	51.8763	51.8763	4.1000e-004	0.0000	51.8849
Worker	0.0192	0.0254	0.2423	5.5000e-004	0.0450	3.5000e-004	0.0453	0.0120	3.2000e-004	0.0123	0.0000	41.9279	41.9279	2.2100e-003	0.0000	41.9744
Total	**0.0466**	**0.2603**	**0.5714**	**1.1200e-003**	**0.0606**	**3.8100e-003**	**0.0644**	**0.0164**	**3.5000e-003**	**0.0199**	**0.0000**	**93.8042**	**93.8042**	**2.6200e-003**	**0.0000**	**93.8592**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8800e-003	0.0402	0.0235	5.0000e-005		2.0100e-003	2.0100e-003		1.8700e-003	1.8700e-003	0.0000	4.3274	4.3274	1.2100e-003	0.0000	4.3528
Total	**3.8800e-003**	**0.0402**	**0.0235**	**5.0000e-005**		**2.0100e-003**	**2.0100e-003**		**1.8700e-003**	**1.8700e-003**	**0.0000**	**4.3274**	**4.3274**	**1.2100e-003**	**0.0000**	**4.3528**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	9.2000e-004	1.3600e-003	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2227	0.2227	0.0000	0.0000	0.2227
Worker	8.0000e-005	1.0000e-004	9.5000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1760	0.1760	1.0000e-005	0.0000	0.1762
Total	**1.9000e-004**	**1.0200e-003**	**2.3100e-003**	**0.0000**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**0.3987**	**0.3987**	**1.0000e-005**	**0.0000**	**0.3989**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8800e-003	0.0402	0.0235	5.0000e-005		2.0100e-003	2.0100e-003		1.8700e-003	1.8700e-003	0.0000	4.3274	4.3274	1.2100e-003	0.0000	4.3528
Total	**3.8800e-003**	**0.0402**	**0.0235**	**5.0000e-005**		**2.0100e-003**	**2.0100e-003**		**1.8700e-003**	**1.8700e-003**	**0.0000**	**4.3274**	**4.3274**	**1.2100e-003**	**0.0000**	**4.3528**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	9.2000e-004	1.3600e-003	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2227	0.2227	0.0000	0.0000	0.2227
Worker	8.0000e-005	1.0000e-004	9.5000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1760	0.1760	1.0000e-005	0.0000	0.1762
Total	**1.9000e-004**	**1.0200e-003**	**2.3100e-003**	**0.0000**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**0.3987**	**0.3987**	**1.0000e-005**	**0.0000**	**0.3989**

3.7 Architectural Coatings - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3398					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0422	0.2716	0.2157	3.4000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	29.2348	29.2348	3.4500e-003	0.0000	29.3071
Total	**0.3820**	**0.2716**	**0.2157**	**3.4000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**29.2348**	**29.2348**	**3.4500e-003**	**0.0000**	**29.3071**

3.7 Architectural Coatings - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9300e-003	5.1900e-003	0.0495	1.1000e-004	9.1800e-003	7.0000e-005	9.2500e-003	2.4400e-003	6.0000e-005	2.5000e-003	0.0000	8.5567	8.5567	4.5000e-004	0.0000	8.5662
Total	**3.9300e-003**	**5.1900e-003**	**0.0495**	**1.1000e-004**	**9.1800e-003**	**7.0000e-005**	**9.2500e-003**	**2.4400e-003**	**6.0000e-005**	**2.5000e-003**	**0.0000**	**8.5567**	**8.5567**	**4.5000e-004**	**0.0000**	**8.5662**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3398					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0422	0.2716	0.2157	3.4000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	29.2347	29.2347	3.4500e-003	0.0000	29.3071
Total	**0.3820**	**0.2716**	**0.2157**	**3.4000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**29.2347**	**29.2347**	**3.4500e-003**	**0.0000**	**29.3071**

3.7 Architectural Coatings - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9300e-003	5.1900e-003	0.0495	1.1000e-004	9.1800e-003	7.0000e-005	9.2500e-003	2.4400e-003	6.0000e-005	2.5000e-003	0.0000	8.5567	8.5567	4.5000e-004	0.0000	8.5662
Total	**3.9300e-003**	**5.1900e-003**	**0.0495**	**1.1000e-004**	**9.1800e-003**	**7.0000e-005**	**9.2500e-003**	**2.4400e-003**	**6.0000e-005**	**2.5000e-003**	**0.0000**	**8.5567**	**8.5567**	**4.5000e-004**	**0.0000**	**8.5662**

