RECON

Greenhouse Gas Analysis for the Sharp Ocean View Tower Chula Vista, California

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Acronyms

AB	Assembly Bill
ACC	Advanced Clean Cars
BACM	Best Available Control Measures
BAU	business-as-usual
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CCWG	Climate Change Working Group
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
EO	Executive Order
GHG	greenhouse gas
GWP	global warming potential
LCFS	Low Carbon Fuel Standard
LEV III	Low Emission Vehicle III
MMT CO_2E	million metric tons carbon dioxide equivalent
mpg	miles per gallon
MPO	Metropolitan Planning Organizations
MT CO_2E	metric tons carbon dioxide equivalent
N_2O	Nitrous oxide
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas & Electric
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
T-BACT	Toxic Best Available Control Technology
TCM	Transportation Control Measures
U.S. EPA	United States Environmental Protection Act

Executive Summary

The proposed Sharp Chula Vista Hospital project (proposed project) is located at 751 Medical Center Court in the city of Chula Vista, California. The 2.47-acre site is currently developed. The project would construct a 138-bed critical care facility. Greenhouse gases (GHGs) would be emitted as a result of construction and operation of the project.

In accordance with California Environmental Quality Act and City of Chula Vista guidance, this analysis evaluates the significance of the project in terms of (1) its contribution of GHGs to cumulative statewide emissions, and (2) whether it conflicts with local and state regulations, plans, and policies aimed at reducing GHG emissions.

A stationary source is one with an identified emission point or points, often associated with industrial processes. Stationary sources can include cogeneration facilities, boilers, flares, heaters, refineries, and other types of facilities. Single facilities can have many individual emission points. As the project would include a boilers, a cooling tower, and similar sources, for the purposes of this analysis, the project would is considered a stationary source. A stationary source would have a cumulatively considerable GHG impact if it would result in a net increase of GHG emissions, either directly or indirectly, at a level exceeding 10,000 metric tons of carbon dioxide equivalent (MT CO_2E) per year.

The emissions sources associated with the project include construction (off-road vehicles), mobile (on-road vehicles), stationary and area sources (maintenance equipment), water and wastewater, and solid waste sources. The project would result in less than 10,000 MT CO_2E annually, and the level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than cumulatively considerable. Additionally, the project would not conflict with the state reduction targets for transportation, energy, and other emissions associated with land use and development, and would not conflict with the Scoping Plan. The project would not conflict with any local or state plan, policy, or regulation aimed at reducing GHG emissions from land use and development. Therefore, the project's impacts relative to GHG emissions would be less than significant.

1.0 Introduction

1.1 Understanding Global Climate Change

To evaluate the incremental effect of the project on statewide greenhouse gas (GHG) emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem. 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).

Table 1 Global Warming Potentials and Atmospheric Lifetimes (years)				
Gas	Atmospheric Lifetime	100-year GWP	20-year GWP	
Carbon dioxide (CO_2)	50–200	1	1	
Methane (CH_4)[1]	12.4	28	84	
Nitrous oxide (N_2O)	121	265	264	
HFC-23	222	12,400	10,800	
HFC-32	5.2	677	2,430	
HFC-125	28.2	3,170	6,090	
HFC-134a	13.4	1,300	3,710	
HFC-143a	47.1	4,800	6,940	
HFC-152a	1.5	138	506	
HFC-227ea	38.9	3,350	5,360	
HFC-236fa	242	8,060	6,940	
HFC-43-10mee	16.1	1,650	4,310	
CF_4	50,000	6,630	4,880	
C_2F_6	10,000	11,100	8,210	
C_3F_8	2,600	8,900	6,640	
C_4F_{10}	2,600	9,200	6,870	
c-C_4F_8	3,200	9,540	7,110	
C_5F_{12}	4,100	8,550	6,350	
C_6F_{14}	3,100	7,910	5,890	
SF_6	3,200	23,500	17,500	

SOURCE: Intergovernmental Panel on Climate Change 2013.
[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 a long atmospheric lifetime, 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 CO_2. Because CO_2 is the reference gas for establishing GWP, by definition its GWP is 1. Although 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 [U.S. 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.

It should be noted that the U.S. EPA and other organizations will update the GWP values they use occasionally. This change can be due to updated scientific estimates of the energy absorption or lifetime of the gases or to changing atmospheric concentrations of GHGs that result in a change in the energy absorption of one additional ton of a gas relative to another. The GWPs shown in Table 1 are the most current. However, it should be noted

that in CalEEMod CH_4 has a GWP of 21 and N_2O has a GWP of 310, and these values were used for this analysis.

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 N_2O would be emitted from the same project operations.

2.0 Project Description

The proposed project would include construction of a new hospital tower within the existing Sharp Chula Vista Hospital campus. The new critical care tower ("Ocean View Tower") would be seven stories in height and would include 138 beds, 6 operating rooms with pre- and post-op support, sterile processing, dietary services, material management, dock, and other related support services. The 197,696-square-foot Ocean View Tower would be seven floors, six above grade and one mostly sub-grade (subterranean on three sides; above ground on one side). A new boiler room would be located on the top floor of the new tower with an exhaust stack located on the roof of the seven-story tower. Nine air handlers would be located on the second-floor roof of the lower portion of the new tower located between the patient tower and the existing hospital. Two additional units would be located on the roof of the seven-story tower. A new 1,500-kilowatt emergency generator housed in a sound enclosure would be located west of the existing parking structure and immediately east of the existing generator building. Total height would be 110 feet 9 inches for the seven-story tower and 120 feet to the top of the elevator structure.

The Sharp Chula Vista hospital campus is located at 751 Medical Center Court, east of Interstate 5, south of Telegraph Canyon Road, and between Medical Center Drive and Paseo Ladera. The campus is comprised of a central 17.2-acre acute care parcel, a 10-acre outpatient parcel, and a 5-acre medical office building parcel. The proposed tower would be constructed immediately adjacent to the existing east tower at the northeastern corner of the acute care portion of the campus. Figure 1 shows the regional location of the project; Figure 2 shows an aerial photograph of the project vicinity; and Figure 3 shows the proposed site plan for the project.

FIGURE 1
Regional Location

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Image Source: USDA FSA (flown May 2014)

FIGURE 2

Project Location on Aerial Photograph

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Map Source: Smith Group JJR

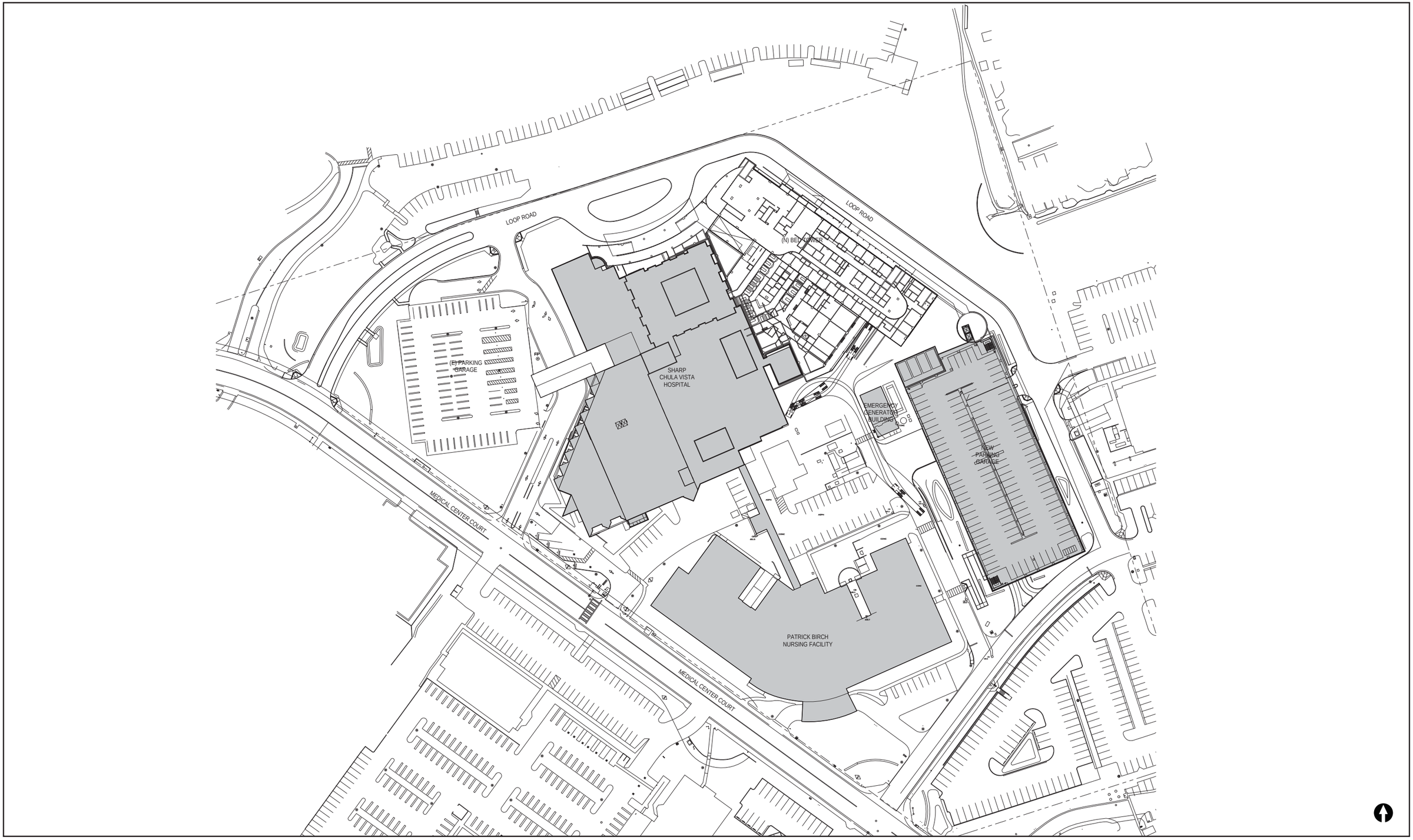

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FIGURE 3
Site Plan

3.0 Existing Conditions

3.1 Environmental Setting

3.1.1 State GHG Inventories

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 (MMT CO_2E). Table 2 shows the estimated statewide GHG emissions for the years 1990, 2008, and 2012.

Table 2
California GHG Emissions By Sector in 1990, 2008, and 2012

Sector	1990[1] Emissions in MMT CO_2E (% total)[2]	2008[3] Emissions in MMT CO_2E (% total)[2]	2012[3] Emissions in MMT CO_2E (% total)[2]
Sources			
Agriculture	23.4 (5%)	37.99 (7%)	37.86 (7%)
Commercial	14.4 (3%)	13.37 (3%)	14.20 (3%)
Electricity Generation	110.6 (26%)	120.15 (25%)	95.09 (19%)
High GWP	--	12.87 (2%)	18.41 (3%)
Industrial	103.0 (24%)	87.54 (18%)	89.16 (21%)
Recycling and Waste	--	8.09 (1%)	8.49 (2%)
Residential	29.7 (7%)	29.07 (6%)	28.09 (7%)
Transportation	150.7 (35%)	178.02 (37%)	167.38 (38%)
Forestry (Net CO_2 flux)[4]	-6.69	--	--
Not Specified[4]	1.27	--	--
TOTAL	**426.6**[1]	**487.10**	**458.68**

[1]1990 data was retrieved from the CARB 2007 source and are based on Intergovernmental Panel on Climate Change (IPCC) second assessment report GWPs. The revised calculation, which uses the scientifically updated IPCC fourth assessment report GWPs, is 431 MMT CO_2E.
[2]Percentages may not total 100 due to rounding.
[3]2008 and 2012 data was retrieved from the CARB 2014a source.
[4]Reported emissions for key sectors. The inventory totals for 2008 and 2012 did not include Forestry or Not Specified sources.
SOURCE: CARB 2007 and 2014a.

As shown in Table 2, statewide GHG source emissions totaled 427 MMT CO_2E in 1990, 487 MMT CO_2E in 2008, and 459 MMT CO_2E in 2012. 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. While CARB has adopted multiple GHG emission reduction measures, the effect of those reductions will not be seen until around 2015. 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 (CARB 2014a). Transportation-related

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

The forestry sector is unique because it not only includes emissions associated with harvest, fire, and land use conversion (sources), but also includes removals of atmospheric CO_2 (sinks) by photosynthesis, which is then bound (sequestered) in plant tissues.

3.1.2 Regional GHG Inventory

As part of the City's climate action program, the Department of Public Works' Conservation Section performs emission inventories to identify GHG sources and help guide policy decisions. The City's community-wide GHG emissions were calculated using the ICLEI U.S. Community Protocol. The results of the community inventory for 1990, 2005, and 2012 are summarized in Table 3.

Table 3
City of Chula Vista Community GHG Emissions in 1990, 2005, and 2012

Source	1990 Emissions (MT CO_2E)	2005 Emissions (MT CO_2E)	2012 Emissions (MT CO_2E)	% Change (2012 vs. 1990)	% Change (2012 vs. 2005)
Transportation	335,435	313,011	393,333	17%	26%
Energy Use – Residential	197,115	247,559	264,170	34%	7%
Energy Use – Commercial	71,363	182,951	202,721	184%	11%
Energy Use – Industrial	123,128	41,670	30,391	-75%	-27%
Energy Use – Total	391,606	472,180	497,282	27%	5%
Solid Waste	78,539	85,039	62,504	-20%	-26%
Potable Water (embedded energy)	NA	46,951	40,643	NA	-13%
Waste Water	9,607	15,457	17,719	84%	15%
TOTAL Emissions	**815,186**	**932,638**	**1,011,481**	**24%**	**8%**

SOURCE: City of Chula Vista 2012.

3.1.3 On-Site GHG Emissions

As shown in Figure 2, the project site has been previously graded in order to implement the loop road and other site (landscaping) improvements constructed as part of a previous entitlement. However, the portion of the campus where the Ocean View Tower would be constructed is not currently developed with any habitable structures and is not a current source of GHG emissions.

3.2 Regulatory Background

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 applicable to the project.

3.2.1 Federal

The federal government, U.S. EPA, and other federal agencies have many federal level programs and projects to reduce GHG emissions.

3.2.1.1 U.S. Environmental Protection Agency

The U.S. EPA has many federal level programs and projects to reduce GHG emissions. The U.S. EPA provides technical expertise and encourages voluntary reductions from the private sector.

Energy Star is a joint program of U.S. EPA and the U.S. 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 (U.S. EPA 2013).

The U.S. 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 (U.S. EPA 2014).

3.2.1.2 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the U.S. While the standards had not changed since 1990, as part of the Energy and Security Act of 2007, the CAFE standards were increased in 2007 for new light-duty vehicles to 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 August 2012, fuel economy standards were further increased to 54.5 mpg for cars and light-duty trucks by Model Year 2025, which will nearly double the fuel efficiency of those vehicles compared to new vehicles currently on our roads. 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.

3.2.2 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 goals, and actions and timelines to achieve the goal GHG reductions.

3.2.2.1 Statewide GHG Emission Goals

S-3-05—2050 GHG Reduction Goal

This executive order (EO) established the following GHG emission reduction goal 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 goals and to prepare biannual reports on the progress made toward meeting the goals 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.

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 of 40 percent below 1990 levels. This EO also directed 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 directed CARB to update its Climate Change 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.

3.2.2.2 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 required 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.

3.2.2.3 Climate Change Scoping Plan

As directed by the California Global Warming Solutions Act of 2006, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan). The

Scoping Plan identifies the main strategies the State of California will implement to achieve the GHG reductions necessary to reduce statewide forecasted business-as-usual (BAU) GHG emissions in 2020 to the state's historic 1990 emissions level.

In 2008, as part of its adoption of the Scoping Plan, CARB estimated that annual statewide GHG emissions were 427 MMT CO_2E in 1990 and would reach 596 MMT CO_2E by 2020 under a BAU condition (CARB 2008). To achieve the mandate of AB 32, CARB determined that a 169 MMT CO_2E (or approximate 28.3 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). The majority of reductions 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 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 MMT CO_2E (CARB 2011a). With respect to the new economic data alone, CARB determined that the economic downturn reduced the 2020 BAU by 55 MMT CO_2E; as a result, achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 (not 28.3) percent from the 2020 BAU. And, with the additional implementation of two reduction measures not previously included in the BAU calculations, CARB determined that implementation of Pavley I and the Initial Renewable Portfolio Standard (RPS) accounted for reductions of 26 MMT CO_2E and 12 MMT CO_2E, respectively; as a result, achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 15.8 (not 28.3) percent (CARB 2011a). Given the refined 2020 forecast of 507 MMT CO_2E per year, CARB determined that statewide GHG emissions would need to be reduced by 80 MMT CO_2E (or 15.8 percent of 507 MMT CO_2E) by 2020 in order to reach the 1990 emission levels per AB 32 (CARB 2011a). The updated emissions projects and goals were incorporated into the Scoping Plan that was approved in 2011 (CARB 2011b).

Most recently, in 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update) (CARB 2014b). The First Update "highlights California's success to date in reducing its GHG emissions and lays 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 2014b). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely 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 2014b).

In conjunction with the First Update, CARB identified "six key focus areas comprising major components of the State's economy to evaluate and describe the larger transformative actions that will be needed to meet the State's more expansive emission

reduction needs by 2050" (CARB 2014b). Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction goal.

Based on CARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014b). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated statewide 1990 emissions level using updated GWPs identified by the Intergovernmental Panel on Climate Change. Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

The First Update included a strong recommendation from CARB for setting a mid-term statewide GHG emissions reduction goal. CARB specifically recommended that the mid-term goal be consistent with: (i) the United States' pledge to reduce emissions 42 percent below 2005 levels (which translates to a 35 percent reduction from 1990 levels in California); and (ii) the long-term policy goal of reducing emissions to 80 percent below 1990 levels by 2050. However, to date, there is no legislative authorization for a post-2020 GHG reduction goal, and CARB has not established such a goal.

The First Update discusses new residential and commercial building energy-efficiency improvements, specifically identifying progress towards zero net energy buildings by 2020 for residential buildings and 2030 for commercial buildings as an element of meeting mid-term and long-term GHG reduction goals. The First Update expresses CARB's commitment to working with the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) to facilitate further achievements in building energy efficiency.

The original 2008 Scoping Plan and the 2014 First Update represent important milestones in California's efforts to reduce GHG emissions statewide. The law also requires the Scoping Plan to be updated every five years. The Scoping Plan process, as stated, is also thorough and encourages public input and participation.

3.2.2.4 California Light-Duty Vehicle GHG Standards

AB 1493 (Pavley) 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 has adopted amendments to its regulations that would enforce AB 1493 but provide vehicle manufacturers with new compliance flexibility.

CARB has also adopted a second phase of the Pavley regulations, originally termed "Pavley II" but now called the Low Emission Vehicle III" (LEV III) Standards or Advanced Clean Cars (ACC) Program, which covers model years 2017 to 2025. CARB estimates that LEV III will reduce vehicle GHGs by an additional 4.0 MMT CO_2E for a 2.4 percent reduction over Pavley I. These reductions come from improved vehicle technologies such as smaller engines with superchargers, continuously variable transmissions, and hybrid electric drives. On August 7, 2012, the final regulation for the adoption of LEV III became effective.

It is expected that Pavley I and LEV III regulations will reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016, while improving fuel efficiency and reducing motorists' costs (CARB 2013).

3.2.2.5 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 in April 2009. 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.

3.2.2.6 Regional Emissions Targets—Senate Bill 375

Senate Bill (SB) 375, the 2008 Sustainable Communities and Climate Protection Act, was signed into law in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that MPO's Regional Transportation Plan (RTP). San Diego Association of Governments (SANDAG) is the San Diego region's MPO. The CARB targets for the SANDAG region require a 7 percent reduction in GHG emissions per capita from automobiles and light duty trucks compared to 2005 levels by 2020, and a 13 percent reduction by 2035.

3.2.2.7 Renewables Portfolio Standard

The RPS promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the Initial RPS), the goal has been accelerated and increased by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. In

April 2011, SB 2 (1X) codified California's 33 percent RPS goal. In September 2015, the California Legislature passed SB 350 which increases California's renewable energy mix goal to 50 percent by year 2030. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

3.2.2.8 California Code of Regulations, Title 24—California Building Code

The California Code of Regulations (CCR), Title 24, is referred to as the California Building Code (CBC). It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, handicap accessibility, and so on. Of particular relevance to GHG reductions are the CBC's energy code and green building code as outlined below.

Part 6—Energy Code

The CCR, Title 24, Part 6 is the Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, 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. 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 CEC. By reducing California's energy consumption, emissions of statewide GHGs may also be reduced. The previous Energy Code, known as the 2008 Energy Code, became effective January 1, 2010. The 2008 Energy Code required energy savings of 15 to 35 percent above the former 2005 Energy Code, which is relevant as the original GHG inventory for the state was based on the 2005 Energy Code.

The current version of the Energy Code, known as the 2013 Energy Code, became effective July 1, 2014. The 2013 Energy Code provides mandatory energy-efficiency measures as well as voluntary tiers for increased energy efficiency. Based on an impact analysis prepared by the CEC for single-family residences, the 2013 Energy Code has been estimated to achieve a 36.4 percent increase in electricity efficiencies and a 6.5 percent increase in natural gas efficiencies over the 2008 Energy Code (CEC 2013). The same report estimates increased efficiencies for multi-family residences of 23.3 percent for electricity use and 3.8 percent for natural gas use, and increased efficiencies for non-residential uses of 21.8 percent for electricity use and 16.8 percent for natural gas use.

Note that the next version of the Energy Code, the 2016 Energy Code, will become effective on January 1, 2017 and will incorporate updated energy requirements, which according to the CEC's website will result in an additional 28 percent increase in energy efficiency over the 2013 Energy Code.

Part 11—California Green Building Standards Code

The California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11 first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2013 CalGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. 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 Green Building Standards and may adopt additional 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;
- Infrastructure requirements for electric vehicle charging stations;
- 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.

Similar to the compliance reporting procedure for demonstrating Energy Code compliance 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.

3.2.3 Local

On November 14, 2000, the City of Chula Vista adopted and implemented the first CO_2 Reduction Plan, also referred to as the City's Climate Action Plan, which inventoried existing CO_2 emissions, projected emissions growth to 2010, and evaluated a wide range of CO_2 reduction measures (City of Chula Vista 2000). The 2005 GHG emissions inventory was the first formal evaluation of the City's progress in reaching its emissions goals, and the inventory has since been updated (see Section 3.1.2). The CO_2 reduction measures included in the CO_2 Reduction Plan focus on Transportation Control Measures (TCMs); land use patterns; clean transportation fuels; and residential, commercial, and industrial building efficiencies. The original CO_2 Reduction Plan has been revised to incorporate the City's Climate Mitigation Plans (City of Chula Vista 2008) and Climate Adaptation Plans (City of Chula Vista 2011).

3.2.3.1 Climate Mitigation Plans

In 2007, a Chula Vista Climate Change Working Group (CCWG) developed recommendations to reduce the community's GHG emissions in order to meet the City's 2010 GHG emission reduction goals. Seven measures were adopted by the City in 2008. These measures are summarized in Table 4.

Table 4
City of Chula Vista Climate Mitigation Plans

Strategy	Performance Strategy
100 Percent Clean Vehicle Replacement Policy for City Fleet	Replace vehicles through the purchase or lease of alternative fuel and hybrid vehicles.
100 Percent Clean Vehicle Replacement Policy for City-Contracted Fleet Services	Work with current and future vendors to include a "Clean Vehicle" replacement policy into the bid and contracting process.
Business Energy Assessments	Through an ordinance addition, encourage businesses to participate in a no cost assessment as part of the business licensing process.
Green Building Strategy	Through a building code revision, require new and renovated buildings to increase their energy efficiency and meet state-wide green building standards.
Solar and Energy Efficiency Conversion	Provide a cost-effective, streamlined mechanism for property owners to implement solar- and energy-efficiency upgrades and create a municipal code requiring pre-wiring for solar electric systems.
Smart Growth Around Trolley Stations	Implement the smart growth design principles outlined in municipal planning documents.
Outdoor Water Conservation	Provide a cost-effective, streamlined mechanism for installing water-saving plants at private/public sites and create new municipal landscape regulations.
SOURCE: City of Chula Vista 2008	

3.2.3.2 Climate Adaptation Plans

In 2008, the Chula Vista CCWG developed 11 strategies to adapt the community to impacts within energy and water supply, public health, wildfires, ecosystem management, coastal infrastructure, and the local economy sectors. The 11 adaptation strategies and a description of the City's approach are summarized in Table 5.

Table 5 City of Chula Vista Climate Adaptation Strategies	
Strategy	Performance Strategy
Strategy 1 – Cool Paving	o Perform a comprehensive study to evaluate and test multiple reflective pavement technologies. o Develop options, based on the study's results, for incorporating cool pavement technologies into municipal capital improvement and development parking lot standards.
Strategy 2 – Shade Trees	o Develop a shade tree policy for future City Council consideration. o Amend the Municipal Landscape Manual to be consistent with the new policy. o Ensure that the Design Manual is consistent with the new policy.
Strategy 3 – Cool Roofs	o Further evaluate cool roofing options and propose amendments to municipal building codes to incorporate cool roofs for new residential developments with air-conditioning systems. o Further the CCWG's suggestion to provide cool roofing incentives and offer recommendations for future City Council consideration.
Strategy 4 – Local Water Supply and Reuse	o Evaluate and propose municipal building code amendments to incorporate single-source gray water "stub-outs" in new residential buildings and indoor recycled water in new commercial buildings. o Develop an educational guide for the general public about proper use of gray water systems o Create an incentive (using external funding sources) to promote on-site water reuse. o Update the City's water-related plans to reference and promote recycled water and on-site water reuse systems.
Strategy 5 – Storm Water Pollution Prevention and Reuse	o Update municipal codes to prohibit landscape runoff flowing into storm drains and receiving water bodies. o Develop new guidelines to promote the reuse of pipe flushing water at construction sites. o Create incentives to reward Low Impact Development projects which capture and reuse storm water on-site. o Investigate opportunities for broader reuse of storm water via the City's conveyance system.
Strategy 6 – Education and Wildfires and Strategy 7 – Extreme Heat Plans	o Leverage municipal and partner agencies' outreach mechanisms to broaden wildfire education in the community. o Revise the City's existing Emergency Response Plan and the Multi-Jurisdictional Hazard Mitigation Plan to include extreme heat events. o Establish an extreme heat and poor air quality notification system for residents and businesses.
Strategy 8 – Open Space Management	o Update the Otay Ranch Preserve Monitoring and Plans to actively manage and mitigate these impacts. o Amend the Otay Valley Regional Park Concept Plan to ensure climate change impacts are considered into future park development and management. o Continue the City's transition to low water use landscaping within medians, parks, and open space areas.
Strategy 9 – Wetlands Preservation	o Evaluate the feasibility of monitoring local wetlands species ranges and abundances in response to climate change impacts. o Incorporate wetlands "migration" in habitat management and restoration design criteria in the future Bayfront Natural Resources Management Plan. o Revise the Otay Valley Regional Park's Habitat Restoration Plan and Non-native Plant Removal Guidelines to include strategies for climate change adaptation issues.

Table 5 City of Chula Vista Climate Adaptation Strategies	
Strategy	Performance Strategy
Strategy 10 – Sea Level Rise and Land Development Codes	o Revise its grading ordinance to consider a project's vulnerability to future sea level rise and flooding events. o Modify its Subdivision Manual to ensure that storm water/drainage infrastructure can address future sea level rise and flooding impacts. o Ensure that environmental review and California Environmental Quality Act (CEQA) procedures are consistent with these changes.
Strategy 11 – Green Economy	o Revise the municipal purchasing policy to more robustly promote the procurement of "green" products and services, and to give preference for purchases from local Chula Vista businesses. o Revise existing environmental outreach programs to businesses to include recommendations on how to reduce future climate change risks. o Continue to pursue the recruitment and retention of "green" businesses and manufacturers in Chula Vista.
SOURCE: City of Chula Vista 2011.	

4.0 Significance Criteria and Analysis Methodologies

4.1 Determining Significance

The CEQA Guidelines, Appendix G Environmental Checklist, includes the following two questions regarding assessment of GHG emissions:

1) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs?

As stated in the CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions).

A stationary source is one with an identified emission point or points, often associated with industrial processes. Stationary sources typically include facilities with cogeneration, boilers, flares, and heaters. Single facilities can have many individual emission points. Many of these types of facilities would require an air quality permit from the San Diego Air Pollution Control District (SDAPCD). The permit issued by SDAPCD would normally include certain permit conditions. Facilities that are subject to SDAPCD permits may be required to implement Toxic Best Available Control Technology (T-BACT) or Best Available Control Measures (BACM). T-BACT or BACM may include equipment or operational thresholds to reduce air pollutant emissions, which can also affect GHG emissions. For purposes of the analysis, and that the single greatest emission source would be proposed boilers, the project is considered a stationary source for evaluating GHG emissions.

For the purposes of this analysis, the project would have a cumulatively considerable GHG impact if it would result in a net increase of GHG emissions, either directly or indirectly, at a level exceeding 10,000 MT CO_2E annually. For projects including a stationary source, emissions calculations must also include construction emissions and operational emissions associated with mobile sources, electricity use, water delivery, and other non-stationary sources associated with the facility to ensure all GHG emissions are included in the evaluation.

This guidance for determining significance is intended to apply a significance level that would capture the vast majority of stationary source emissions. This is also the threshold at which the state requires facilities to report GHG emissions under the 2013 Mandatory Greenhouse Gas Reporting Regulation. The 10,000 MT CO_2E threshold is based on evaluation performed by various air districts on permitted sources, and sets a significance threshold that would capture more than 90 percent of GHG emissions. This stationary source threshold has been adopted by the South Coast Air Quality Management District (SCAQMD) and the San Luis Obispo County Air Pollution Control District. Based on information collected from the SDAPCD on permitted sources, the 10,000 MT CO_2E threshold would capture more than 90 percent of GHG emissions (County of San Diego 2012).

4.2 Methodology and Assumptions

To evaluate the project's GHG emissions, emissions were calculated using California Emissions Estimator Model (CalEEMod). CalEEMod was developed with the participation of several state air districts. The emissions sources include construction (off-road vehicles), mobile (on-road vehicles), area sources (fireplaces, consumer products [cleansers, aerosols, solvents], landscape maintenance equipment, architectural coatings), water and wastewater, and solid waste sources.

GHG emissions are estimated in terms of total MT CO_2E. CO_2E emissions are the preferred way to assess combined GHG emissions, because they give weight to the GWP of a gas. The GWP, as described above in Section 1.2, is the potential of a gas to warm the global climate in the same amount as an equivalent amount of emissions of CO_2.

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).

4.2.1 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 assumed using 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.

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. Total project construction GHG emissions were amortized over 30 years, the approximately lifetime of a project, and added to operational emissions in order to provide annual emission rate over the lifetime of a project (South Coast Air Quality Management District 2009).

As discussed previously, the portion of the campus where the Ocean View Tower would be constructed has been previously graded in order to accommodate the new loop road, but is otherwise undeveloped. CalEEMod defaults for construction phasing equipment, worker trips, and vendor trips were used.

4.2.2 Stationary Source Emissions

As discussed previously, the project proposes the installation of new mechanical equipment including boilers, chillers, a cooling tower, air handling units, and an emergency generator. The analysis of potential GHG impacts presented here only addresses those pieces of equipment directly affected by the project that would generate emissions which would be the boilers.

The project would include three Cleaver Brooks ClearFire®-LC 10,000 high efficiency, low NO_x, condensing boilers. Only one of the three boilers would typically operate a majority of the time. A second boiler would provide additional capacity as necessary during extreme weather days to maintain room temperatures. The third boiler is required as a standby unit under the building code. It would not operate unless one of the other boilers failed, i.e. at no time would three boilers be operating. Emissions due to the boilers were calculated based on the full operation of a single boiler (100 percent) and partial operation of a second boiler during the day (20 percent), which is proportional to a three at 40 percent of the total capacity 24 hours per day. This would be equivalent to one boiler operating at 100 percent capacity and a second boiler operating approximately 20 percent of the time. All GHG emission calculations are based on U.S. EPA AP-42 emission factors.

4.2.3 Area Source Emissions

Area sources include GHG emissions that would occur from the use of landscaping equipment. The use of landscape equipment emits GHGs associated with the equipment's

fuel combustion. The landscaping equipment emission values were derived from the 2011 In-Use Off-Road Equipment Inventory Model (CARB 2011c).

4.2.4 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 association 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 CEC-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).

For the project, the effects of the California Building Code were accounted for by reducing the Title 24 electricity intensity factor in CalEEMod by 21.8 percent and reducing the Title 24 natural gas intensity factor in CalEEMod by 16.8 percent (CEC 2013).

The project would be served by San Diego Gas & Electric (SDG&E). Therefore, SDG&E's specific energy-intensity factors are used in the calculations of GHG emissions per kilowatt-hour consumed. As discussed, the state mandate for renewable energy is 33 percent by 2020. However, the energy-intensity factors included in CalEEMod by default only represent a 10.2 percent procurement of renewable energy (SDG&E 2011). To account for the continuing effects of RPS through 2020, the energy-intensity factors included in CalEEMod were reduced by an additional 22.8 percent.

4.2.5 Vehicle Emissions

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 standards for project emissions. The emissions from mobile sources were reduced by an additional 2.4 percent to account for implementation of Low Emission Vehicles III.

Vehicle trip generation rates were based on the project traffic report, which identified a rate of 20 trips per bed. An average regional trip length of 5.8 miles for urban areas was used to determine vehicle miles traveled (VMT) based on SANDAG regional data (SANDAG 2014).

4.2.6 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. The project was credited an additional 25 percent reduction due to the waste reduction requirements for medical facilities.

4.2.7 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 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, known as CalGreen. Thus, in order to demonstrate compliance with CalGreen, a 20 percent increase in indoor water use efficiency was included in the water consumption calculations for the project.

Additionally, as discussed previously, the energy-intensity factors included in CalEEMod 2013 represent a 10.2 percent procurement of renewable energy. To account for the continuing effects of RPS through 2020, the energy-intensity factors included in CalEEMod were reduced by an additional 22.8 percent.

4.2.8 Emissions Modeling Summary

Table 6 provides a summary of the calculation methodology for each emission source calculated.

Table 6
Comparison of Methodologies

Source		Project
Construction		Construction emissions were amortized over 30 years and added to operational emissions.
Vehicles		Vehicle emissions were calculated using vehicle emission factors for year 2020. Calculations also took into account LEV III, the tire pressure program which achieves a 0.3 percent reduction in GHG Emissions from vehicles.
Energy		Energy emissions include increased energy efficiency (21.8 percent over 2008 Energy Code standards for electricity and 16.8 percent for natural gas.) Additionally, to account for the continuing effects of RPS through 2020, the SDG&E energy-intensity factors included in CalEEMod were reduced by an additional 22.8 percent.
Boilers		Emissions due to the boilers were calculated using U.S. EPA AP-42 emission factors. Emissions were calculated with boilers operating at 40 percent of the total capacity 24 hours per day.
Area		Area-source emissions were calculated based on standard landscaping equipment and quantities. The project would not include fireplaces.
Water		A 20 percent decrease in indoor water use was included in the water consumption calculations in accordance with 2013 Title 24 Part 11. Additionally, to account for the continuing effects of RPS through 2020, the SDG&E energy-intensity factors included in CalEEMod were reduced by an additional 22.8 percent.
Solid Waste		At 25 percent reduction in waste was applied to account for the waste reduction plan.

5.0 GHG Emissions Calculations

As the project site is currently undeveloped, the project would result in an obvious change to the existing GHG emissions from the existing condition. As climate change is occurring on a global scale, it is not meaningful or possible to quantify the scientific effect of new GHG emissions caused by a single project or whether a project's net increase in GHG emissions, when coupled with other activities in the region, is cumulatively considerable. The Sacramento Metropolitan Air Quality Management District (SMAQMD) has recognized "that there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere" (SMAQMD 2014).

Additionally, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has concluded, "existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change" (SJVAPCD 2009). There is no scientific or regulatory consensus regarding what particular quantity of GHG emissions is considered significant, and there remains no applicable, adopted numeric threshold for assessing the significance of a project's emissions. Indeed, unlike criteria pollutants, GHG emissions and climate change are not localized effects, and their magnitude cannot be quantified locally (CAPCOA 2008). Thus, an increase of GHG emissions alone is not a sufficiently informative or reliable indicator of the significance of the project's GHG emissions. Therefore, the impact of project GHG emissions is based on a stationary source GHG emission threshold of 10,000 MT CO_2E annually.

Based on the methodology summarized in Section 4.2, Methodology and Assumptions, the primary sources of direct and indirect GHG emissions have been calculated. Table 7 summarizes the project emissions. The complete CalEEMod outputs for the project are included in Attachment 1, and boiler emission calculations are included in Attachment 2.

Table 7
Project GHG Emissions
(MT CO_2E per Year)

Emission Source	Project GHG Emissions
Area	0
Energy	1,293
Vehicles	1,428
Solid Waste	137
Water Use	50
Construction	34
Boilers	5,621
TOTAL	**8,565**
NOTE: Totals may vary due to independent rounding	

As shown, the project would result in a total of 8,565 MT CO_2E per year.

6.0 GHG Impact Analysis

6.1 GHG Emissions

6.1.1 Impacts

For the purposes of this analysis, the project would have a cumulatively considerable GHG impact if it would result in a net increase of GHG emissions, either directly or indirectly, at a level exceeding 10,000 MT CO_2E per year. As shown, the project would result in a total of 8,565 MT CO_2E per year.

6.1.2 Significance of Impacts

As demonstrated, the project would result in less than 10,000 MT CO_2E annually, and the level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than significant.

6.2 Adopted Plans, Policies, and Regulations Intended to Reduce GHG Emissions

6.2.1 Impacts

The following analysis is based on the whether the project would conflict with policies, plans, or regulations. Thus, the question is not whether the GHG emissions from the project would be controlled by regulations to the extent they are not considered significant, but rather would the project result in a conflict with a policy, plans, or regulations that would result in the policy, plan, or regulation not be implemented or creating a situation where the goals of the plan, policy, or regulation could not be achieved.

EO S-3-05 established GHG emission reduction targets for the state, and AB 32 codified the 2020 goal of EO S-3-05 and launched the Climate Change Scoping Plan (CARB 2008) that outlined the reduction measures needed to reach these targets. Subsequent to the adoption of AB 32 and the development of the Scoping Plan, several levels of government have implemented regulatory programs to reduce GHG emissions. Several state agencies, including CARB, CEC, CPUC, the Department of Resources Recycling and Recovery, the Department of Transportation, the Department of Forestry and Fire Protection, the Department of Water Resources, the Department of Food and Agriculture, and the Department of Goods and Services have developed regulatory and incentive programs to reduce GHG emissions. Many of the measures are generally beyond the ability of any future development to affect as these measures, such as RPS, are implanted at the utility provider or the manufacturer level. However, the project would not conflict with these measures nor block their implementation. The project achieves mobile source reductions from the state's implementation of regulations that increase fuel efficiency and reduce GHG emissions from mobile sources. Additionally, compliance with 2013 Title 24 regulations

would reduce GHG emissions associated with energy and water use. Therefore, the project would not conflict with the state reduction targets for transportation, energy, and other emissions associated with land use and development, and would not conflict with the Scoping Plan. Thus, the project would have a less than significant impact on applicable state plans, policies and regulations adopted for the purpose of reducing the emission of GHGs.

As discussed in Section 3.2.2.1, EO S-3-05 establishes an executive policy of reducing GHG emissions to 80 percent below 1990 levels by 2050. Additionally, EO B-30-15 establishes an interim GHG emission reduction policy by the executive branch for the state of California to reduce GHG emissions 40 percent below 1990 levels by 2030. The 2020 GHG emission policy of EO S-3-05, to reduce GHG emissions to 1990 levels by 2020, was codified by the Legislature's adoption of AB 32. As discussed above, the project would be consistent with the reduction goals of AB 32. The 2050 goal of EO S-3-05 was not codified by the Legislature. Similarly, EO B-30-15's goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030 has not been codified by the Legislature. Nonetheless, because these two EOs represent a GHG reduction policy in the context of CEQA and the strong interest in California's post-2020 climate policy, this analysis renders a determination as to whether the project would conflict with or impede substantial progress towards the statewide reduction policies established by EO B-30-15 for 2030 and by EO S-3-05 for 2050.

The City relies, in part, on CARB's expertise to conclude that the project does not interfere with the state's efforts to achieve the 2030 and 2050 targets. CARB notes in the First Update to the Scoping Plan that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014b). With regard to the 2030 and 2050 targets, the First Update to the Scoping Plan states (CARB 2014b, Greenblatt 2013):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed energy by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2030, could lead to even greater emission reductions.

In other words, CARB's expert opinion is that the state is on a trajectory to meet the 2020, 2030, and 2050 GHG reduction targets set forth in AB 32, Executive Order B-30-15 and Executive Order S-3-05.

As illustrated above, the project would emit less than 10,000 MT CO_2E annually. Further, the project's 2020 emissions totals represent the maximum emissions inventory for the project; as project emissions would continue to decline from 2020 through at least 2050 based on regulatory forecasting. Emission reductions beyond 2020 would occur because of continuing implementation of regulations that further increase vehicle fuel efficiency and

reduce GHG emissions from mobile sources, and the continuing procurement of renewable energy sources to meet RPS goals through year 2030. Given the reasonably anticipated decline in project emissions once fully constructed and operational, the project is in line with the GHG reductions needed to achieve the EOs' interim (2030) and horizon-year (2050) goals. Therefore, the project would not conflict with the long-term GHG policy goals of the state. As such, the project's impacts with respect to EO B-30-15 and EO S-3-05 are expected to be less than significant.

6.2.2 Significance of Impacts

The project would not conflict with any local or state plan, policy, or regulation aimed at reducing GHG emissions from land use and development. The level of impacts would be less than significant.

7.0 Conclusions

As demonstrated, the project would result in less than 10,000 MT CO_2E annually, and the level of impacts associated with contribution of GHGs to cumulative statewide emissions would be less than cumulatively considerable. The project would not conflict with any local or state plan, policy, or regulation aimed at reducing GHG emissions from land development. Therefore, the project's overall contribution to cumulative GHG emissions would be less than significant.

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ATTACHMENTS

ATTACHMENT 1

CalEEMod Output – Project Emissions

Sharp Chula Vista Hospital - 2020

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
Hospital	138.00	Bed	2.50	197,696.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	537.56	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2020

Land Use - Based on project description

Construction Phase - based on project construction schedule

On-road Fugitive Dust - No change

Demolition - 2,500 square feet

Grading - based on project description

Architectural Coating - SDAPCD Rule 67

Vehicle Trips - Based on Traffic Report and SANDAG average trip distance

Vechicle Emission Factors - 2020 model default

Vechicle Emission Factors - 2020 model default

Vechicle Emission Factors - 2020 model default

Area Coating - SDAPCD Rule 67

Energy Use - Title 24 2013

Water And Wastewater - Title 24 2013 20% reduction

Solid Waste - 25% Reduction

Construction Off-road Equipment Mitigation - No mitigation

Mobile Land Use Mitigation - No mitigation

Mobile Commute Mitigation - No mitigation

Area Mitigation - No change

Energy Mitigation - No mitigation

Water Mitigation - No mitigation

Waste Mitigation - No mitigation

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150

tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	10.00	239.00
tblConstructionPhase	NumDays	220.00	501.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	6.00	50.00
tblConstructionPhase	NumDays	10.00	41.00
tblConstructionPhase	NumDays	3.00	110.00
tblConstructionPhase	PhaseStartDate	12/31/2016	1/1/2017
tblEnergyUse	T24E	6.68	5.22
tblEnergyUse	T24NG	51.31	42.69
tblGrading	AcresOfGrading	25.00	2.50
tblGrading	AcresOfGrading	165.00	2.50
tblLandUse	LandUseSquareFeet	98,774.55	197,696.00
tblLandUse	LotAcreage	2.27	2.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	720.49	537.56
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	402.96	302.22
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	WD_TR	11.81	20.00
tblWater	IndoorWaterUseRate	12,394,283.06	9,915,426.45

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	0.2755	2.9024	1.9512	2.4500e-003	0.0106	0.1574	0.1680	2.4700e-003	0.1460	0.1484	0.0000	227.4299	227.4299	0.0620	0.0000	228.7311
2017	0.4455	3.2657	2.5382	3.8800e-003	0.1918	0.1947	0.3865	0.0937	0.1849	0.2786	0.0000	331.7040	331.7040	0.0656	0.0000	333.0825
2018	0.4107	2.8634	2.4493	4.1500e-003	0.0471	0.1659	0.2130	0.0128	0.1590	0.1717	0.0000	346.7298	346.7298	0.0607	0.0000	348.0045
2019	0.5721	0.5150	0.5071	8.9000e-004	0.0110	0.0315	0.0424	2.9500e-003	0.0308	0.0337	0.0000	73.5191	73.5191	9.3900e-003	0.0000	73.7164
2020	0.0424	0.2425	0.2563	4.1000e-004	2.6600e-003	0.0138	0.0164	7.1000e-004	0.0127	0.0134	0.0000	34.4915	34.4915	0.0101	0.0000	34.7039
Total	**1.7462**	**9.7890**	**7.7020**	**0.0118**	**0.2631**	**0.5633**	**0.8263**	**0.1126**	**0.5333**	**0.6459**	**0.0000**	**1,013.8743**	**1,013.8743**	**0.2078**	**0.0000**	**1,018.2384**

2.1 Overall Construction

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	0.2755	2.9024	1.9511	2.4500e-003	0.0106	0.1574	0.1680	2.4700e-003	0.1460	0.1484	0.0000	227.4296	227.4296	0.0620	0.0000	228.7309
2017	0.4455	3.2657	2.5382	3.8800e-003	0.1918	0.1947	0.3865	0.0937	0.1849	0.2786	0.0000	331.7037	331.7037	0.0656	0.0000	333.0822
2018	0.4107	2.8634	2.4493	4.1500e-003	0.0471	0.1659	0.2130	0.0128	0.1590	0.1717	0.0000	346.7294	346.7294	0.0607	0.0000	348.0042
2019	0.5721	0.5150	0.5071	8.9000e-004	0.0110	0.0315	0.0424	2.9500e-003	0.0308	0.0337	0.0000	73.5190	73.5190	9.3900e-003	0.0000	73.7163
2020	0.0424	0.2425	0.2563	4.1000e-004	2.6600e-003	0.0138	0.0164	7.1000e-004	0.0127	0.0134	0.0000	34.4915	34.4915	0.0101	0.0000	34.7039
Total	**1.7462**	**9.7890**	**7.7020**	**0.0118**	**0.2631**	**0.5633**	**0.8263**	**0.1126**	**0.5333**	**0.6459**	**0.0000**	**1,013.8733**	**1,013.8733**	**0.2078**	**0.0000**	**1,018.2374**

	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	0.8409	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003
Energy	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	1,287.4227	1,287.4227	0.0413	0.0167	1,293.4676
Mobile	1.0647	1.7960	9.1723	0.0212	1.4311	0.0252	1.4563	0.3827	0.0233	0.4060	0.0000	1,471.3031	1,471.3031	0.0595	0.0000	1,472.5520
Waste						0.0000	0.0000		0.0000	0.0000	61.3479	0.0000	61.3479	3.6256	0.0000	137.4847
Water						0.0000	0.0000		0.0000	0.0000	3.1457	37.8764	41.0221	0.3246	7.9800e-003	50.3138
Total	**1.9585**	**2.2768**	**9.5774**	**0.0241**	**1.4311**	**0.0618**	**1.4928**	**0.3827**	**0.0598**	**0.4426**	**64.4936**	**2,796.6047**	**2,861.0983**	**4.0510**	**0.0247**	**2,953.8208**

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	0.8409	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003
Energy	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	1,287.4227	1,287.4227	0.0413	0.0167	1,293.4676
Mobile	1.0647	1.7960	9.1723	0.0212	1.4311	0.0252	1.4563	0.3827	0.0233	0.4060	0.0000	1,471.3031	1,471.3031	0.0595	0.0000	1,472.5520
Waste						0.0000	0.0000		0.0000	0.0000	61.3479	0.0000	61.3479	3.6256	0.0000	137.4847
Water						0.0000	0.0000		0.0000	0.0000	3.1457	37.8764	41.0221	0.3246	7.9700e-003	50.3098
Total	**1.9585**	**2.2768**	**9.5774**	**0.0241**	**1.4311**	**0.0618**	**1.4928**	**0.3827**	**0.0598**	**0.4426**	**64.4936**	**2,796.6047**	**2,861.0983**	**4.0509**	**0.0247**	**2,953.8167**

	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**	**0.04**	**0.00**

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	4/4/2016	7/29/2016	5	85	
2	Site Preparation	Site Preparation	7/30/2016	12/30/2016	5	110	
3	Grading	Grading	1/1/2017	3/10/2017	5	50	
4	Building Construction	Building Construction	3/11/2017	2/11/2019	5	501	
5	Architectural Coating	Architectural Coating	2/12/2019	1/10/2020	5	239	
6	Paving	Paving	1/11/2020	3/9/2020	5	41	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 2.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 148,162; Non-Residential Outdoor: 49,387 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Scrapers	1	8.00	361	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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	5	13.00	0.00	11.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	32.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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					1.2500e-003	0.0000	1.2500e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1235	1.2010	0.9137	1.0400e-003		0.0741	0.0741		0.0694	0.0694	0.0000	95.8922	95.8922	0.0242	0.0000	96.4013
Total	**0.1235**	**1.2010**	**0.9137**	**1.0400e-003**	**1.2500e-003**	**0.0741**	**0.0754**	**1.9000e-004**	**0.0694**	**0.0696**	**0.0000**	**95.8922**	**95.8922**	**0.0242**	**0.0000**	**96.4013**

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	1.2000e-004	1.6000e-003	1.3200e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3757	0.3757	0.0000	0.0000	0.3757
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	1.9000e-003	2.5000e-003	0.0239	5.0000e-005	4.4300e-003	3.0000e-005	4.4600e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	4.1289	4.1289	2.2000e-004	0.0000	4.1335
Total	**2.0200e-003**	**4.1000e-003**	**0.0252**	**5.0000e-005**	**4.5200e-003**	**5.0000e-005**	**4.5700e-003**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**0.0000**	**4.5046**	**4.5046**	**2.2000e-004**	**0.0000**	**4.5092**

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					1.2500e-003	0.0000	1.2500e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1235	1.2010	0.9137	1.0400e-003		0.0741	0.0741		0.0694	0.0694	0.0000	95.8920	95.8920	0.0242	0.0000	96.4012
Total	**0.1235**	**1.2010**	**0.9137**	**1.0400e-003**	**1.2500e-003**	**0.0741**	**0.0754**	**1.9000e-004**	**0.0694**	**0.0696**	**0.0000**	**95.8920**	**95.8920**	**0.0242**	**0.0000**	**96.4012**

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	1.2000e-004	1.6000e-003	1.3200e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	3.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.3757	0.3757	0.0000	0.0000	0.3757
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	1.9000e-003	2.5000e-003	0.0239	5.0000e-005	4.4300e-003	3.0000e-005	4.4600e-003	1.1800e-003	3.0000e-005	1.2100e-003	0.0000	4.1289	4.1289	2.2000e-004	0.0000	4.1335
Total	**2.0200e-003**	**4.1000e-003**	**0.0252**	**5.0000e-005**	**4.5200e-003**	**5.0000e-005**	**4.5700e-003**	**1.2100e-003**	**5.0000e-005**	**1.2600e-003**	**0.0000**	**4.5046**	**4.5046**	**2.2000e-004**	**0.0000**	**4.5092**

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					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1485	1.6953	0.9933	1.3100e-003		0.0831	0.0831		0.0765	0.0765	0.0000	123.7450	123.7450	0.0373	0.0000	124.5288
Total	**0.1485**	**1.6953**	**0.9933**	**1.3100e-003**	**1.3300e-003**	**0.0831**	**0.0845**	**1.4000e-004**	**0.0765**	**0.0766**	**0.0000**	**123.7450**	**123.7450**	**0.0373**	**0.0000**	**124.5288**

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	1.5100e-003	1.9900e-003	0.0190	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2918
Total	**1.5100e-003**	**1.9900e-003**	**0.0190**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.2882**	**3.2882**	**1.7000e-004**	**0.0000**	**3.2918**

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					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1485	1.6953	0.9933	1.3100e-003		0.0831	0.0831		0.0765	0.0765	0.0000	123.7448	123.7448	0.0373	0.0000	124.5287
Total	**0.1485**	**1.6953**	**0.9933**	**1.3100e-003**	**1.3300e-003**	**0.0831**	**0.0845**	**1.4000e-004**	**0.0765**	**0.0766**	**0.0000**	**123.7448**	**123.7448**	**0.0373**	**0.0000**	**124.5287**

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	1.5100e-003	1.9900e-003	0.0190	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.2882	3.2882	1.7000e-004	0.0000	3.2918
Total	**1.5100e-003**	**1.9900e-003**	**0.0190**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.2882**	**3.2882**	**1.7000e-004**	**0.0000**	**3.2918**

3.4 Grading - 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					
Fugitive Dust					0.1519	0.0000	0.1519	0.0829	0.0000	0.0829	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0674	0.7040	0.4742	5.1000e-004		0.0389	0.0389		0.0358	0.0358	0.0000	47.7309	47.7309	0.0146	0.0000	48.0381
Total	**0.0674**	**0.7040**	**0.4742**	**5.1000e-004**	**0.1519**	**0.0389**	**0.1908**	**0.0829**	**0.0358**	**0.1187**	**0.0000**	**47.7309**	**47.7309**	**0.0146**	**0.0000**	**48.0381**

3.4 Grading - 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	7.8000e-004	1.0300e-003	9.7300e-003	2.0000e-005	2.0000e-003	1.0000e-005	2.0200e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.7961	1.7961	9.0000e-005	0.0000	1.7980
Total	**7.8000e-004**	**1.0300e-003**	**9.7300e-003**	**2.0000e-005**	**2.0000e-003**	**1.0000e-005**	**2.0200e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.7961**	**1.7961**	**9.0000e-005**	**0.0000**	**1.7980**

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					0.1519	0.0000	0.1519	0.0829	0.0000	0.0829	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0674	0.7040	0.4742	5.1000e-004		0.0389	0.0389		0.0358	0.0358	0.0000	47.7309	47.7309	0.0146	0.0000	48.0380
Total	**0.0674**	**0.7040**	**0.4742**	**5.1000e-004**	**0.1519**	**0.0389**	**0.1908**	**0.0829**	**0.0358**	**0.1187**	**0.0000**	**47.7309**	**47.7309**	**0.0146**	**0.0000**	**48.0380**

3.4 Grading - 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	7.8000e-004	1.0300e-003	9.7300e-003	2.0000e-005	2.0000e-003	1.0000e-005	2.0200e-003	5.3000e-004	1.0000e-005	5.5000e-004	0.0000	1.7961	1.7961	9.0000e-005	0.0000	1.7980
Total	**7.8000e-004**	**1.0300e-003**	**9.7300e-003**	**2.0000e-005**	**2.0000e-003**	**1.0000e-005**	**2.0200e-003**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**1.7961**	**1.7961**	**9.0000e-005**	**0.0000**	**1.7980**

3.5 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	0.3494	2.4001	1.7062	2.6100e-003		0.1535	0.1535		0.1470	0.1470	0.0000	222.4048	222.4048	0.0494	0.0000	223.4428
Total	**0.3494**	**2.4001**	**1.7062**	**2.6100e-003**		**0.1535**	**0.1535**		**0.1470**	**0.1470**	**0.0000**	**222.4048**	**222.4048**	**0.0494**	**0.0000**	**223.4428**

3.5 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	0.0175	0.1467	0.2173	4.0000e-004	0.0109	2.1000e-003	0.0130	3.1300e-003	1.9300e-003	5.0600e-003	0.0000	35.6328	35.6328	2.7000e-004	0.0000	35.6384
Worker	0.0104	0.0138	0.1308	3.3000e-004	0.0269	2.0000e-004	0.0272	7.1600e-003	1.9000e-004	7.3500e-003	0.0000	24.1395	24.1395	1.2300e-003	0.0000	24.1652
Total	**0.0279**	**0.1606**	**0.3481**	**7.3000e-004**	**0.0379**	**2.3000e-003**	**0.0402**	**0.0103**	**2.1200e-003**	**0.0124**	**0.0000**	**59.7723**	**59.7723**	**1.5000e-003**	**0.0000**	**59.8037**

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	0.3494	2.4001	1.7062	2.6100e-003		0.1535	0.1535		0.1470	0.1470	0.0000	222.4045	222.4045	0.0494	0.0000	223.4425
Total	**0.3494**	**2.4001**	**1.7062**	**2.6100e-003**		**0.1535**	**0.1535**		**0.1470**	**0.1470**	**0.0000**	**222.4045**	**222.4045**	**0.0494**	**0.0000**	**223.4425**

3.5 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	0.0175	0.1467	0.2173	4.0000e-004	0.0109	2.1000e-003	0.0130	3.1300e-003	1.9300e-003	5.0600e-003	0.0000	35.6328	35.6328	2.7000e-004	0.0000	35.6384
Worker	0.0104	0.0138	0.1308	3.3000e-004	0.0269	2.0000e-004	0.0272	7.1600e-003	1.9000e-004	7.3500e-003	0.0000	24.1395	24.1395	1.2300e-003	0.0000	24.1652
Total	**0.0279**	**0.1606**	**0.3481**	**7.3000e-004**	**0.0379**	**2.3000e-003**	**0.0402**	**0.0103**	**2.1200e-003**	**0.0124**	**0.0000**	**59.7723**	**59.7723**	**1.5000e-003**	**0.0000**	**59.8037**

3.5 Building Construction - 2018

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	0.3785	2.6831	2.0441	3.2500e-003		0.1633	0.1633		0.1565	0.1565	0.0000	274.3288	274.3288	0.0590	0.0000	275.5669
Total	**0.3785**	**2.6831**	**2.0441**	**3.2500e-003**		**0.1633**	**0.1633**		**0.1565**	**0.1565**	**0.0000**	**274.3288**	**274.3288**	**0.0590**	**0.0000**	**275.5669**

3.5 Building Construction - 2018

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	0.0204	0.1647	0.2581	4.9000e-004	0.0136	2.4200e-003	0.0160	3.8900e-003	2.2300e-003	6.1100e-003	0.0000	43.5257	43.5257	3.3000e-004	0.0000	43.5325
Worker	0.0118	0.0157	0.1471	4.1000e-004	0.0335	2.4000e-004	0.0337	8.9000e-003	2.3000e-004	9.1300e-003	0.0000	28.8753	28.8753	1.4200e-003	0.0000	28.9051
Total	**0.0322**	**0.1803**	**0.4052**	**9.0000e-004**	**0.0471**	**2.6600e-003**	**0.0497**	**0.0128**	**2.4600e-003**	**0.0152**	**0.0000**	**72.4009**	**72.4009**	**1.7500e-003**	**0.0000**	**72.4376**

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	0.3785	2.6831	2.0441	3.2500e-003		0.1633	0.1633		0.1565	0.1565	0.0000	274.3285	274.3285	0.0590	0.0000	275.5665
Total	**0.3785**	**2.6831**	**2.0441**	**3.2500e-003**		**0.1633**	**0.1633**		**0.1565**	**0.1565**	**0.0000**	**274.3285**	**274.3285**	**0.0590**	**0.0000**	**275.5665**

3.5 Building Construction - 2018

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	0.0204	0.1647	0.2581	4.9000e-004	0.0136	2.4200e-003	0.0160	3.8900e-003	2.2300e-003	6.1100e-003	0.0000	43.5257	43.5257	3.3000e-004	0.0000	43.5325
Worker	0.0118	0.0157	0.1471	4.1000e-004	0.0335	2.4000e-004	0.0337	8.9000e-003	2.3000e-004	9.1300e-003	0.0000	28.8753	28.8753	1.4200e-003	0.0000	28.9051
Total	**0.0322**	**0.1803**	**0.4052**	**9.0000e-004**	**0.0471**	**2.6600e-003**	**0.0497**	**0.0128**	**2.4600e-003**	**0.0152**	**0.0000**	**72.4009**	**72.4009**	**1.7500e-003**	**0.0000**	**72.4376**

3.5 Building Construction - 2019

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	0.0382	0.2817	0.2281	3.7000e-004		0.0163	0.0163		0.0156	0.0156	0.0000	31.2949	31.2949	6.4900e-003	0.0000	31.4312
Total	**0.0382**	**0.2817**	**0.2281**	**3.7000e-004**		**0.0163**	**0.0163**		**0.0156**	**0.0156**	**0.0000**	**31.2949**	**31.2949**	**6.4900e-003**	**0.0000**	**31.4312**

3.5 Building Construction - 2019

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	2.1900e-003	0.0172	0.0283	6.0000e-005	1.5600e-003	2.6000e-004	1.8200e-003	4.5000e-004	2.4000e-004	6.8000e-004	0.0000	4.9167	4.9167	4.0000e-005	0.0000	4.9175
Worker	1.2600e-003	1.6700e-003	0.0156	5.0000e-005	3.8500e-003	3.0000e-005	3.8800e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.1989	3.1989	1.5000e-004	0.0000	3.2022
Total	**3.4500e-003**	**0.0189**	**0.0439**	**1.1000e-004**	**5.4100e-003**	**2.9000e-004**	**5.7000e-003**	**1.4700e-003**	**2.7000e-004**	**1.7300e-003**	**0.0000**	**8.1157**	**8.1157**	**1.9000e-004**	**0.0000**	**8.1197**

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	0.0382	0.2817	0.2281	3.7000e-004		0.0163	0.0163		0.0156	0.0156	0.0000	31.2949	31.2949	6.4900e-003	0.0000	31.4312
Total	**0.0382**	**0.2817**	**0.2281**	**3.7000e-004**		**0.0163**	**0.0163**		**0.0156**	**0.0156**	**0.0000**	**31.2949**	**31.2949**	**6.4900e-003**	**0.0000**	**31.4312**

3.5 Building Construction - 2019

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	2.1900e-003	0.0172	0.0283	6.0000e-005	1.5600e-003	2.6000e-004	1.8200e-003	4.5000e-004	2.4000e-004	6.8000e-004	0.0000	4.9167	4.9167	4.0000e-005	0.0000	4.9175
Worker	1.2600e-003	1.6700e-003	0.0156	5.0000e-005	3.8500e-003	3.0000e-005	3.8800e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.1989	3.1989	1.5000e-004	0.0000	3.2022
Total	**3.4500e-003**	**0.0189**	**0.0439**	**1.1000e-004**	**5.4100e-003**	**2.9000e-004**	**5.7000e-003**	**1.4700e-003**	**2.7000e-004**	**1.7300e-003**	**0.0000**	**8.1157**	**8.1157**	**1.9000e-004**	**0.0000**	**8.1197**

3.6 Architectural Coating - 2019

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	0.4978					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.2120	0.2127	3.4000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	29.4901	29.4901	2.4900e-003	0.0000	29.5424
Total	**0.5286**	**0.2120**	**0.2127**	**3.4000e-004**		**0.0149**	**0.0149**		**0.0149**	**0.0149**	**0.0000**	**29.4901**	**29.4901**	**2.4900e-003**	**0.0000**	**29.5424**

3.6 Architectural Coating - 2019

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	1.8200e-003	2.4100e-003	0.0225	7.0000e-005	5.5600e-003	4.0000e-005	5.6000e-003	1.4800e-003	4.0000e-005	1.5100e-003	0.0000	4.6185	4.6185	2.2000e-004	0.0000	4.6231
Total	**1.8200e-003**	**2.4100e-003**	**0.0225**	**7.0000e-005**	**5.5600e-003**	**4.0000e-005**	**5.6000e-003**	**1.4800e-003**	**4.0000e-005**	**1.5100e-003**	**0.0000**	**4.6185**	**4.6185**	**2.2000e-004**	**0.0000**	**4.6231**

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	0.4978					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.2120	0.2127	3.4000e-004		0.0149	0.0149		0.0149	0.0149	0.0000	29.4901	29.4901	2.4900e-003	0.0000	29.5424
Total	**0.5286**	**0.2120**	**0.2127**	**3.4000e-004**		**0.0149**	**0.0149**		**0.0149**	**0.0149**	**0.0000**	**29.4901**	**29.4901**	**2.4900e-003**	**0.0000**	**29.5424**

3.6 Architectural Coating - 2019

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	1.8200e-003	2.4100e-003	0.0225	7.0000e-005	5.5600e-003	4.0000e-005	5.6000e-003	1.4800e-003	4.0000e-005	1.5100e-003	0.0000	4.6185	4.6185	2.2000e-004	0.0000	4.6231
Total	**1.8200e-003**	**2.4100e-003**	**0.0225**	**7.0000e-005**	**5.5600e-003**	**4.0000e-005**	**5.6000e-003**	**1.4800e-003**	**4.0000e-005**	**1.5100e-003**	**0.0000**	**4.6185**	**4.6185**	**2.2000e-004**	**0.0000**	**4.6231**

3.6 Architectural Coating - 2020

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	0.0172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7000e-004	6.7400e-003	7.3300e-003	1.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	1.0213	1.0213	8.0000e-005	0.0000	1.0230
Total	**0.0182**	**6.7400e-003**	**7.3300e-003**	**1.0000e-005**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**8.0000e-005**	**0.0000**	**1.0230**

3.6 Architectural Coating - 2020

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	6.0000e-005	8.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1535	0.1535	1.0000e-005	0.0000	0.1537
Total	**6.0000e-005**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1535**	**0.1535**	**1.0000e-005**	**0.0000**	**0.1537**

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	0.0172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7000e-004	6.7400e-003	7.3300e-003	1.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	1.0213	1.0213	8.0000e-005	0.0000	1.0230
Total	**0.0182**	**6.7400e-003**	**7.3300e-003**	**1.0000e-005**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**8.0000e-005**	**0.0000**	**1.0230**

3.6 Architectural Coating - 2020

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	6.0000e-005	8.0000e-005	7.3000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1535	0.1535	1.0000e-005	0.0000	0.1537
Total	**6.0000e-005**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1535**	**0.1535**	**1.0000e-005**	**0.0000**	**0.1537**

3.7 Paving - 2020

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	0.0234	0.2347	0.2390	3.6000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	31.3500	31.3500	9.9300e-003	0.0000	31.5586
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0234**	**0.2347**	**0.2390**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0123**	**0.0123**	**0.0000**	**31.3500**	**31.3500**	**9.9300e-003**	**0.0000**	**31.5586**

3.7 Paving - 2020

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	7.6000e-004	1.0000e-003	9.3100e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4800e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	1.9667	1.9667	9.0000e-005	0.0000	1.9687
Total	**7.6000e-004**	**1.0000e-003**	**9.3100e-003**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4800e-003**	**6.6000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**1.9667**	**1.9667**	**9.0000e-005**	**0.0000**	**1.9687**

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	0.0234	0.2347	0.2390	3.6000e-004		0.0133	0.0133		0.0123	0.0123	0.0000	31.3500	31.3500	9.9300e-003	0.0000	31.5586
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0234**	**0.2347**	**0.2390**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0123**	**0.0123**	**0.0000**	**31.3500**	**31.3500**	**9.9300e-003**	**0.0000**	**31.5586**

3.7 Paving - 2020

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	7.6000e-004	1.0000e-003	9.3100e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4800e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	1.9667	1.9667	9.0000e-005	0.0000	1.9687
Total	**7.6000e-004**	**1.0000e-003**	**9.3100e-003**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4800e-003**	**6.6000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**1.9667**	**1.9667**	**9.0000e-005**	**0.0000**	**1.9687**

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	1.0647	1.7960	9.1723	0.0212	1.4311	0.0252	1.4563	0.3827	0.0233	0.4060	0.0000	1,471.3031	1,471.3031	0.0595	0.0000	1,472.5520
Unmitigated	1.0647	1.7960	9.1723	0.0212	1.4311	0.0252	1.4563	0.3827	0.0233	0.4060	0.0000	1,471.3031	1,471.3031	0.0595	0.0000	1,472.5520

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	2,760.00	1,123.32	992.22	3,805,756	3,805,756
Total	2,760.00	1,123.32	992.22	3,805,756	3,805,756

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
Hospital	5.80	5.80	5.80	64.90	16.10	19.00	73	25	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	764.0466	764.0466	0.0313	7.1100e-003	766.9063
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	764.0466	764.0466	0.0313	7.1100e-003	766.9063
NaturalGas Mitigated	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	523.3762	523.3762	0.0100	9.6000e-003	526.5613
NaturalGas Unmitigated	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	523.3762	523.3762	0.0100	9.6000e-003	526.5613

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					
Hospital	9.8077e+006	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	523.3762	523.3762	0.0100	9.6000e-003	526.5613
Total		**0.0529**	**0.4808**	**0.4039**	**2.8800e-003**		**0.0365**	**0.0365**		**0.0365**	**0.0365**	**0.0000**	**523.3762**	**523.3762**	**0.0100**	**9.6000e-003**	**526.5613**

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					
Hospital	9.8077e+006	0.0529	0.4808	0.4039	2.8800e-003		0.0365	0.0365		0.0365	0.0365	0.0000	523.3762	523.3762	0.0100	9.6000e-003	526.5613
Total		**0.0529**	**0.4808**	**0.4039**	**2.8800e-003**		**0.0365**	**0.0365**		**0.0365**	**0.0365**	**0.0000**	**523.3762**	**523.3762**	**0.0100**	**9.6000e-003**	**526.5613**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	3.13348e+006	764.0466	0.0313	7.1100e-003	766.9063
Total		**764.0466**	**0.0313**	**7.1100e-003**	**766.9063**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	3.13348e+006	764.0466	0.0313	7.1100e-003	766.9063
Total		**764.0466**	**0.0313**	**7.1100e-003**	**766.9063**

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	0.8409	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003
Unmitigated	0.8409	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003

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	0.0687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7721					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003
Total	**0.8409**	**1.0000e-005**	**1.2800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6000e-003**

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	0.0687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7721					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4700e-003	2.4700e-003	1.0000e-005	0.0000	2.6000e-003
Total	**0.8409**	**1.0000e-005**	**1.2800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4700e-003**	**2.4700e-003**	**1.0000e-005**	**0.0000**	**2.6000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.0221	0.3246	7.9700e-003	50.3098
Unmitigated	41.0221	0.3246	7.9800e-003	50.3138

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	9.91543 / 2.36082	41.0221	0.3246	7.9800e-003	50.3138
Total		**41.0221**	**0.3246**	**7.9800e-003**	**50.3138**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	9.91543 / 2.36082	41.0221	0.3246	7.9700e-003	50.3098
Total		**41.0221**	**0.3246**	**7.9700e-003**	**50.3098**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	61.3479	3.6256	0.0000	137.4847
Unmitigated	61.3479	3.6256	0.0000	137.4847

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	302.22	61.3479	3.6256	0.0000	137.4847
Total		**61.3479**	**3.6256**	**0.0000**	**137.4847**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	302.22	61.3479	3.6256	0.0000	137.4847
Total		**61.3479**	**3.6256**	**0.0000**	**137.4847**

9.0 Operational Offroad

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

10.0 Vegetation

ATTACHMENT 2

Boiler Emission Calculations

BOILERS

3 units, each at:
10,000,000 BTU per hour,
10,000 cubic feet of natural gas per hour, or
283 cubic meters of natural gas per hour
40% of Total Capacity = 1 boiler operating at 100% capacity continuously and 1 boiler operating at 100% capacity for approximately 20% of the time

GHG	lb/10^6 scf)	lb/MMBTU	Emission Rate Source	lb/hr per boiler	lb/day per boiler	lb/day per boiler (40% Capacity)	lb/year per boiler (40% Capacity)	MT/year per boiler (40% Capacity)	MT CO2E/year per boiler (40% Capacity)	MT CO2E/year per 3 boilers (40% Capacity)
CO2	120,000	117.6470588	AP-42	1176.470588	28235.29412	11294.11765	4122352.941	1869.870064	1869.870064	5609.610193
CH4	2.3	0.002254902	AP-42	0.02254902	0.541176471	0.216470588	79.01176471	0.035839176	1.003496935	3.010490804
N2O (low-Nox burner)	0.64	0.000627451	AP-42	0.00627451	0.150588235	0.060235294	21.98588235	0.00997264	2.642749691	7.928249073
									1873.516311	**5620.548933**