3.7 Architectural Coatings - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	1.0900e-003	9.3000e-004	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1280
Total	**1.6500e-003**	**1.0900e-003**	**9.3000e-004**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

3.7 Architectural Coatings - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0359	0.0359	0.0000	0.0000	0.0360
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0359**	**0.0359**	**0.0000**	**0.0000**	**0.0360**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	1.0900e-003	9.3000e-004	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1280
Total	**1.6500e-003**	**1.0900e-003**	**9.3000e-004**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1280**

3.7 Architectural Coatings - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0359	0.0359	0.0000	0.0000	0.0360
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0359**	**0.0359**	**0.0000**	**0.0000**	**0.0360**

3.8 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0218	0.2569	0.1509	2.3000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	21.9944	21.9944	6.6300e-003	0.0000	22.1337
Paving	3.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0251**	**0.2569**	**0.1509**	**2.3000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**21.9944**	**21.9944**	**6.6300e-003**	**0.0000**	**22.1337**

3.8 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	3.9000e-004	3.6700e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6352	0.6352	3.0000e-005	0.0000	0.6359
Total	**2.9000e-004**	**3.9000e-004**	**3.6700e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6352**	**0.6352**	**3.0000e-005**	**0.0000**	**0.6359**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0218	0.2569	0.1509	2.3000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	21.9943	21.9943	6.6300e-003	0.0000	22.1337
Paving	3.2500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0251**	**0.2569**	**0.1509**	**2.3000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**21.9943**	**21.9943**	**6.6300e-003**	**0.0000**	**22.1337**

3.8 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	3.9000e-004	3.6700e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6352	0.6352	3.0000e-005	0.0000	0.6359
Total	**2.9000e-004**	**3.9000e-004**	**3.6700e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6352**	**0.6352**	**3.0000e-005**	**0.0000**	**0.6359**

3.8 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2100e-003	0.0140	8.4300e-003	1.0000e-005		6.9000e-004	6.9000e-004		6.3000e-004	6.3000e-004	0.0000	1.2750	1.2750	3.9000e-004	0.0000	1.2832
Paving	1.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4000e-003**	**0.0140**	**8.4300e-003**	**1.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.3000e-004**	**6.3000e-004**	**0.0000**	**1.2750**	**1.2750**	**3.9000e-004**	**0.0000**	**1.2832**

3.8 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0359	0.0359	0.0000	0.0000	0.0360
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0359**	**0.0359**	**0.0000**	**0.0000**	**0.0360**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2100e-003	0.0140	8.4300e-003	1.0000e-005		6.9000e-004	6.9000e-004		6.3000e-004	6.3000e-004	0.0000	1.2750	1.2750	3.9000e-004	0.0000	1.2832
Paving	1.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4000e-003**	**0.0140**	**8.4300e-003**	**1.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.3000e-004**	**6.3000e-004**	**0.0000**	**1.2750**	**1.2750**	**3.9000e-004**	**0.0000**	**1.2832**

3.8 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0359	0.0359	0.0000	0.0000	0.0360
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0359**	**0.0359**	**0.0000**	**0.0000**	**0.0360**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.8411	6.3839	35.1171	0.0429	2.7612	0.0713	2.8325	0.7385	0.0655	0.8040	0.0000	3,476.1368	3,476.1368	0.1865	0.0000	3,480.0537
Unmitigated	4.8411	6.3839	35.1171	0.0429	2.7612	0.0713	2.8325	0.7385	0.0655	0.8040	0.0000	3,476.1368	3,476.1368	0.1865	0.0000	3,480.0537

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	2,080.00	2,080.00	2080.00	1,541,875	1,541,875
Parking Lot	0.00	0.00	0.00		
Supermarket	6,525.00	6,525.00	6525.00	5,802,369	5,802,369
Total	8,605.00	8,605.00	8,605.00	7,344,244	7,344,244

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	5.80	5.80	5.80	2.20	78.80	19.00	29	21	50
Parking Lot	5.80	5.80	5.80	0.00	0.00	0.00	0	0	0
Supermarket	5.80	5.80	5.80	6.50	74.50	19.00	34	30	36

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.509603	0.073619	0.192430	0.134105	0.036943	0.005309	0.012459	0.020989	0.001832	0.002087	0.006541	0.000614	0.003471

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	557.8667	557.8667	0.0225	4.6500e-003	559.7784
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	606.4647	606.4647	0.0244	5.0500e-003	608.5429
NaturalGas Mitigated	9.0500e-003	0.0823	0.0691	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.5945	89.5945	1.7200e-003	1.6400e-003	90.1397
NaturalGas Unmitigated	9.0500e-003	0.0823	0.0691	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.5945	89.5945	1.7200e-003	1.6400e-003	90.1397

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Supermarket	1.11491e+006	6.0100e-003	0.0547	0.0459	3.3000e-004		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	59.4956	59.4956	1.1400e-003	1.0900e-003	59.8577
Fast Food Restaurant with Drive Thru	564032	3.0400e-003	0.0277	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	30.0989	30.0989	5.8000e-004	5.5000e-004	30.2821
Total		**9.0500e-003**	**0.0823**	**0.0691**	**5.0000e-004**		**6.2500e-003**	**6.2500e-003**		**6.2500e-003**	**6.2500e-003**	**0.0000**	**89.5945**	**89.5945**	**1.7200e-003**	**1.6400e-003**	**90.1397**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Supermarket	1.11491e+006	6.0100e-003	0.0547	0.0459	3.3000e-004		4.1500e-003	4.1500e-003		4.1500e-003	4.1500e-003	0.0000	59.4956	59.4956	1.1400e-003	1.0900e-003	59.8577
Fast Food Restaurant with Drive Thru	564032	3.0400e-003	0.0277	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	30.0989	30.0989	5.8000e-004	5.5000e-004	30.2821
Total		**9.0500e-003**	**0.0823**	**0.0691**	**5.0000e-004**		**6.2500e-003**	**6.2500e-003**		**6.2500e-003**	**6.2500e-003**	**0.0000**	**89.5945**	**89.5945**	**1.7200e-003**	**1.6400e-003**	**90.1397**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	132352	43.2538	1.7400e-003	3.6000e-004	43.4020
Parking Lot	100815	32.9473	1.3300e-003	2.7000e-004	33.0602
Supermarket	1.62255e+006	530.2636	0.0213	4.4200e-003	532.0807
Total		**606.4647**	**0.0244**	**5.0500e-003**	**608.5429**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	132352	43.2538	1.7400e-003	3.6000e-004	43.4020
Parking Lot	100815	32.9473	1.3300e-003	2.7000e-004	33.0602
Supermarket	1.47385e+006	481.6656	0.0194	4.0100e-003	483.3161
Total		**557.8667**	**0.0225**	**4.6400e-003**	**559.7784**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6640	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004
Unmitigated	0.6640	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6298					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004
Total	**0.6640**	**0.0000**	**4.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.8000e-004**	**8.8000e-004**	**0.0000**	**0.0000**	**9.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0341					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6298					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.8000e-004	8.8000e-004	0.0000	0.0000	9.3000e-004
Total	**0.6640**	**0.0000**	**4.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.8000e-004**	**8.8000e-004**	**0.0000**	**0.0000**	**9.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.2474	0.1660	4.0800e-003	27.9972
Unmitigated	29.7879	0.2075	5.1000e-003	35.7276

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.971308 / 0.0619984	4.6665	0.0318	7.8000e-004	5.5778
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Supermarket	5.36217 / 0.16584	25.1214	0.1757	4.3200e-003	30.1498
Total		**29.7879**	**0.2075**	**5.1000e-003**	**35.7276**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	0.777046 / 0.0619984	3.6635	0.0255	6.3000e-004	4.3923
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Supermarket	4.28973 / 0.16584	19.5839	0.1405	3.4500e-003	23.6049
Total		**23.2474**	**0.1660**	**4.0800e-003**	**27.9972**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	57.2841	3.3854	0.0000	128.3773
Unmitigated	57.2841	3.3854	0.0000	128.3773

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	36.86	7.4823	0.4422	0.0000	16.7682
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Supermarket	245.34	49.8018	2.9432	0.0000	111.6091
Total		**57.2841**	**3.3854**	**0.0000**	**128.3773**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	36.86	7.4823	0.4422	0.0000	16.7682
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Supermarket	245.34	49.8018	2.9432	0.0000	111.6091
Total		**57.2841**	**3.3854**	**0.0000**	**128.3773**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation