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CEQA GREENHOUSE GAS EMISSIONS FINAL TECHNICAL REPORT

AMENDMENT TO AIRPORT MASTER PLAN
MINETA SAN JOSE INTERNATIONAL AIRPORT
SAN JOSE, CALIFORNIA

RAMBOLL

CONTENTS

		Page
1.	**INTRODUCTION**	**1**
1.1	Existing Conditions	1
1.2	Proposed Project	2
1.3	Project Design Features	3
1.4	Mitigation Measures	4
2.	**GHG SCIENTIFIC BACKGROUND AND REGULATORY SETTING**	**6**
2.1	Scientific Background	6
2.2	Potential Effects of Human Activity on Global Climate Change	7
2.3	Potential Effects of Climate Change on State of California	9
2.3.1	Air Quality	9
2.3.2	Water Supply	10
2.3.3	Hydrology	11
2.3.4	Agriculture	11
2.3.5	Ecosystems and Wildlife	11
2.4	Regulatory Setting	11
2.4.1	International	11
2.4.2	Federal	14
2.4.3	Multi-State Area	21
2.4.4	State	21
2.4.5	Regional	42
2.4.6	Local	42
3.	**GHG EMISSIONS METHODOLOGY AND INVENTORY**	**44**
3.1	Scenarios Evaluated	44
3.1.1	Construction Scenarios Evaluated	44
3.1.2	Operational Scenarios Evaluated	44
3.2	Units of Measurement	44
3.3	Indirect GHG Emissions from Electricity Use	45
3.4	Construction Emissions	46
3.4.1	California Emissions Estimator Model	46
3.4.2	Airport Construction Emissions Inventory Tool	47
3.4.3	Construction Emissions Inventory Summary	47
3.5	Operational Emissions	47
3.5.1	Aviation Environmental Design Tool	48
3.5.2	Aircraft	48
3.5.3	Auxiliary Power Units	49
3.5.4	Ground Support Equipment	49
3.5.5	Mobile Sources	49
3.5.6	Stationary Sources	50
3.5.7	Electricity	51
3.5.8	Water Supply, Treatment and Distribution	51
3.5.9	Solid Waste	51
3.5.10	Operational Emissions from Hotel Land Use	52
3.5.11	Operational Emissions Inventory Summary	52
4.	**SIGNIFICANCE THRESHOLDS**	**53**

5.	**INVENTORY IN CONTEXT**	**55**
5.1	Project Emissions Inventory	55
5.2	Consistency Analysis	56
5.2.1	State Reduction Strategies	56
5.2.2	Plan Bay Area 2040	56
5.2.3	Climate Smart San Jose	58
5.2.4	Envision San Jose 2040	58
5.2.5	Statewide Emissions Reduction Targets	58
5.2.6	Impact Determination	61
5.3	Alternatives	61

TABLES

Table 1.3-1: Completed and Ongoing Emissions Reduction Measures at the Airport
Table 3.1-1: Landside Construction Project Description
Table 3.1-2: Airside Construction Project Description
Table 3.1-3: Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Table 3.1-4: Activity Levels for Baseline, Project, and No Project Scenarios
Table 3.3.1: PG&E GHG Emission Factors Associated with Renewable Portfolio Standard
Table 3.4-1: GHG Emissions Associated with Landside Construction Projects
Table 3.4-2: GHG Emissions Associated with Airside Construction Projects
Table 3.4-3: Total GHG Emissions Associated with Construction Projects
Table 3.4-4: GHG Emissions Associated with Construction Projects under Existing Approved Master Plan
Table 3.5-1: AEDT Aircraft Classification and Engine Assignment
Table 3.5-2a: Baseline Aircraft Operations by Stage Length Modeled in AEDT
Table 3.5-2b: Project Aircraft Operations by Stage Length Modeled in AEDT
Table 3.5-3: Operational GHG Emissions Associated with Aircraft
Table 3.5-4: Operational GHG Emissions Associated with GSE
Table 3.5-5: Operational Mobile Trip Generation
Table 3.5-6: Operational Mobile Fleet Mix
Table 3.5-7: Operational Mobile Emission Factors
Table 3.5-8: Operational GHG Emissions Associated with Traffic
Table 3.5-9: Baseline Operational GHG Emissions Associated with Airport Shuttles
Table 3.5-10: Project Operational GHG Emissions Associated with Airport Shuttles
Table 3.5-11: Operational GHG Emissions Associated with SJC-Owned Airside Equipment
Table 3.5-12: Operational GHG Emissions Associated with Boilers
Table 3.5-13: Operational GHG Emissions Associated with Miscellaneous Natural Gas Combustion
Table 3.5-14: Operational GHG Emissions Associated with Emergency Generator
Table 3.5-15: Utility Demand per Million Annual Passengers (MAP) (2018)
Table 3.5-16: Utility Demand
Table 3.5-17: Operational GHG Emissions Associated with Electricity
Table 3.5-18: Operational GHG Emissions Associated with Water
Table 3.5-19: Operational GHG Emissions Associated with Solid Waste
Table 3.5-20: Operational GHG Emissions Associated with Hotel
Table 3.5-21 Summary of Baseline Emissions Inventory
Table 3.5-22: Summary of Project Emissions Inventory

Table 5.1-1: Project GHG Emissions: Percentage Contribution to Existing International, National, State, and County Inventories
Table 5.2-1: Consistency with Applicable State Greenhouse Gas Reduction Strategies
Table 5.2-2: Consistency with Applicable Plan Bay Area 2040 Actions and Strategies
Table 5.2-3: Consistency with Applicable Climate Smart San Jose Measures
Table 5.2-4: Consistency with Applicable Environ San Jose 2040 Measures

FIGURES

Figure 1: Airport Location
Figure 2: Baseline (2018) and Future Year (2037) Project Emissions Inventories
Figure 3: Proposed Project Incremental (2037) GHG Emissions by Source

APPENDICES

Appendix A: CalEEMod® and ACEIT Outputs for Construction Emissions Calculations
Appendix B: Modeled GHG Emissions by Aircraft Types, 2018 and 2037

ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
AB	Assembly Bill
ACC	Advanced Clean Cars
ACCRI	Aviation Climate Change Research Initiative
ACEIT	Airport Construction Emissions Inventory Tool
ACRP	Airport Cooperative Research Program
AEDT	Aviation Environmental Design Tool
APU	auxiliary power unit
ARB	Air Resources Board
ARRA	American Recovery and Reinvestment Act
BAAQMD	Bay Area Air Quality Management District
BAU	business-as-usual
CAAFI	Commercial Aviation Alternative Fuels Initiative
CalEEMod®	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CAT	Climate Action Team
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorinated fluorocarbons
CFR	Code of Federal Regulations
CH_4	methane
CLEEN	Continuous Lower Energy, Emissions, and Noise
CNRA	California Natural Resources Agency
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPUC	California Public Utilities Commission
DOE	Department of Energy
DOT	Department of Transportation
EDMS	Emissions Dispersion and Modeling System
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtor model
FAA	Federal Aviation Administration
GHG	greenhouse gas
GSE	ground support equipment

ACRONYMS AND ABBREVIATIONS *(CONTINUED)*

GWP	global warming potential
HFCs	hydrofluorocarbons
ICAO	International Civil Aviation Organization
IPCC	Intergovernmental Panel on Climate Change
lb	pound
LCFS	Low Carbon Fuel Standard
LGO	Local Government Operations Protocol
LTO	landing takeoff counts
MAP	million annual passengers
mpg	miles per gallons
MPOs	Metropolitan Planning Organizations
MRR	Mandatory Reporting Rule
MSW	municipal solid waste
MT	metric tonnes
MTC	Metropolitan Transportation Commission
MWh	megawatt-hour
N_2O	nitrogen dioxide
NCDC	National Clean Diesel Campaign
NHTSA	National Highway Traffic Safety Administration
NO_x	oxides of nitrogen
OFFROAD	Emissions Inventory Program model
OPC	Ocean Protection Council
OPR	Office of Planning and Research
PG&E	Pacific Gas & Electric
PHEVs	plug-in hybrid electric vehicles
ppm	parts per million
PUP	Power/Utility Protocol
RFS	Renewable Fuel Standard
RPS	Renewables Portfolio Standard
RTAC	Regional Targets Advisory Committee
RTPs	regional transportation plans
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SJC	(Mineta) San Jose International Airport
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USEPA	United States Environmental Protection Agency

ACRONYMS AND ABBREVIATIONS *(CONTINUED)*

VALE	Voluntary Airport Low Emissions Program
VMT	vehicle miles traveled
WCI	Western Regional Climate Action Initiative
ZEVs	zero-emission vehicles
ZNE	zero net energy

1. INTRODUCTION

This technical report has been prepared to address the potential environmental impacts associated with the proposed Amendment to the Norman Y. Mineta San Jose International Airport Master Plan[1] (the Proposed Project). In conformance with the California Environmental Quality Act (CEQA), this analysis identifies and assesses the potential impacts that would result from the Proposed Project's emission of greenhouse gases (GHGs).

The City of San Jose, as the proprietor of the Norman Y. Mineta San Jose International Airport (the Airport or SJC), is the project proponent and the Lead Agency. This analysis evaluates the potential GHG-related impacts of the Proposed Project, which would construct improvements to SJC's airside (e.g., runway and taxiway improvements, general aviation facilities) and landside (e.g., new parking garage, Terminal B expansion, new hotel) facilities; and accommodate the 2037 forecasted activity levels for air passenger, air cargo, and general aviation services.

In addition to the Proposed Project, this technical report also evaluates Baseline/Existing emissions for year 2018, and two No Project scenarios. These scenarios are described in more detail in **Sections 1.2 and 3.1** of this report.

This technical report describes the scope and methodology for evaluation of GHG emissions from construction and operational sources. The potential impacts of the Proposed Project are determined based on the standards of significance identified in section 15064.4 and Appendix G of the State CEQA Guidelines.[2]

1.1 Existing Conditions

The Airport is one of three primary airports that serve the San Francisco Bay Area of Northern California. The Airport is located on an approximately 1,000-acre site in Santa Clara County at the southernly end of San Francisco Bay, approximately two miles north of downtown San Jose. The Airport is generally bounded by U.S. 101 to the north, the Guadalupe River and State Route 87 to the east, Interstate 880 to the south, and Coleman Avenue and De la Cruz Boulevard to the west.

The Airport primarily serves Santa Clara, Alameda, Santa Cruz, Monterey, and San Benito counties, and is the primary airport serving Silicon Valley. The Airport accommodated 14.3 million passengers in 2018, which was 17 percent of the Bay Area's total air passenger volume in that calendar year.

The Airport has two passenger terminals, Terminal A with 16 gates and Terminal B with 14 gates. There are two 11,000 feet-long runways at the Airport, 12R/30L and 12L/30R. A third runway, 11/29 with a length of 4,600 feet, is presently used as a taxiway; when operated as a runway, it was used by small general aviation aircraft. The Airport serves most major commercial airlines with statewide, national, and international destinations, as well as air cargo airlines. The Airport also serves 137 based general aviation aircraft, 36% of which are corporate jets.

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[1] City of San Jose Airport Department. 2018. Airport Master Plan for Norman Y. Mineta San Jose International Airport, As Amended Through August 2018. Available at: https://www.flysanjose.com/sites/default/files/improvement/MasterPlan-Update2018.pdf. Accessed: April 2019.

[2] CNRA. 2018. Final Adopted Text of the 2018 Amendments and Additions to the State CEQA Guidelines. Available at: http://resources.ca.gov/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf. Accessed: April 2019.

The vicinity of the Airport and the general San Jose area is predominantly urban in character. A highway and local street system surround the Airport site. The Airport vicinity includes industrial, commercial, and residential land uses, as well as certain special purpose noise sensitive uses, such as churches and schools. A map showing the Airport is provided in **Figure 1**.

The existing/approved Airport Master Plan, as amended through 2018, consists of airside and landside facilities improvements to accommodate the 2027 forecasted demand for air passenger, air cargo, and general aviation services. Many of these capital improvement projects have been completed. The remaining (i.e., unbuilt/incomplete) Master Plan capital projects include several taxiway upgrades/extensions, new air cargo facilities on the east side of the Airport, construction of the South Concourse of Terminal B, upgrades and expansion of various support facilities (e.g., maintenance, flight kitchen), and the buildout of general aviation facilities on the west side of the Airport.

1.2 Proposed Project

As a result of the 2017 Runway Incursion Mitigation/Design Standards Analysis Study,[3] the City of San Jose is proposing to amend the approved Airport Master Plan as follows:

- Shift the planning horizon year from 2027 to 2037.
- Modify future facilities requirements at the Airport to reflect updated demand forecasts.
- Modify certain components of the airfield to reduce the potential for runway incursions.

The implementation of these amendments to the approved Airport Master Plan constitute "the Proposed Project," with full build-out anticipated in year 2037.

The Proposed Project would construct improvements to SJC's airfield, terminals, parking garages, air cargo facilities, and general aviation and aviation support facilities. These capital projects are known as the Master Plan Projects. Construction would take place from 2019 through 2037. Proposed Project construction emissions are quantified in **Section 3.4** and evaluated for significance in **Section 5** of this technical report.

To analyze the GHG impacts from operation of the Proposed Project, this technical report evaluates operational emissions in the full build-out year of 2037. This operational scenario assumes completed construction of all Master Plan Projects and the accommodation of forecasted aviation demand for year 2037. Forecasted aviation demand includes forecasted activity levels for air passenger, air cargo, and general aviation services. Proposed Project operational emissions are quantified in **Section 3.5** and evaluated for significance in **Section 5** of this technical report.

In addition to the Proposed Project, two No Project scenarios for year 2037 are evaluated. The No Project/Buildout under Existing Approved Master Plan scenario assumes only those facilities (including those unbuilt/incomplete as of 2018) approved in the existing Master Plan have been constructed. The No Project/No New Facilities scenario assumes no new facilities have been constructed (even where otherwise allowed by the approved Airport Master Plan), and only evaluates emissions from facilities existing in 2018. Both of the No Project

[3] Typically referred to as the "RIM Study," this study was completed in 2017 as part of a Federal Aviation Administration (FAA) grant-funded program to reduce the risk of runway incursions, defined as the unauthorized presence of an aircraft, vehicle, or person on a surface designated for the landing and take-off of aircraft. The RIM Study provided aviation demand forecasts for year 2037 and recommended airfield configuration modifications.

scenarios assume forecasted aviation demand for year 2037. Operational emissions for both No Project scenarios are quantified in **Section 3.5** and evaluated for significance in **Section 5** of this technical report.

1.3 Project Design Features

The SJC Airport has on-going commitments to reduce its GHG emissions. Following are the measures that are already implemented or will be implemented at the Airport:

PDF-GHG-1 (LEED Design). Project T-13 calls, in relevant part, for the expansion of Terminal B's South Concourse. The expansion shall be designed to achieve LEED Silver certification or equivalent. Additionally, Project T-16 calls, in relevant part, for the construction of a 330-room hotel at the Airport. The hotel shall be designed to achieve LEED Silver certification or equivalent.[4]

PDF-GHG-2 (Electrified Airport Shuttle Fleet). On May 3, 2019, San Jose commissioned the San Jose Airports 10 battery-electric shuttle buses, which previously ran on compressed natural gas fuel. This is 15 years ahead of CARB's Proposed Zero-Emission Airport Shuttle Regulation, which requires airport shuttle fleets to be 100% zero-emission vehicles (battery electric or fuel cell) by 2035.[5]

PDF-GHG-3 (Airside Operations). Beginning in 1998, all airlines are encouraged to perform single or reduced engine taxiing in order to reduce emissions produced by the aircraft.

PDF-GHG-4 (Alternate-Fuel Maintenance Fleet). Since 2000, the Airport has adopted a policy to purchase only alternate-fuel vehicles for airport operations and maintenance fleet. Currently, 25% of the fleet is clean energy-powered as opposed to conventionally-powered vehicles.

PDF-GHG-5 (Construction Pollution Abatement). An ongoing effort of the Airport has been the implementation of a Construction Project Pollutant Emissions Abatement Program. This program requires measures to minimize emissions from vehicles and equipment to be included in all construction plans.

PDF-GHG-6 (Energy-efficient Lighting). All lightbulbs in Airport facilities and buildings will be energy-efficient, reducing emissions associated with the generation of electricity.

PDF-GHG-7 (Green Cleaning). An ongoing policy of the Airport is to use green-seal-certified cleaning products which improves indoor air quality and reduces emissions.

PDF-GHG-8 (Clean Energy). Initiated in Fall 2018, the Airport adheres to the *San Jose Clean Energy* Program which designates that electricity purchased for Airport facilities will be 45% renewables and 80% carbon free.

PDF-GHG-9 (LEED Facilities). Construction of any building greater than 10,000 ft^2 is to achieve LEED standards with green features such as natural lighting, occupancy sensors for lighting, a programmable lighting control system, high efficiency programmable "smart" heating and cooling system, energy-conserving windows, a high-efficiency ventilation

[4] City of San Jose. 2019. Green Buildings. Available at: http://www.sanjoseca.gov/index.aspx?NID=1517. Accessed: June 2019.

[5] ARB. 2018. Proposed Regulation Order for the Proposed Zero-Emission Airport Shuttle Regulation. Available at: https://www.arb.ca.gov/regact/2019/asb/appa.pdf?_ga=2.255035912.1469842448.1555030954-893091953.1554304459. Accessed: April 2019.

system, recycled construction materials, and water conservation measures that result in 75% less water used than in a conventional building.[6]

PDF-GHG-10 (Employee Transportation). Since 1998, the Airport has provided free bus/rail passes to employees which allows unlimited use of VTA's bus and light rail transit systems. By encouraging the 3,500+ of the airport to use transit systems reduces emissions of commuting and traffic in the area.

PDF-GHG-11 (Ground Transportation). The Airport provides a free shuttle bus service connecting to the Metro LRT Station and Santa Clara CalTrain Station, operating every 10-15 minutes to promote public transportation as a means of travel.

PDF-GHG-12 (Cell Phone Lot). A second cell phone waiting lot was completed in 2018 to encourage drivers picking up passengers to wait in the designated lot rather than circle the Airport.

PDF-GHG-13 (Electric Charging Stations). Construction of the initial station completed in 2001, progressively developing additional public electric vehicle stations to facility the use of EVs by drivers.

PDF-GHG-14 (Low- or Zero- Emission Taxis). Facilitated by a grant from the Airport and VTA, there is a requirement that at least 25% of all taxi/van trips to or from the Airport are to be by low- or zero-emission vehicles. Currently, 36% of the taxi fleet is alternate or clean-fuel powered vehicles.

PDF-GHG-15 (Commercial Vehicles). Implemented in the 1990s, a "Commercial Vehicle Trip Fee" which charges these types of vehicles for each trip they take to the Airport. This discourages unnecessary vehicles trips and endorses increased efficiency of each trip taken by the company.

PDF-GHG-16 (Taxi Dispatch). The Airport created a taxi dispatch system that requires taxis to park in designated areas until they are dispatched, which reduces engine idling and the emissions associated.

PDF-GHG-17 (Public Transport Education). Through the Airport's website and in the terminals, information on the public transit systems and information encourages usage of the transit systems which lowers emissions created by travelers.

See **Table 1.3-1** for details related completed and on-going emissions reduction measures at the Airport.

1.4 Mitigation Measures

In addition to the Project Design Features described above, SJC plans to incorporate additional Mitigation Measures to further reduce Airport's emissions:

MM-GHG-1 (Electric Vehicle Charging Stations). Project T-4 calls, in relevant part, for the construction of a short-term parking garage with up to 5,000 spaces. Similarly, Project T-8 calls, in relevant part, for the construction of a long-term parking garage with up to 9,000 spaces. A minimum of 10 percent of the total number of spaces provided in the proposed parking garages (Projects T-4 and T-8) will be designed and constructed for

[6] City of San Jose. 2019. Green Buildings. Available at: http://www.sanjoseca.gov/index.aspx?NID=1517. Accessed: June 2019.

electric vehicle charging capability. Installation of electric vehicle chargers in these spaces will occur over time as demand warrants and funding is available.

MM-GHG-2 (Participation in Airport Carbon Accreditation Program). The City of San Jose plans to participate in the Airports Council International's voluntary Airport Carbon Accreditation program and seek phased certification over build-out of the Project.

2. GHG SCIENTIFIC BACKGROUND AND REGULATORY SETTING

2.1 Scientific Background

There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs.

GHGs allow the sun's radiation to penetrate the atmosphere and warm the Earth's surface, but do not let the infrared radiation emitted from the Earth escape back into outer space. As a result, global temperatures are predicted to increase over the century. In particular, if climate change remains unabated, surface temperatures in California are expected to increase anywhere from 4.1 to 8.6 degrees Fahrenheit by the end of the century. Not only would higher temperatures directly affect the health of individuals through greater risk of dehydration, heat stroke, and respiratory distress, the higher temperatures may increase ozone formation, thereby worsening air quality. Rising temperatures could also reduce the snowpack, which would increase the risk of water shortages. Higher temperatures along with reduced water supplies could reduce the quantity and quality of agricultural products. In addition, there could be an increase in wildfires and a shift in distribution of natural vegetation throughout the State. Global warming could also increase sea levels and coastal storms resulting in greater risk of flooding.

Emissions of carbon dioxide (CO_2) are the leading cause of global warming, with other pollutants such as methane (CH_4), nitrogen dioxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride also contributing. The magnitude of each GHG's impact on global warming differs because each GHG has a different global warming potential (GWP), which indicates, on a pound for pound basis, how much the pollutant will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. CH_4 and N_2O, for example, are substantially more potent than CO_2, with GWPs of 21 and 310, respectively.[7]

The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its GWP, and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or metric tons of CO_2 equivalents (CO_2e). CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere.

Globally, CO_2 concentrations, which ranged from 265 parts per million (ppm) to 280 ppm over the last 10,000 years, only began rising in the last 200 years to current levels of 397 ppm, a 42 percent increase.

In 2017, the United States emitted about 6.5 billion metric tons (gross emissions) of CO_2e. This represents a 1.3 percent increase since 1990, and a 13.0 percent reduction below peak levels in 2005. Of the six economic sectors - residential, commercial, industrial, transportation, electric power, and agriculture - transportation accounted for the highest fraction of GHG emissions in 2017 (approximately 29 percent). Of the transportation-related

[7] These GWPs are from the IPCC Second Assessment Report and used in CalEEMod. The GWPs in the IPCC Fourth Assessment Report have been updated to 298 for N_2O and 25 for CH_4.

emissions, 6.9 percent were from commercial aircraft and 2.4 percent from other aircraft. The majority of transportation emissions were from passenger cars (41.2 percent); freight trucks (23.3 percent), and light-duty trucks (17.5 percent).[8]

According to the 2016 U.S. Climate Action Report,[9] from 2005 to 2013, transportation emissions dropped by 9 percent due, in part, to increased fuel efficiency across the U.S. vehicle fleet and efficiency in the domestic aviation system. However, from 1990 to 2017 as a whole, transportation emissions rose by 17 percent, principally because of increased demand for travel as a result of a confluence of factors including population growth, economic growth, urban sprawl, and periods of low fuel prices.[10]

In 2016, California emitted approximately 429 million metric tons of CO_2e, or about 7 percent of the U.S. emissions. Of these emissions, approximately 4.4 million metric tons (or 1 percent of the statewide emissions) were attributed to intrastate aviation.[11] California's percentage contribution to overall U.S. emissions is due primarily to the sheer size of California compared to other states, as California has among the lowest per capita GHG emission rates in the country, due to the success of its energy efficiency and renewable energy programs and other commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise. Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The largest contributor to California's 2017 GHG emissions inventory was the transportation sector at 39 percent, followed by industrial sources at 21 percent, electricity generation (both in-state and out-of-state) at 16 percent, and commercial and residential sources at 9 percent. Agriculture, high GWP sources (including the release of ozone depleting substances, losses from the electricity transmission and distribution system, and gases from semiconductor manufacturing processes), and the recycling and waste sectors made up the remainder of the inventory.[12]

It has not been demonstrated that new GHG emissions caused by a single project can affect global climate change, or that a project's net increase in GHG emissions, if any, when coupled with other activities in the region, would be cumulatively considerable.

2.2 Potential Effects of Human Activity on Global Climate Change

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is

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[8] USEPA. 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available at: https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf. Accessed: April 2019.

[9] United States. 2016. 2016 Climate Action Report: Second Biennial Report of the United States of America Under the United Nations Framework Convention on Climate Change.

[10] USEPA. 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available at: https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf. Accessed: April 2019.

[11] ARB. 2018. California Greenhouse Gas Inventory for 2000-2016 – by Category as Defined in the 2008 Scoping Plan. Available at: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf. Accessed: April 2019.

[12] Ibid.

projected, and there are identifiable signs that global warming is taking place, including substantial loss of ice in the Arctic.[13]

However, the understanding of the role that GHG emissions, particulate matter, and aerosols play on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the Intergovernmental Panel on Climate Change (IPCC), namely "Climate Change 2001, The Scientific Basis".[14,15]

Acknowledging uncertainties regarding the rate at which anthropogenic GHG emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devised a set of six emission scenarios which utilize various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century.[16] These emission scenarios are paired with various climate sensitivity models to attempt to account for the range of uncertainties which affect climate change projections. The wide range of temperature, precipitation, and similar projections yielded by these scenarios and models reveal the magnitude of uncertainty presently limiting climate scientists' ability to project long-range climate change (as previously discussed).

The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects, according to the IPCC.[17]

- Snow cover is projected to contract, with permafrost areas sustaining thawing;
- Sea ice is projected to shrink in both the Arctic and Antarctic;
- Hot extremes, heat waves, and heavy precipitation events are likely to increase in frequency;
- Future tropical cyclones (typhoons and hurricanes) will likely become more intense;
- Non-tropical storm tracks are projected to move poleward, with consequent changes in wind, precipitation, and temperature patterns. Increases in the amount of precipitation are very likely in high-latitudes, while decreases are likely in most subtropical regions; and
- Warming is expected to be greatest over land and at most high northern latitudes, and least over the Southern Ocean and parts of the North Atlantic Ocean.

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[13] International Panel on Climate Change (IPCC). 2007. Climate Change 2007: Working Group I: The Physical Science Basis. Available at: https://www.ipcc.ch/report/ar4/wg1/. Accessed: April 2019.

[14] The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation.

[15] IPCC. 2001. Third Assessment Report, Climate Change 2001: The Scientific Basis. Available at: https://www.ipcc.ch/report/ar3/wg1/. Accessed: April 2019.

[16] Ibid.

[17] Ibid.

Potential secondary effects from global warming include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

2.3 Potential Effects of Climate Change on State of California

According to the CARB, some of the potential impacts in California of global warming may include loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[18] The California Climate Change Center (CCCC) has released four assessment reports on climate change in California, the most recent in 2019.[19] Per California's Third Climate Change Assessment, by 2050, the statewide average annual maximum daily temperature is projected to warm by approximately 5.6 to 8.8°F above 2000 averages.

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change.

2.3.1 Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. Studies have been conducted to evaluate the potential impacts of climate change on wildfire frequency based on lower and higher emissions scenarios. Per California's Fourth Climate Change Assessment, under a higher emissions scenario, the average area burned statewide could increase by 77 percent above historic levels by 2100.[20] Per California's Third Climate Change Assessment, the estimated burned area is projected to increase between 57 and 169 percent, depending on location. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.[21] It is estimated that over the next decade, higher temperatures could increase the demand for electricity by 1 Gigawatt (GW) during summer months, which would require purchase of costly peak power from external sources or the construction of one new large power plant in California.[22] During periods of extreme heat, efficiency of electricity generation is reduced at natural gas plants; hydropower generation is reduced; and increased losses occur at substations; all while electricity demands are increased. These factors are projected to result in the need for more than 17 GW, or 38 percent of additional

[18] California Air Resources Board (CARB), 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1.

[19] California Climate Change Center (CCCC), 2019. California's Fourth Climate Change Assessment. Available at: http://www.climateassessment.ca.gov/. Accessed: July, 2019.

[20] CCCC, 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed: July, 2019 .

[21] California Climate Change Center (CCCC), 2006. Our Changing Climate: Assessing the Risks to California, CEC500-2006-077, Sacramento, CA. July. Available at: http://meteora.ucsd.edu/cap/pdffiles/CA_climate_Scenarios.pdf. Accessed: July, 2019.

[22] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July, 2012.

capacity, needed by 2100. Additionally, transmission lines lose 7 to 8 percent of transmitting capacity in higher temperatures, which also results in a need for increased power generation.[23]

2.3.2 Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions suggest decreased reservoir inflows and storage, and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions project increased reservoir inflows and storage, and increased river flows.[24]

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that, "[c]limate change will likely have a significant effect on California's future water resources … [and] future water demand," it also reports that, "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood,"[25] DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."[26] Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[27]

California's Third Climate Change Assessment outlines the state's urgent water management challenges brought on as a result of climate change. These include increasing demand from a growing population as temperatures rise, earlier snowmelt and runoff, and faster-than-historical sea-level rise threatening aging coastal water infrastructure and levees in the Sacramento-San Joaquin Delta.[28] Additionally, they predict that competition between urban and agriculture water users and environmental needs will increase due to effects on water supply and stream flows. The Fourth Climate Change Assessment concludes that by 2100, water supply from snowpack is projected to decline by two-thirds, and that by 2050, California's agricultural production could face climate-related water shortages of up to 16 percent in certain regions.[29]

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[23] Ibid.

[24] Brekke, L.D., et al, 2004. ―Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California.‖ Journal of the American Water Resources Association. 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA.

[25] California Department of Water Resources (DWR), 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July.

[26] California Department of Water Resources (DWR), 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July.

[27] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

[28] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July, 2012.

[29] CCCC, 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed: July, 2019.

2.3.3 Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes -- expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. Assuming the rate of sea level rise continues to follow global trends, sea level along California's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century.[30] Based on these current projections, the current 100-year storm could occur once every year. California's Fourth Climate Assessment projects that without implementation of protective measures, major airports will be susceptible to major flooding from a combination of sea-level rise and storm surge by years 2040 to 2080 and that the miles of highways susceptible to coastal flooding from a 100-year storm will triple from current levels by 2100. [31]

2.3.4 Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The CCCC notes that higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[32]

2.3.5 Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.[33] The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

2.4 Regulatory Setting

2.4.1 International

2.4.1.1 Kyoto Protocol and Paris Agreement

The Kyoto Protocol, adopted on December 11, 1997, is an international agreement that is linked to the United Nations Framework Convention on Climate Change (UNFCCC). It sets targets and timetables for 36 industrialized countries and the European community to reduce

[30] Ibid.

[31] CCCC, 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed: July, 2019.

[32] California Climate Change Center (CCCC), 2006, op. cit.

[33] Parmesan, C. and H. Galbraith, Observed Impacts of Global Climate Change in the U.S., Arlington, VA: Pew Center on Global Climate Change, November 2004.

GHG emissions. The targets amount to an average 5% reduction against 1990 levels over the 5-year period from 2008 to 2012.

Post-protocol negotiations have continued in an attempt to address the time period after the first "commitment period" of the Kyoto Protocol concluded at the end of 2012. In Durban, South Africa, in 2011, parties to the protocol agreed in principle to negotiate a new comprehensive and legally binding climate agreement by 2015 and to enter it into force for all parties from 2020. In 2012, the Doha Amendment to the Kyoto Protocol was adopted for a second commitment period from 2013 to 2020. However, the Doha Amendment has not yet entered into force.

Emissions from international aviation are specifically excluded from the Kyoto Protocol, which instead instructs countries to mitigate these emissions through work with the International Civil Aviation Organization (ICAO), discussed below.[34]

The Paris Agreement, developed at COP21 in December 2015, is an international agreement among parties in the UNFCCC. The central aim of the Paris Agreement is to maintain the global temperature rise in the 21st century below 2 degrees Celsius above pre-industrial levels. Furthermore, the Paris Agreement provides for increased transparency, requires all parties to maintain and communicate "nationally determined contributions" that they intend to achieve, and aims to erect financial and technology frameworks for reaching the climate goals it puts forth. The agreement addresses a range of areas necessary to combat climate change, including a long-term temperature goal, global peaking of GHG emissions, mitigation, and a "global stocktake" every five years. As of 2019, 184 countries and the European Union have ratified the Paris Agreement, including China, the United States, and India, the three countries with the largest greenhouse gas emissions.[35] However in 2017, President Trump announced that the U.S. would withdraw from the Paris Agreement.[36] Under the agreement, the earliest possible effective withdrawal date is November 2019. Following this announcement, several U.S. states (including California) formed the United States Climate Alliance to continue to advance the goals of the Paris Agreement at the state level.[37]

2.4.1.2 International Civil Aviation Organization

The ICAO [38] was created in 1944 to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. The ICAO serves as the forum for cooperation in all fields of civil aviation among its 193 Member States.

A comprehensive assessment concerning aviation's contribution to global atmospheric problems is contained in the *Special Report on Aviation and the Global Atmosphere.* This Special Report was prepared at ICAO's request by the IPCC in collaboration with the

[34] UNFCCC. 2019. Emissions from fuels used for international aviation and maritime transport. Available at: https://unfccc.int/topics/mitigation/workstreams/emissions-from-international-transport-bunker-fuels. Accessed: April 2019.

[35] UNFCCC. 2019. Paris Agreement – Status of Ratification. Available at: https://unfccc.int/process/the-paris-agreement/status-of-ratification. Accessed: April 2019.

[36] U.S. Whitehouse. 2017. Statement by President Trump on the Paris Climate Accord. Available at: https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/. Accessed: April 2019.

[37] USCA. 2019. United States Climate Alliance. Available at: https://www.usclimatealliance.org/. Accessed: April 2019.

[38] ICAO. 2019. About ICAO. Available at: https://www.icao.int/about-icao/Pages/default.aspx. Accessed: April 2019.

Scientific Assessment Panel to the Montreal Protocol on Substances that Deplete the Ozone Layer and was published in 1999. The Special Report recognized that the effects of some types of aircraft emissions are well understood, revealed that the effects of others are not, and identified a number of key areas of scientific uncertainty that limit the ability to project aviation impacts on climate and ozone. ICAO requested that the IPCC include an update of the main findings of the Special Report in its Fourth Assessment Report (IPCC AR4) published in 2007.

In 2007, ICAO continued to study policy options to limit or reduce the environmental impact of aircraft engine emissions and to develop concrete proposals and provide advice as soon as possible to the Conference of the Parties to the UNFCCC. It called for special emphasis to be placed on the use of technical solutions while continuing consideration of market-based measures, and taking into account potential implications for developing as well as developed countries.

A global agreement reached by the 37th Session of the ICAO Assembly in October 2010 established ICAO's objective for aviation's role in the management of climate change. It provides a roadmap for action through 2050 for the 191 Member States and invites them to voluntarily submit their action plans to reduce CO_2 emissions to ICAO by June 2012. The action plans are intended to allow Member States to showcase the specific voluntary measures they intend to take in order to improve efficiency and thereby contribute to the global environmental aspirational goals established by the Assembly.[39]

ICAO has taken immediate steps to help Member States prepare their action plans by developing guidance material and a framework for collecting, analyzing, and reporting aviation CO_2 emissions. The ICAO has also prepared a web-interface to serve as an electronic template for the submission of action plans. This web tool provides material to assist in the preparation of action plans and dissemination of information on the various measures being undertaken by Member States. In addition, ICAO held regional hands-on training workshops from May to July 2011 in its Regional Offices. These workshops allowed Member States to obtain maximum benefit from the guidance material and provide opportunities for them to help refine their material. The workshops trained participants in the use of the web interface. As of 2019, 111 Member States have made their action plans publicly available, including the United States.[40]

In October 2016, a global agreement reached by the 39th Session of the ICAO Assembly established the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This agreement set an international aviation GHG emissions reduction target of 50% by 2050, relative to 2005 levels, with an overall goal of carbon-neutral growth from 2020 onwards.[41] Under CORSIA, and subject to phased implementation, airlines will be required to buy carbon offsets to compensate for their growth in CO_2 emissions associated with international air travel. Beginning on January 1, 2019, CORSIA also requires that all airlines operating international flights monitor and report fuel consumption and emissions.

[39] ICAO. 2019. Climate Change: Action Plan. Available at: https://www.icao.int/environmental-protection/Pages/action-plan.aspx. Accessed: April 2019.

[40] ICAO. 2019. Climate Change: State Action Plans and Assistance. Available at: https://www.icao.int/environmental-protection/pages/climatechange_actionplan.aspx. Accessed: April 2019.

[41] ICAO. 2019. Carbon Offsetting and Reduction Scheme for International Aviation. Available at: https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx. Accessed: April 2019.

2.4.2 Federal

2.4.2.1 FAA Climate Action Report

According to the 2014 Climate Action Report, the Federal Aviation Administration (FAA) is pursuing a comprehensive approach to reduce GHG emissions from commercial aviation through aircraft and engine technology development, operational improvements, development and deployment of sustainable alternative jet fuels, and additional policies and measures.[42] FAA's Next Generation Air Transportation System Plan, or NextGen, focuses its efforts on increasing efficient aircraft operations and reducing GHG emissions through airspace, operational, and infrastructure improvements. FAA funds diverse programs to improve aviation energy and emissions performance, and coordinates with other agencies as appropriate, including the National Aeronautics and Space Administration. The following are some examples of FAA programs:

- The Continuous Lower Energy, Emissions, and Noise (CLEEN) program is a collaborative partnership between FAA and aviation manufacturers to develop technologies that will reduce emissions and fuel burn, and expedite the integration of these technologies into current aircraft.
- The Aviation Climate Change Research Initiative (ACCRI) is an FAA program that provides guidance to develop mitigation solutions based on state-of-the-art science results. ACCRI results are key to quantifying cost–benefit analyses of various policy options. ACCRI has reduced uncertainties, leading to overall improvement in understanding of the climate impacts of aviation. While ACCRI does not provide mitigation solutions on its own, recently completed ACCRI Phase II results can be used to help identify effective mitigation options.
- The Voluntary Airport Low Emissions Program (VALE) is a grant program that encourages airport sponsors to use Airport Improvement Program funds and Passenger Facility Charges to finance low-emission vehicles, refueling and recharging stations, gate electrification, and other airport air quality improvements. Under FAA's most recent reauthorization, VALE's work is supplemented by new programs that reduce airport emissions. FAA is creating a program where, following an assessment of airport energy requirements, FAA may make capital grants for airports to increase energy efficiency. FAA has also established a pilot program under which certain airports may acquire and operate zero-emission vehicles.

In addition, FAA is a founding member of the Commercial Aviation Alternative Fuels Initiative (CAAFI). CAAFI is a public–private partnership established in 2006 with the objective of advancing alternative jet fuels with equivalent safety/performance (drop-in) and comparable cost, environmental improvement, and security of energy supply for aviation. Work through CAAFI has also expanded internationally. Fuel production capability is beginning to emerge, including a recently announced airline and fuel producer agreement.

2.4.2.2 Aviation Greenhouse Gas Emissions Reduction Plan

The United States is committed to addressing the climate change impacts of commercial aviation and is pursuing a multi-pronged approach to achieve GHG emissions reductions.[43]

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[42] United States of America. 2014 United States Climate Action Report. Available at: https://www.globalchange.gov/browse/reports/us-climate-action-report-2014. Accessed: April 2019.

[43] United States of America. 2012. U.S. Aviation Greenhouse Gas Emissions Reduction Plan (2012) Submitted to the International Civil Aviation Organization, June 2012. Available at:

The Aviation Greenhouse Gas Emissions Reduction Plan,[44,45] which was submitted to ICAO as the U.S. Action Plan, identifies actions and progress toward GHG emission reductions in each of the following areas:

- Aircraft and Engine Technology Improvement: There are multiple technology initiatives dedicated to developing technology with significantly improved fuel burn and lower GHG emissions. These include the FAA CLEEN program described above, the National Aeronautics and Space Administration (NASA) Environmentally Responsible Aviation (ERA) and Advanced Air Transport Technology (AATT) projects, and U.S. Air Force research and testing on vehicle efficiency improvements (e.g., through the Adaptive Engine Technology Development program) that can often transition into development of commercial products that are utilized by the civil fleet.
- Operational Improvements: Implementation of the FAA's NextGen plan will allow for more efficient aircraft operations and reduced GHG emissions through operational improvements. Many foundational and infrastructure elements are expected to be in place in the near-term, providing critical NextGen capabilities or infrastructure upon which future NextGen capabilities will be built.
- Alternative Fuels Development and Deployment: The U.S. is actively supporting and facilitating the development and deployment of sustainable alternative jet fuels with lower life-cycle GHG emissions than conventional petroleum fuel. Thus far, the standard setting organization ASTM International has approved three alternative jet fuels for use in aviation. Research is ongoing to pursue additional approvals and also examine the viability of regional supply chains and chart a path for overcoming barriers to production.
- Policies, Standards, and Measures: The U.S. is pursuing a variety of policies, standards, and measures that will supplement efforts on technology, operations and fuels in order to further reduce aviation emissions. The U.S. is focused on two items, in particular: (1) The development of a meaningful CO_2 standard in ICAO for implementation in the U.S., and (2) working with ICAO on the development of a proposal for a Global Market-Based Measure (GMBM) to serve as a gap filler to address international aviation GHG emissions.
- Scientific Understanding and Modeling/Analysis: The FAA is continually improving its modeling and analysis tools in order to better understand and assess the environmental impacts of aviation.

These measures support the aspirational goal of carbon-neutral growth for U.S. commercial aviation by 2020, using 2005 emissions as a baseline.

2.4.2.3 Supreme Court Ruling in Massachusetts et al. v. Environmental Protection Agency

In Massachusetts et al. v. Environmental Protection Agency, 549 US 497 (2007), the U.S. Supreme Court held that the United States Environmental Protection Agency (USEPA) was authorized by the Clean Air Act to regulate CO_2 emissions from new motor vehicles.[46] The

https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf. Accessed: April 2019.

[44] Ibid.

[45] United States of America. 2015. U.S. Aviation Greenhouse Gas Emissions Reduction Plan (2015) Submitted to the International Civil Aviation Organization, June 2015. Available at: https://crp.trb.org/acrp0267/united-states-aviation-greenhouse-gas-emissions-reduction-plan/. Accessed: April 2019.

[46] Massachusetts, et al. v. Environmental Protection Agency. 2007. Available at: http://www.law.cornell.edu/supct/html/05-1120.ZS.html. Accessed: April 2019.

Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances in which the USEPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On December 7, 2009, the USEPA issued an "endangerment finding" under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution.[47] These findings provide the basis for adopting new national regulations to mandate GHG emission reductions under the federal Clean Air Act.

2.4.2.4 USEPA Rulemaking

On September 22, 2009, the USEPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires annual reporting to the USEPA of GHG emissions from large sources and suppliers of GHGs, including facilities that emit 25,000 metric tons or more a year of GHGs. Based on the applicability criteria listed in the rule (40 CFR Part 98), mandatory reporting is only required for certain large industrial and commercial sources of GHGs. SJC is not required to report GHG emissions at the federal level.

In addition, Section 233 of the Clean Air Act vests the authority to promulgate emission standards for aircraft or aircraft engines only with the USEPA. States and other municipalities are preempted from adopting or enforcing any standard respecting aircraft engine emissions unless such standard is identical to the USEPA's standards.[48] To date, the USEPA has not adopted GHG emission standards for aircraft engines. However, USEPA released a Final rule in 2016 that found that elevated GHG concentrations are due, in part, to certain aircraft engine classes.[49] Further, the Final rule declared that these aircraft engine classes are contributing to GHGs that are harmful to public health and welfare.

However, the USEPA has adopted oxides of nitrogen () emission standards and related provisions for aircraft gas turbine engines with thrusts rated greater than 26.7 kilonewtons that were previously adopted by the ICAO. (These engines are used primarily on commercial passenger and freight aircraft.) Included in the rule are two new tiers of more stringent emission standards for NO_x referred to as Tier 6 standards and Tier 8 standards. The Tier 6 standards became effective for newly-manufactured aircraft engines beginning in 2013.[50] Though these standards are not directly relevant to GHG emissions, these standards can influence and reduce GHG emissions over time as new aircraft engines are phased in. The associated GHG reductions would be directly related to fuel efficiency improvements for aircraft engines.

2.4.2.5 USEPA and NHTSA Joint Rulemaking for Vehicle Standards

In response to the Massachusetts v. EPA ruling discussed above, the Bush Administration issued an Executive Order on May 14, 2007, directing the USEPA, the Department of

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[47] USEPA. 2009. Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Available at: https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean. Accessed: April 2019.

[48] 42 U.S. Code § 7573 – State Standards and Controls.

[49] USEPA. 2016. Federal Register, Vol. 81, No. 157, Finding that Greenhouse Gas Emissions from Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare, Final Rules. Available at: https://www.govinfo.gov/content/pkg/FR-2016-08-15/pdf/2016-18399.pdf

[50] USEPA. 2017. Regulations for Nitrogen Oxide Emissions from Aircraft. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-nitrogen-oxide-emissions-aircraft. Accessed: April 2019.

Transportation (DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008.

On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for passenger cars and light trucks in model years 2011 through 2015. The NHTSA issued a final rule for model year 2011 on March 30, 2009.[51] In addition, on May 7, 2010, the USEPA and the NHTSA issued a final rule regulating fuel efficiency and GHG pollution from motor vehicles for cars and light-duty trucks for model years 2012–2016.[52]

On May 21, 2010, President Obama issued a memorandum to the Secretaries of Transportation and Energy, and the Administrators of the USEPA and the NHTSA calling for the establishment of additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure.[53]

In response to this directive, USEPA and NHTSA issued a Supplemental Notice of Intent announcing plans to propose stringent, coordinated federal GHG and fuel economy standards for model year 2017-2025 light-duty vehicles.[54] The agencies proposed standards projected to achieve 163 grams/mile of CO_2 in model year 2025, on an average industry fleet wide basis, which is equivalent to 54.5 miles per gallon (mph) if this level were achieved solely through fuel efficiency. California announced its support of this national program.[55] The final rule was adopted in October 2012 for model years 2017-2021, and NHTSA expressed its intent to set standards for model years 2022-2025 in a future rulemaking.[56,57]

In August 2017, the USEPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022-2025 remain appropriate. In early 2018, the USEPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022-2025 was

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[51] NHTSA. 2009. Laws & Regulations, CARE - Fuel Economy, Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011, Final Rule. Available at: http://www.nhtsa.gov/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/CAFE_Updated_Final_Rule_MY2011.pdf. Accessed: April 2019.

[52] USEPA. 2010. Light Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Final Rule. Available at: https://www.federalregister.gov/articles/2010/05/07/2010-8159/light-duty-vehicle-greenhouse-gas-emission-standards-and-corporate-average-fuel-economy-standards. Accessed: April 2019.

[53] GPO. 2010. Federal Register, Vol. 75, No. 101, Presidential Documents, Improving Energy Security, American Competitiveness and Job Creation, and Environmental Protection Through a Transformation of Our Nation's Fleet of Cars and Trucks. Available at: http://www.gpo.gov/fdsys/pkg/FR-2010-05-26/html/2010-12757.htm. Accessed: April 2019.

[54] GPO. 2011. Federal Register, Vol. 76, No. 153, Proposed Rules, 2017-2025 Model Year Light-Duty Vehicle GHG Emissions and CAFÉ Standards: Supplemental Notice of Intent. August 9. Available at: http://gpo.gov/fdsys/pkg/FR-2011-08-09/pdf/2011-19905.pdf. Accessed: April 2019.

[55] ARB. 2011. Commitment Letter to National Program, July 28. Available at: https://www.epa.gov/sites/production/files/2016-10/documents/carb-commitment-ltr.pdf. Accessed: April 2019.

[56] NHTSA. 2012. Federal Register, Vol. 77, No. 199, Rules & Regulations, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, effective December 14, 2012. Available at: https://federalregister.gov/a/2012-21972. Accessed: April 2019.

[57] NHTSA. 2012. Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2017-2025, Final Environmental Impact Statement, Available at: http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. Accessed: April 2019.

completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in April 2018, the USEPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks and establish new standards, covering model years 2022-2025. Compared to maintaining the post-2020 standards now in place, the pending proposal would increase U.S. fuel consumption.[58] California and other states have announced their intent to challenge federal actions that would delay or eliminate GHG reductions. Because the pending proposal is still in the rulemaking phase, and because legal challenges to any future adoption of the proposal is likely, the timing and consequences of the pending proposal are speculative at this time.

Finally, in August 2018, NHTSA released a notice of proposed rulemaking that would amend the CAFE standards for model years 2021-2026.[59] The new CAFE standards under this proposed rule would be less stringent, increasing global average temperature by 0.003 ^{o}C over the existing CAFE standards in 2100 and increasing fuel usage by approximately 500,000 barrels per day. These new standards would be referred to as the Safer Affordable Fuel Efficient (SAFE) vehicle standards, if approved.

2.4.2.6 Heavy-duty Engines and Vehicles Fuel Efficiency Standards

In addition to the regulations applicable to cars and light-duty trucks, on August 9, 2011, the USEPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which apply to vehicles from model year 2014-2018.[60] USEPA and NHTSA adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to USEPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 percent to 23 percent over the 2010 baseline year. In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower carbon dioxide emissions by approximately 1.1 billion metric tonnes (MT) and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.[61] (These emissions reductions were not included in the Project emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative [i.e., higher] Project emissions inventory.)

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[58] NHTSA. 2018. Federal Register, Vol. 83, No. 72, Rules & Regulations, Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light Duty Vehicles. Available at: https://www.federalregister.gov/documents/2018/04/13/2018-07364/mid-term-evaluation-of-greenhouse-gas-emissions-standards-for-model-year-2022-2025-light-duty. Accessed: April 2019.

[59] NHTSA. 2018. Federal Register, Vol. 83, No. 165, Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. Available at: https://www.govinfo.gov/content/pkg/FR-2018-08-24/pdf/2018-16820.pdf

[60] USEPA. 2011. Office of Transportation and Air Quality. EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium-and Heavy-Duty Vehicles. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF. Accessed: April 2019.

[61] USEPA and NHTSA, 2016. Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles – Phase 2. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed: April 2019.

2.4.2.7 Additional Federal GHG Rules and Policies

In addition to the rules and regulations developed with respect to stationary and mobile sources, discussed above, various other federal developments have occurred that aim to reduce GHGs from other sources, including land use activities.

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law.[62] Among other key measures, the Act will do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
3. Require approximately 25 percent greater efficiency for light bulbs, by phasing out the incandescent light bulbs between 2012 and 2014; require approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
4. While superseded by NHTSA and USEPA actions described above, EISA also set miles per gallon targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the USEPA published a final rule establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electricity Utility Generating Units (80 FR 64510-64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the USEPA published a final rule establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661-65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units.

Implementation of the Clean Power Plan was stayed by the U.S. Supreme Court pending resolution of several lawsuits. Additionally, in March 2017, President Trump signed an executive order that calls for the USEPA's review of the Clean Power Plan. On October 25, 2017, the USEPA issued an Energy Independence Report to implement the executive order signed by the president. And, in August 2018, the USEPA issued the proposed Affordable

[62] GPO. 2007. Energy Independence and Security Act of 2007. January 4. Available at: http://www.gpo.gov/fdsys/pkg/BILLS-110hr6enr/pdf/BILLS-110hr6enr.pdf. Accessed: April 2019.

Clean Energy (ACE) Rule, which would replace the Clean Power Plan. The USEPA held a public hearing on October 1, 2018 on the ACE rule proposal and the rulemaking proceedings are still pending at the time of this report's preparation.[63]

American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act (ARRA) of 2009. ARRA was passed in response to the economic crisis of the late 2000s, with the primary purpose of maintaining existing jobs and creating new jobs. Among the secondary objectives of ARRA was investment in "green" energy programs, including funding the following through grants, loans, or other means: private companies developing renewable energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high efficiency or electric vehicles.[64,65]

Renewable Fuel Standards (RFS1 and RFS2)

Created under the Energy Policy Act of 2005, the RFS program established the first renewable fuel volume mandate in the United States. The original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA of 2007, the RFS program was expanded to include diesel and to increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022. In addition, the updated version of EISA required the USEPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

In January 2011, the USEPA established the volume requirements and associated percentage standards that applied in calendar year 2011 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel (RFS2). The final percentage standard sets 8% of renewable fuel per total volume. The rule also announced the 2011 price for cellulosic biofuel waiver credits ($1.13 per credit) and the USEPA's assessment of the aggregate compliance provision for domestic feedstocks. The regulation increased the volume of fuel required to be blended into transportation fuel from 12.2 billion gallons in 2009 to 74 billion gallons by 2022; this includes 16.0 billion gallons for cellulosic biofuel, at least 1 billion gallons for biomass-based diesel fuel, 21.0 billion gallons for advanced biofuel, and 36.0 billion gallons for renewable fuel.

2.4.2.8 Voluntary Programs

The following voluntary programs developed by the USEPA provide opportunities for industry, the USEPA, and other organizations in both the public and private sectors to work together to reduce GHG emissions.[66]

Center for Corporate Climate Leadership

The USEPA's Center for Corporate Climate Leadership serves as a resource center for all companies looking to expand their work in the area of GHG measurement and management.

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[63] USEPA. Available at: https://www.epa.gov/stationary-sources-air-pollution/proposal-affordable-clean-energy-ace-rule. Accessed: April 2019.

[64] The Recovery Act. 2009. Available at: https://obamawhitehouse.archives.gov/recovery. Accessed: April 2019.

[65] USEPA. 2009. Recovery: EPA Gets Involved. Available at: https://archive.epa.gov/recovery/web/html/. Accessed: April 2019.

[66] USEPA. 2017. Voluntary Energy and Climate Programs. Available at: https://19january2017snapshot.epa.gov/climatechange/voluntary-energy-and-climate-programs .html. Accessed: April 2019.

Green Power Partnership

The Green Power Partnership is a voluntary partnership between the USEPA and organizations that are interested in using green power, which is electricity produced from a subset of renewable resources, such as solar, wind, geothermal, biomass, and low-impact hydropower.

National Clean Diesel Campaign

The USEPA's National Clean Diesel Campaign (NCDC) promotes diesel emission reduction strategies. The NCDC works to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies by working with manufacturers, fleet operators, air quality professionals, environmental and community organizations, and state and local officials to reduce diesel emissions. NCDC activities include developing new emissions standards for locomotive and marine diesel engines; and promoting the reduction of emissions for existing diesel engines, including using cleaner fuels, retrofitting and repairing existing fleets, and reducing idling, among others.

State and Local Climate and Energy Program

The USEPA also administers the State and Local Climate and Energy Program, which provides technical assistance, analytic tools, and outreach support to state, local, and tribal governments.[67]

2.4.3 Multi-State Area

The Western Regional Climate Action Initiative (WCI) was established in 2007 by the governors of five US states (Arizona, California, New Mexico, Oregon, and Washington) as a partnership to implement a regional, economy-wide cap-and-trade system to reduce global warming pollution. By the end of 2008, the partnership had expanded to include Montana, Utah, and three Canadian provinces (British Columbia, Manitoba, and Quebec).

The WCI partners set a goal of reducing the region's GHG emissions from the electricity, industrial, and transportation sectors to 15% below 2005 levels by 2020. By December 2011, California and Quebec had adopted cap-and-trade regulations based on WCI recommendations, while the rest of the partner states declined to actively implement a cap-and-trade program. The partnership was then streamlined to include only California and the four Canadian provinces actively implementing or considering cap-and-trade programs. In May 2013, ARB adopted a final rule linking California's and Quebec's cap-and-trade programs (as of January 1, 2014) for the purpose of allowing the two entities to mutually recognize each other's compliance instruments. In October 2013, California and Quebec entered into an agreement to integrate and harmonize their cap-and-trade programs. California is also working closely with British Colombia, Ontario, and Manitoba through the WCI to develop harmonized cap-and-trade programs.

2.4.4 State

California has adopted various administrative initiatives and also enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the state. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents prepared under CEQA. In particular, the amendments to the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment of thresholds of significance, and do not specify GHG reduction mitigation measures. Instead, the CEQA Guidelines

[67] USEPA. 2019. Energy Resources for State, Local, and Tribal Governments. Available at: https://www.epa.gov/statelocalenergy. Accessed: April 2019.

amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. Consequently, no State agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents.

The discussion below provides a brief overview of California Air Resources Board (ARB) and Office of Planning and Research (OPR) documents and of the primary legislation that relates to climate change and that may affect the emissions associated with the Project. It begins with an overview of the primary regulatory acts that have driven GHG regulation in California, which underlie many of the GHG rules and regulations that have been developed.

2.4.4.1 Executive Order S-3-05 (State-Wide GHG Targets for 2010, 2020, and 2050)

California Executive Order S-03-05 (June 1, 2005) establishes the goal of reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. Although the 2020 target is the core of AB 32 and has effectively been incorporated into AB 32, the 2050 target remains the goal of the Executive Order only.[68]

2.4.4.2 Executive Order B-30-15 (State-Wide GHG Targets for 2030)

In April 2015, Governor Brown signed Executive Order B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This Executive Order 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 Executive Order S-3-05 (see discussion above). Additionally, the Executive Order directed CARB to update its Scoping Plan (see discussion below) to address the 2030 goal.

The Legislature adopted SB 32 to enact the Executive Order's 2030 goal, as described further below.

2.4.4.3 Assembly Bill 32 (Statewide GHG Reductions)

Assembly Bill (AB) 32 (Nunez, 2006), the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. In order to achieve this reduction mandate, AB 32 requires ARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

Of relevance to this analysis, in 2007, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. CARB's adoption of this limit is in accordance with Health & Safety Code Section 38550, as codified through enactment of AB 32.

Per Health & Safety Code Section 38561(b), CARB also is required to prepare, approve and amend a scoping plan that identifies and makes recommendations on "direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that [CARB] finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of greenhouse gas emissions by 2020."

[68] On November 6, 2013, the BAAQMD Board passed a resolution adopting the 2050 target of 80 percent below 1990 levels. Details of this resolution are described in the "Regional Provisions" section of this "Regulatory Setting" section.

2008 Scoping Plan

In 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (2008 Scoping Plan) in accordance with Health & Safety Code Section 38561. During the development of the 2008 Scoping Plan, CARB created a planning framework that is comprised of eight emissions sectors: (1) transportation; (2) electricity; (3) commercial and residential; (4) industry; (5) recycling and waste; (6) high global warming potential (GWP) gases; (7) agriculture; and, (8) forest net emissions.

The 2008 Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions from the eight emissions sectors to 1990 levels by 2020. In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]).[69] For example, in further explaining CARB's BAU methodology, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

To achieve the necessary GHG reductions to meet AB 32's 2020 target, CARB developed a series of reduction measures in the Scoping Plan covering a range of sectors and activities. Broadly, the reduction measures can be separated into capped sectors (i.e., covered by the Cap-and-Trade Program discussed below) and uncapped sectors.

Multiple Scoping Plan measures broadly cover emissions associated with land use development, including, but not limited to:

- *Energy Efficiency/Green Buildings*. The Scoping Plan highlights the importance of energy efficiency efforts in reducing GHG emissions from residential and commercial development and indicates that zero net energy (ZNE) should be the overarching and unifying concept for energy efficiency.
- *Regional Transportation-Related GHG Targets (SB 375*). The Scoping Plan relies on Senate Bill (SB) 375, discussed below, as an important mechanism to reduce mobile GHG emissions by integrating land use planning and transportation planning at the regional and local level.
- *Vehicle Emissions*. The Scoping Plan relies on various engine, fuel and other efficiency improvement programs and increasing electrification of the vehicle fleet.
- *Cap-and-Trade Program*. The Scoping Plan identifies the Cap-and-Trade program as a lynchpin, overarching strategy for California to reduce GHG emissions. As explained in the Scoping Plan, the program's implementing regulations provide assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions.

In the 2011 *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document* (2011 Final Supplement), CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level

[69] CARB, Climate Change Scoping Plan: A Framework for Change (December 2008), p. 12. Available at: https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewable Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions. The 2008 Scoping Plan inventory includes intrastate aircraft emissions but did not discuss any measures to reduce emissions from the aviation sector. Instead, it focused on motor vehicle emissions reductions and good movement efficiency measures.

2014 First Update to the Scoping Plan

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (2014 First Update).[70] The stated purpose of the 2014 First Update is to "highlight[…] California's success to date in reducing its GHG emissions and lay[…] the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050."[71] 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.[72]

In conjunction with the 2014 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."[73] 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 target.

Based on CARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050."[74] 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 2014 First Update, CARB recalculated the State's 1990 emissions level using more recent GWPs identified by the IPCC. 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 15.3 percent (instead of 28.5 percent or 16 percent) from the "BAU" conditions.

The 2014 First Update included a strong recommendation from CARB for setting a mid-term statewide GHG emissions reduction target. CARB specifically recommended that the mid-

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[70] Health & Safety Code Section 38561(h) requires ARB to update the Scoping Plan every five years.

[71] ARB. 2014. First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014). Available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed: April 2019.

[72] Ibid.

[73] Ibid.

[74] Ibid.

term target 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.

The 2014 First Update expands its focus on transportation to include the freight sector, which includes cargo aircraft. While the Sustainable Freight Initiative[75] does not focus explicitly on aircraft, the 2014 First Update states: "To achieve our multi-pollutant goals, over the long-term California must transition from a diesel-dependent system into one with significant numbers of zero and near-zero emission engines for trucks, locomotives, cargo-handling equipment, ships, and aircraft. California must also support the parallel development of the necessary supporting infrastructure and implement logistical/ efficiency improvements to reduce the emissions impact of moving freight." The 2014 First Update also included an objective to "build on the work done by the U.S. Department of Defense on cleaner fuels/aircraft design to reduce GHGs and criteria pollutants from air cargo."[76]

The 2014 First Update did not discuss any measures to reduce emissions from the aviation sector explicitly.

2017 Scoping Plan

In 2017, CARB adopted *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (2017 Scoping Plan).[77] This 2017 Scoping Plan addresses Executive Order B-30-15 (described earlier) and SB 32 (described in a later section), which extend the goals of AB 32 and set a 2030 goal of reducing emissions 40 percent below 1990 levels. The 2017 Scoping Plan includes the following major elements for reaching the 2030 Target:

1. SB 350

   The objective of this policy element is to enhance existing programs and implement SB 350, with a target of achieving 50 percent Renewables Portfolio Standard (RPS) and a doubling of energy efficiency savings in natural gas and electricity end uses statewide by 2030.

2. Low Carbon Fuel Standard (LCFS)

   The objective of this policy element is to transition to cleaner/less-polluting fuels that have a lower carbon footprint, with a goal of at least 18 percent reduction in carbon intensity.

3. Mobile Source Strategy

   This strategy will reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems, and reduction of vehicle miles traveled (VMT). Highlights of this strategy include a target of 4.2 million zero-emission vehicles on the road by 2030; reduction in GHGs from medium-and heavy-duty vehicles via the Phase 2 Medium and Heavy-Duty GHG Standards; a suite of innovative clean transit options including requirements for the

[75] ARB. 2019. Sustainable Freight Transport. Available at: https://www.arb.ca.gov/gmp/sfti/sfti.htm. Accessed: June 2019.
[76] ARB. 2014. First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014). Available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed: April 2019.
[77] 2017. ARB. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed: April 2019.

deployment of zero emission buses, and emissions standards for new natural gas and diesel buses; a new "Last Mile Delivery" regulation for certain delivery trucks that would result in the use of cleaner engines and zero-emission vehicles; and reduction in VMT to be achieved in part by the continued implementation of regional Sustainable Community Strategies pursuant to SB 375 (described in a later section) and other statewide strategies.

4. SB 1383

   This Short-Lived Climate Pollutant strategy will achieve a 40 percent reduction in methane and hydrofluorocarbon emissions and a 50 percent reduction in anthropogenic black carbon emissions below 2013 levels by 2030.

5. California Sustainable Freight Action Plan

   This plan will improve freight system efficiency by 25 percent by 2030, deploy over 100,000 zero emission freight vehicles and equipment, and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.

6. Post 2020 Cap-and-Trade Program

   CARB will continue the existing Cap-and-Trade Program after 2020 with declining caps.

With the exception of the post-2020 Cap-and-Trade Program, the above measures and policies are considered "known commitments" meaning that they were existing programs or required by statute prior to the adoption of the 2017 Scoping Plan. (Since adoption of the 2017 Scoping Plan, legislation was enacted extending the horizon year of the Cap-and-Trade Program to 2030.)

The 2017 Scoping Plan also addressed how CEQA can be used to further the statewide goals of GHG reduction. The Plan recommends GHG reduction goals that can apply to plan- or project-level analyses to be incorporated into environmental documentation in support of CEQA. The Plan states a GHG target in the form of MT CO_2e per capita is "appropriate for the plan level (city, county, subregional, or regional level), but not for specific individual projects, because [CARB's metric] includes all emissions sectors in the State." Project-level goals may be supported by local governments or lead agencies and include potential strategies such as tiering from a geographically specific GHG reduction plan, comparing to service population emissions targets, implementing all feasible mitigation measures, achieving zero net GHG emissions, or emitting less than bright-line numerical thresholds.

Similar to the 2014 Update, the 2017 Scoping Plan does not explicitly mention the aviation sector but rather references aircraft as a GHG emission reduction opportunity for goods movement only. Passenger transport is specifically analyzed through mobile vehicle and rail modes.

California Mandatory Reporting Rule

CARB adopted the California Mandatory Reporting Rule in December 2007 (CCR Title 17, Subchapter 10, Article 2). In December 2010, CARB adopted proposed revisions to support a California GHG cap-and-trade program and to harmonize with the Federal Rule. The revised rule, in effect starting January 1, 2012, eliminates many of the differences between the federal and California rules, though some remain. Additional modifications and clarifications were made to the rule in 2012, 2013, 2014, 2016, and 2018.

The California Mandatory Reporting Rule (MRR) requires the reporting of GHG emissions from essentially the same source categories specified in the USEPA MRR, but with some

differences. Most of the differences in the rules are related to ensuring that all sources subject to the California cap-and-trade regulations will also be subject to the California rule, and that GHG emissions reporting for those sources will meet the requirements of the cap-and-trade program. Additionally, California requires that emission reports be verified by a third party, and that sources emitting less than the federal reporting threshold but more than the California reporting threshold are subject to abbreviated reporting requirements.

Cap-and-Trade Program

The California Global Warming Solutions Act of 2006 (AB 32) allowed, but did not require, CARB to include among the mechanisms intended to reduce GHG emissions a "system of market-based declining annual aggregate emission limits." The legislation required CARB to develop a Scoping Plan to describe the various mechanisms that would be used. In turn, the Scoping Plan, approved by CARB on December 11, 2008, directed CARB staff to develop, among other programs, a cap-and-trade mechanism that would apply a declining aggregate cap on GHG emissions[78] and provide a flexible compliance system using tradable instruments.

On October 20, 2011, CARB adopted the final cap-and-trade regulation (CCR Title 17, Subchapter 10, Article 5). The program started on January 1, 2012, and will proceed in "compliance phases," the first of which began on January 1, 2013. In the first phase, the program applies to electric utilities, importers of electricity, and specified industries, including refineries. Approximately 350 electric utilities and approximately 600 industrial facilities were included in the initial phase of the program. In 2015, importers and distributors of fossil fuels were added to the program in the second phase. The program imposes a "cap" on the total GHG emissions from covered entities in the state, and the quantity of emissions allowed under the cap decreases each year, ultimately reaching the goal of returning state-wide GHG emissions to 1990 levels by 2020. (The quantity of allowed emissions actually increases between 2014 and 2015, but that is to account for the addition of the fuel importers and distributors and additional electricity importers to the program; the net effect is to reduce overall GHG emissions.)

To encourage emission sources to emit less as the cap decreases, "allowances," or permission to emit GHGs, are made available in decreasing quantities. Allowances are both freely allocated and auctioned off. The amount of freely given allowances decreases over time, and the severity of the decrease varies by industrial sector, with those thought to be less vulnerable to out-of-state competition receiving fewer allowances more quickly. Similarly, the amount of allowances available for purchase at auction decreases. The intent is to make reducing GHG emissions more financially attractive as the number of available allowances decreases, making each allowance more costly.

On May 8, 2013, ARB adopted proposed amendments to the California GHG emissions cap-and-trade program in Resolution 13-7. These amendments would add security to the market system and help staff implement the cap-and-trade program, as well as link the California cap-and-trade program with that of the Canadian province Quebec.[79] Additional minor modifications were made to the regulation in 2013, 2014, 2016, and 2018.

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[78] The cap-and-trade regulation applies to the following GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

[79] ARB. 2013. Amendments to California Cap-and-Trade Program – Linkage. Available at: https://www.arb.ca.gov/regact/2012/capandtrade12/res13-7.pdf. Accessed: April 2019.

On July 25, 2017, the Governor of California approved AB 398 which extended the cap-and-trade program 2030. Under AB 398, the state-wide GHG emissions goal is 40 percent below 1990 levels by 2030.

Co-Pollutant Benefits

Implementation of the cap-and-trade program will also reduce state-wide emissions of criteria and toxic air pollutants. Because GHG emissions are largely the result of fuel combustion, as the cap decreases and state-wide combustion decreases, criteria and toxic air pollutants associated with combustion will also decrease state-wide. CARB also evaluated the potential for localized impacts from short-term increases in construction and operational emissions at facilities modifying operations in response to cap-and-trade compliance obligations. CARB's analysis indicated that localized impacts are unlikely due to existing local and state air quality regulations; however, where there is potential for significant impact from a proposed project, it would be addressed by local permitting agencies and CEQA lead agencies through the permitting and CEQA processes in which mitigation measures are evaluated.

2.4.4.4 Senate Bill 32 and Assembly Bill 197

Enacted in 2016, Senate Bill (SB) 32 (Pavley, 2016) codifies the 2030 emissions reduction goal of Executive Order B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

SB 32 was coupled with a companion bill: AB 197 (Garcia, 2016). Designed to improve the transparency of CARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning statewide programs, policies and investments related to climate change. AB 197 also requires CARB to make certain GHG emissions inventory data publicly available on its web site; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and, include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

2.4.4.5 Executive Order B-55-18

In September 2018, Governor Brown signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

In January 2019, CARB held a workshop regarding carbon neutrality in California, during which CARB staff explained that the definitional parameters and meaning of the term – carbon neutrality – are still being explored. CARB intends to hold additional workshops to explore specific topics related to the pursuit of carbon neutrality, engage with other experts in the field and stakeholders, and conduct research to ensure that any path to carbon neutrality balances scientific, economic and social justice principles.

2.4.4.6 Regulation of Energy-Related Sources

Renewables Portfolio Standard (SB 100)

As most recently amended by SB 100 (2018), California's Renewables Portfolio Standard requires retail sellers of electric services and local publicly-owned electric utilities to increase procurement from eligible renewable energy resources to 50 percent of total retail sales by 2026, and 60 percent of total retail sales by 2030. SB 100 also established a state policy goal to achieve 100 percent renewables by 2045.

GHG Emissions Standard for Baseload Generation (SB 1368)

SB 1368 (September 29, 2006) prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant.[80] This performance standard applies to electricity generated out-of-state as well as in the state, and to publicly owned as well as investor-owned electric utilities.

2.4.4.7 Regulation of Mobile Sources

Senate Bill 375 (Land Use Planning)

SB 375 provided for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32.[81] SB 375 requires Metropolitan Planning Organizations (MPOs), including the Association of Bay Area Governments (ABAG), to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans (RTPs) that will achieve GHG emission reduction targets set by CARB, primarily by reducing VMT from light-duty vehicles through development of more compact, complete, and efficient communities.

SB 375 also required CARB to appoint a Regional Targets Advisory Committee (RTAC) to recommend factors for CARB to consider and methodologies for it to use in setting GHG emission reduction targets (Regional Targets) for each region. On September 29, 2009, the RTAC released its recommendations to CARB, who, on September 23, 2010, adopted Regional Targets applying to the years 2020 and 2035. The 2010 Regional Targets were 7% for 2020 and 15% for 2035 for the area under ABAG's jurisdiction, which includes San Jose Airport. In 2018, CARB revised these Regional Targets to 10% for 2020 and 19% for 2035.[82]

On July 18, 2013, the Metropolitan Transportation Commission (MTC) and ABAG approved Plan Bay Area, which includes the Bay Area region's first SCS as well as a new 2040 RTP and establishes the strategies for meeting the Bay Area's Regional Targets.[83] On July 26, 2017, MTC and ABAG approved Plan Bay Area 2040, which is a strategic update to Plan Bay Area 2013, providing a roadmap for transportation and land-use planning in the nine Bay Area counties. Plan Bay Area is a long-range plan that looks out over 20-plus years and is updated every four years.[84] Plan Bay Area and the SCS for the San Francisco Bay Area are discussed in **Section 2.3.5** below.

Mobile Source Reductions (Pavley) (AB 1493)

AB 1493 required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model years 2009 through 2016.[85] The bill required the California Climate Action Registry to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emission reduction credits. The bill authorizes CARB to grant

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[80] State of California. 2006b. Senate Bill 1368 (2005-2006 Reg. Session) Stats. 2006, ch. 598.

[81] State of California. 2008. Senate Bill 375. 2008, ch. 728.

[82] ARB. 2019. SB 375 Regional Plan Climate Targets. Available at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed: April 2019.

[83] Metropolitan Transportation Commission. 2013. Plan Bay Area, Previous Plan. Available at: https://www.planbayarea.org/previous-plan. Accessed: April 2019.

[84] MTC. 2017. Plan Bay Area, 2040 Plan. Available at: https://www.planbayarea.org/plan. Accessed: April 2019.

[85] State of California. 2002a. Assembly Bill 1493 (2001-2002 Reg. Session) Stats. 2002, ch. 200.

emission reduction credits for reductions of GHG emissions prior to the date of the enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the USEPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the USEPA in December 2007 after California filed suit to prompt federal action. In January 2008, the State Attorney General filed a new lawsuit against the USEPA for denying California's request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Obama issued a directive to the USEPA to reconsider California's request for a waiver. On June 30, 2009, the USEPA granted the waiver to California for its GHG emission standards for motor vehicles. As part of this waiver, the USEPA specified the following provision: CARB may not hold a manufacturer liable or responsible for any non-compliance caused by emission debits generated by a manufacturer for the 2009 model year.

Low Carbon Fuel Standard

Executive Order S-1-07, as issued by Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020.[86] In response, CARB approved the LCFS regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and, in 2013, a court order was issued compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA.[87] However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations.

In January 2019, CARB adopted amendments to the LCFS regulation to support the objectives of the state's 2017 Scoping Plan in achieving the statewide GHG target of 40 percent below 1990 levels by 2030. The amended regulation targeted a 20 percent reduction in fuel carbon intensity from a 2010 baseline by 2030. Specifically, it strengthened the carbon intensity benchmarks for gasoline, diesel, and jet fuel substitutes from 2019 to 2030, and added new credit generating fuels and vehicle categories to incent further reductions, including alternative jet fuels.[88] The LCFS would reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10% by 2020 and, as most recently amended in 2018, by at least 20% by 2030.

Clean Cars

In January 2012, CARB approved the Advanced Clean Cars Program, which established an emissions control program for cars and light-duty trucks (such as SUVs, pickup trucks, and minivans) of model years 2017-2025. When the program is fully implemented, new vehicles will emit 75% less smog-forming pollutants than the average new car sold today, and GHG emissions will be reduced by nearly 35%. The program also requires car manufacturers to offer for sale an increasing number of zero-emission vehicles (ZEVs) each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles.

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[86] Carbon intensity is a measure of the GHG emissions associated with the various production, distribution and use steps in the "lifecycle" of a transportation fuel.

[87] *POET, LLC v. CARB* (2013) 217 Cal.App.4th 1214.

[88] ARB. 2019. Low Carbon Fuel Standard. Available at: https://www.arb.ca.gov/fuels/lcfs/lcfs.htm. Accessed: April 2019.

In December 2012, CARB adopted regulations allowing car manufacturers to comply with California's GHG emissions requirements for model years 2017-2025 through compliance with the USEPA GHG requirements for those same model years.[89]

2.4.4.8 CEQA Guidelines Amendments

2009 CEQA Guidelines Amendments (SB 97)

The 2009 CEQA Guidelines amendments adopted pursuant to SB 97 state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines amendments note that an agency may identify emissions either by selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards."[90] Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a state-wide, regional, or local plan for the reduction or mitigation of GHG emissions.[91]

In addition, Section 15064.7(c) of the CEQA Guidelines amendments specifies "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence"[92]. Similarly, the revision to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? or
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

This indicates that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Guidelines amendments do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead

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[89] ARB. 2014. Lev III and ZEV Regulation Amendments For Federal Compliance Option, December 31. Available at: http://www.arb.ca.gov/regact/2012/leviiidtc12/leviiidtc12.htm. Accessed: April 2019.

[90] CNRA. 2009. Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of GHG Emissions Pursuant to SB97. Available at: http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf. Accessed: April 2019.

[91] CNRA. 2009. Revised Text of Proposed Guideline Amendments. Sacramento, CA. Available at: http://resources.ca.gov/ceqa/docs/Adopted_and_Transmitted_Text_of_SB97_CEQA_Guidelines_Amendments.pdf. Accessed: April 2019.

[92] Ibid.

agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA.

The CEQA Guidelines amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. These potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures.[93]

Among other things, the California Natural Resources Agency (CNRA) noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states:

> While the Proposed Amendments do not foreclose the possibility that a single project may result in GHG emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of GHG emissions should center on whether a project's incremental contribution of GHG emissions is cumulatively considerable.[94]

Thus, the CEQA Guidelines amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

As described in the Final Statement of Reasoning[95] for the 2009 CEQA Guidelines amendments, the CEQA Guidelines specifically do not address lifecycle emission for two reasons. First, there are different interpretations of the meaning of "lifecycle" amongst lead agencies, which could lead to confusion on how to evaluate the contribution of lifecycle emissions to a project. Furthermore, requiring an analysis of lifecycle emissions may be inconsistent with CEQA, as the emissions may be outside the scope of the "indirect emissions" that are evaluated with a project.

2018 CEQA Guidelines Amendments

In late 2018, the CNRA finalized amendments to the CEQA Guidelines including changes to CEQA Guidelines section 15064.4, which addresses the analysis of greenhouse gas emissions. The amendments became effective on December 28, 2018 and clarified several points, including the following:[96]

- Lead agencies must analyze the greenhouse gas emissions of proposed projects. (See CEQA Guidelines, § 15064.4, subd. (a).)
- The focus of the lead agency's analysis should be on the project's incremental contribution to climate change, rather than simply focusing on the quantity of emissions

[93] Ibid.

[94] CNRA. 2009. Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act. Available at: http://resources.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf. Accessed: April 2019.

[95] CNRA. 2009. Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of GHG Emissions Pursuant to SB97. Available at: http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf. Accessed: April 2019.

[96] OPR. 2019. CEQA and Climate Change. Available at: http://opr.ca.gov/ceqa/climate-change.html. Accessed: April 2019.

and how that quantity of emissions compares to statewide or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b).)

- The impacts analysis of greenhouse gas emissions is global in nature and thus should be considered in a broader context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b).)
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project. (See CEQA Guidelines, § 15064.4, subd. (b).)
- A lead agency's analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes. (See CEQA Guidelines, § 15064.4, subd. (b).)
- Lead agencies may rely on plans prepared pursuant to section 15183.5 (Plans for the Reduction of Greenhouse Gases) in evaluating a project's greenhouse gas emissions. (See CEQA Guidelines, § 15064.4, subd. (b)(3).)
- In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (See CEQA Guidelines, § 15064.4, subd. (b)(3).)
- The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. (See CEQA Guidelines, § 15064.4, subd. (c).)[97]

2.4.4.9 Senate Bill 743

Public Resources Code Section 21099(c)(1), as codified through enactment of SB 743, was enacted with the intent to change the focus of transportation analyses conducted under CEQA. SB 743 reflects a legislative policy to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. SB 743 requires the OPR to establish "alternative metrics to the metrics used for traffic levels of service for transportation impacts outside transit priority areas."[98] Under SB 743, the new metrics or significance criteria must promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. SB 743 dictates that once the CEQA Guidelines are amended to include new thresholds, automobile delay, as described by level of service or similar measures of vehicular capacity or congestion, shall no longer be considered a significant impact under CEQA in all locations in which the new thresholds are applied. The Legislature gave OPR the option of applying the new thresholds only to transit priority areas, or more broadly to areas throughout the State. OPR proposed to apply the new thresholds throughout the State.

In January 2016, OPR issued its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (Revised SB 743 Proposal). Included in the

[97] Ibid.

[98] California Legislative Information. 2013. SB-743 Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects, and entertainment and sports center in the City of Sacramento. Available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743. Accessed: April 2019.

Revised SB 743 Proposal were proposed new CEQA Guidelines Section 15064.3 and related revisions to Appendix G. Under the proposed new Guidelines, the analysis of transportation impacts in the CEQA context would shift from a levels of service metric to a vehicle miles traveled (VMT) metric. In proposing the new approach, OPR noted the relationship between VMT and GHG emissions.

A VMT metric was adopted as part of the 2018 CEQA Guidelines Amendments (described above), which became effective on December 28, 2018. As described in the Final Statement of Reasoning[99] for the 2018 CEQA Guidelines amendments: "The current emphasis on traffic congestion in transportation analyses tends to promote increased vehicle use. This new guidance instead focuses on a project's effect on vehicle miles traveled, which should promote project designs that reduce reliance on automobile travel."

2.4.4.10 Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations regulates the design of building shells and building components. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

The California Energy Commission's (CEC) 2016 Building Energy Efficiency Standards (2016 Building Standards), which become on effective January 1, 2017, are the currently applicable version of these standards. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards.[100] The CEC also has developed and adopted the 2019 Building Standards, which will go into effect on January 1, 2020. The 2019 Building Standards are expected to result in further energy savings and efficiencies, as compared to the 2016 standards.

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen Building Standard (CalGreen), and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CalGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update.

2.4.4.11Zero Emission Vehicles

Zero emission vehicles (ZEVs) include hydrogen fuel cell electric vehicles and plug-in electric vehicles, such as battery electric vehicles and plug-in hybrid electric vehicles.

In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet in order to help California achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of that statewide target for the transportation sector, the EO also calls upon

[99] CNRA. 2018. Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines. Available at: http://resources.ca.gov/ceqa/docs/2018_CEQA_Final_Statement_of%20Reasons_111218.pdf. Accessed: April 2019.

[100] CEC. 2015. 2016 Building Energy Efficiency Standards – Frequently Asked Questions. Available at: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf. Accessed: April 2019.

CARB, the CEC and the California Public Utilities Commission to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the State's residents with easy access to ZEV infrastructure.

EO B-16-2012 specifically directed California to "encourage the development and success of zero-emission vehicles to protect the environment, stimulate economic growth, and improve the quality of life in the state."[101] The Executive Order established several milestones organized into three time periods:

By 2015:

- The State's major metropolitan areas will be able to accommodate zero-emission vehicles, each with infrastructure plans and streamlined permitting;
- The State's manufacturing sector will be expanding zero-emission vehicle and component manufacturing;
- The private sector's investment in zero-emission vehicle infrastructure will be growing; and
- The State's academic and research institutions will be contributing to zero-emission vehicle research, innovation, and education.

By 2020:

- The State's zero-emission vehicle infrastructure will be able to support up to one million vehicles;
- The costs of zero-emission vehicles will be competitive with conventional combustion vehicles;
- Zero-emission vehicles will be accessible to mainstream consumers;
- There will be widespread use of zero-emission vehicles for public transportation and freight transport;
- Transportation sector greenhouse gas emissions will be falling as a result of the switch to zero-emission vehicles;
- Electric vehicle charging will be integrated into the electricity grid; and
- The private sector's role in the supply chain for zero-emission vehicle component development and manufacturing State will be expanding.

By 2025:

- Over 1.5 million zero-emission vehicles will be on California roads and their market share will be expanding;
- Californians will have easy access to zero-emission vehicle infrastructure; and
- California's clean, efficient vehicles will annually displace at least 1.5 billion gallons of petroleum fuels.

In furtherance of those goals, in February 2013, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2013 ZEV Action Plan: A roadmap toward 1.5 million*

[101] Executive Order B-16-2012. Available at: https://www.ca.gov/archive/gov39/2012/03/23/news17472/index.html. Accessed: July, 2019.

zero-emission vehicles on California roadways *by 2025*.[102] The 2013 ZEV Action Plan identifies four broad goals for state government to advance ZEVs: 1) Complete needed infrastructure and planning; 2) Expand consumer awareness and demand; 3) Transform Fleets; and 4) Grow jobs and investment in the private sector. As part of these goals, some highlighted strategies and actions include: i) supporting ZEV infrastructure planning and investment by private entities; ii) enabling universal access to ZEV infrastructure for California drivers; iii) reducing upfront purchase costs for ZEVs; iv) promoting consumer awareness of ZEVs; and v) helping to expand ZEVs in bus fleets. The Action Plan discusses the challenges of ZEV expansion, which include the need to enable electric vehicle chargers in homes, increase consumer awareness, address up-front costs and operational limitations, and address that ZEVs are not commercially available for all categories of vehicles.

In October 2016, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California* roadways *by 2025*.[103] This report provides an update on progress toward achieving the 2013 goals and highlights the following four top priorities for the upcoming years: 1) Raise consumer awareness and education about ZEVs; 2) Ensure ZEVs are accessible to a broad range of Californians; 3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and 4) Aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: i) Achieve mainstream consumer awareness of ZEV options and benefits; ii) Make ZEVs an affordable and attractive option for drivers; iii) Ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs; iv) Maximize economic and job opportunities from ZEV technologies; v) Bolster ZEV market growth outside of California; and vi) Lead by example by integrating ZEVs into state government. The goals and strategies proposed in the 2013 Action Plan will continue to be implemented. Additional strategies are proposed to help achieve the new goals, including setting targets to increase home charging stations in multi-unit dwellings and disadvantaged communities and for public transit and school bus electrification. The 2016 Action Plan describes challenges toward achieving the 2025 goal of 1.5 million ZEVs in California, such as that most consumers are still not aware of the benefits of passenger ZEVs and that over 1,000,000 charge points will be needed at homes, workplaces, and public locations but only 11,000 non-home charge points are installed as stated in the 2016 ZEV Action Plan.

In January 2018, Governor Brown signed EO B-48-18 issuing a "Priorities Update": *An update to the 2016 Zero-Emission Vehicle Action Plan to help expand private investment to the zero-emission vehicle infrastructure, particularly in the low income and disadvantaged communities.* The initiative is focused on deploying charging and fueling infrastructure through multi-stakeholder efforts, thus increasing both ownership and operations of ZEVs. The 2018 Priorities Update focuses specifically on state agency actions and is designed to serve three fundamental purposes: 1) Provide direction to state agencies on the most important actions to be executed in 2018 to enable the progress toward the 2025 targets and 2030 vision. 2) Give Stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market. 3) Create a platform for stakeholder engagement, feedback, and collaboration.[104]

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[102] Governor's Interagency Working Group on Zero-emission Vehicles. 2013. Available at: http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf. Accessed: July, 2019.

[103] Governor's Interagency Working Group on Zero-emission Vehicles. 2016. "Priorities Update". 2018. Available at: http://business.ca.gov/Portals/0/ZEV/2018-ZEV-Action-Plan-Priorities-Update.pdf. Accessed: July, 2019.

[104] Ibid.

Additionally, in May 2014, the National Renewable Energy Laboratory issued the *California Statewide Plug-In Electric Vehicle Infrastructure Assessment* (Infrastructure Assessment report) prepared at the request of the CEC. In the Infrastructure Assessment report, the CEC noted that "can't miss" ZEV charging locations are residential and workplace areas.

California is incentivizing the purchase of ZEVs through implementation of the Clean Vehicle Rebate Project (CVRP), which is administered by a non-profit organization (The Center for Sustainable Energy) for CARB and currently subsidizes the purchase of passenger near-zero and zero emission vehicles as follows:

- Hydrogen Fuel Cell Electric Vehicles: $5,000;
- Battery Electric Vehicles: $2,500;
- Plug-In Hybrid Electric Vehicles: $1,500; and
- Neighborhood Electric Vehicles and Zero Emission Motorcycles: $900.

In October 2016, CARB announced a grant solicitation for an administrator to implement CVRP and Increased Incentives for Public Fleets in Disadvantaged Communities for Fiscal Year 2016-2017, which also included options for Fiscal Year 2017-2018 and 2018-2019. The Center for Sustainable Energy was selected for the project.[105] Funding is appropriated for the rebate program each year in the State Budget. Fiscal Year 2016-2017 funding was $78 million for CVRP and up to $3 million for the Public Fleet Pilot Project. Funding for Fiscal Year 2018-2019 was $175 million for CVRP and $25 million for increased CVRP rebates for low-income applicants.[106] Funding for Fiscal Year 2019-2020 is still under in discussion, but the proposed funding is the same as 2018-2019. Monthly application totals have doubled since July 2018, but the budget has not been increased accordingly.[107]

In March 2017, CARB received Volkswagen's (VW) first 30-month ZEV Investment Plan (Plan).[108] This Plan is required by California's partial settlement with VW resulting from VW's use of illegal defeat devices in its 2.0-liter (2.0L) diesel cars sold in the state from model years 2009 to 2015. The Plan describes how VW is proposing to spend the first $200 million in California on ZEV charging infrastructure (including the development and maintenance of ZEV charging stations), public awareness, increasing ZEV access, and a green city demonstration. In June 2017, Electrify America (a subsidiary of VW) provided CARB with additional information on the Plan.[109] CARB approved the first of the four plans in July, 2017.[110]

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[105] Clean Vehicle Rebate Project. Available at: https://ww3.arb.ca.gov/msprog/aqip/cvrp.htm. Accessed: July, 2019.

[106] Low Carbon Transportation Investments and AQIP Funding Plan Archive. Available at: https://ww3.arb.ca.gov/msprog/aqip/fundplan/funding_plan_archive.htm. Accessed July, 2019.

[107] Fiscal Year 2019-20 Funding Plan for Clean Transportation Incentives. Available at: https://ww2.arb.ca.gov/sites/default/files/2019-06/061319_fundingplanwkshp_presentation.pdf. Accessed July, 2019.

[108] VOLKSWAGEN, Group of America. 2017. California ZEV Investment Plan: Cycle 1, March 8, 2017. Available at: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/documents/vwinvestplan1_031317.pdf. Accessed: July, 2019.

[109] Electrify America. 2017. Supplement to the California ZEV Investment Plan, Cycle 1, June 29, 2017. Available at: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/documents/california_zev_investment_plan_supplement_062917.pdf. Accessed: July, 2019.

[110] CARB, 2017. CARB Approves $200 Million VW Zero-Emission Vehicle Investment in California, July, 27. Available at: https://www.arb.ca.gov/newsrel/newsrelease.php?id=946. Accessed: July, 2019.

In its 2014 First Update, CARB recognized that the light-duty vehicle fleet "will need to become largely electrified by 2050 in order to meet California's emission reduction goals."[111] Accordingly, CARB's Advanced Clean Cars (ACC) program – summarized above – requires about 15 percent of new cars sold in California in 2025 to be a plug-in hybrid, battery electric or fuel cell vehicle.[112]

In December, 2018, CARB approved Electrify America's Cycle 2 California ZEV Investment Plan. Cycle 2 continues to support the goals established in the first funding cycle but adds in new metropolitan and regional charging corridors. It also expands investments for charging stations to support ZEV bus fleets and ride hail services and autonomous vehicle charging.[113]

Other statewide and regional initiatives that spur ZEV uptake include the following:

- ARB currently subsidizes the purchase of passenger near-zero and zero emission vehicles, as well as through the provision of access to high-occupancy vehicle (HOV) lanes to ZEV drivers.
- The Volkswagen settlement would result in $800 million in ZEV projects in California over the next ten years, with a focus on increasing public awareness and infrastructure in the first funding cycle.[114]
- The California Green Building Standards Code (Part 11 of Title 24, California Code of Regulations) (CALGreen) requires new residential and non-residential construction to be pre-wired to facilitate the future installation and use of electric vehicle chargers (see Section 4.106.4 and Section 5.106.5.3 of 2016 CALGreen Standards for the residential and non-residential pre-wiring requirements, respectively).
- In January, 2017, three of California's largest utilities submitted proposals to the California Public Utilities Commission (CPUC) to electrify the state's transportation sector through more than $1 billion in investments.
- Southern California Edison (SCE) filed an application to expand electric transportation in its service area, which includes the project site. Some of SCE's proposals include monetary rewards to rideshare drivers who use an electric vehicle, additional fast charge infrastructure at targeted locations within the region, and rates that are designed to incentivize electric vehicle adoption.[115]
- Pacific Gas and Electric (PG&E) submitted an application that aims to expand the electrification of medium- and heavy-duty vehicle fleets, expand fast-charging stations that can refuel EVs in 20-30 minutes, and explore new uses for vehicle electrification.[116]

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[111] CARB, First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014), p. 48.

[112] Id. at p. 47.

[113] Electrify America. 2019. Electrify America Receives Go Ahead for its Second $200 Million Investment in California, December 13, 2018. Available at: https://media.electrifyamerica.com/en-us/releases/42. Accessed: July, 2019.

[114] ARB, Volkswagen Settlement – California ZEV Investments webpage, available at: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/vw-zevinvest.htm. Accessed: July, 2019.

[115] SCE, Application of Southern California Edison Company (U 338-E) for Approval of Its 2017 Transportation Electrification Proposals (January 20, 2017).

[116] PG&E, In the Matter of the Application of Pacific Gas and Electric Company for Approval of its Senate Bill 350 Transportation Electrification Program (January 20, 2017).

- San Diego Gas & Electric (SDG&E) submitted an application to install tens of thousands of charging stations in its service area to boost the transition to zero-emission vehicles, trucks, shuttles and delivery fleets.[117]
- In its Final 2016 Air Quality Management Plan (AQMP), SCAQMD identified multiple measures to help accelerate ZEV penetration for passenger and light-heavy and medium-heavy duty vehicles.[118]
- Metropolitan Transportation Commission's (MTC) Climate Initiatives Program aims to reduce the transportation sector's carbon footprint. Since 2009, MTC has invested $102 million towards reducing transportation-related GHG emissions. Some activities that this program has funded include car sharing, climate initiative innovation grants, the commuter benefits program, EV activities, and EV infrastructure and incentives.[119] MTC's Plan Bay Area 2040 directs $526 million to the program and $56 million for incentivizing carpooling.
- BAAQMD, along with other local partners provided funding for the City CarShare program, now called GoCarma, to increase the number of plug-in hybrid electric vehicles (PHEV) in the fleet.[120]
- The EV Charging Station Demonstration Program provided approximately $1 million in grant funding to install new, publicly available EV charging stations along major transportation corridors, at workplaces, and at key destinations in the Bay Area Air District in 2015.[121] 77 charging stations were installed at 19 different facilities in the Air District.[122]

2.4.4.12 Senate Bill 391 (California Transportation Plan)

Also known as the California Transportation Plan, SB 391 denoted that the DOT will take into account a wide variety of measures, including the use of alternative fuels, new vehicle technology, tailpipe emissions reductions, and the expansion of public transit, bicycling, and walking. Finally, SB 391 requires that the DOT update the California Transportation Plan by December 31, 2015, and every five years thereafter. The California Transportation Plan was updated in 2015.[123]

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[117] SDG&E, Application of San Diego Gas & Electric Company (U902E) for Approval of SB 350 Transportation Electrification Proposals (January 20, 2017).

[118] SCAQMD, Draft Final 2016 Air Quality Management Plan (December 2016). Available at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-draft-2016-aqmp. Accessed: February 17, 2017.

[119] Climate Initiatives Program. Available at: https://mtc.ca.gov/our-work/plans-projects/climate-change-programs/climate-initiatives-program. Accessed July 2019.

[120] Bay Area Electric Vehicle Demonstration Programs. Available at: http://www.baaqmd.gov/plans-and-climate/bay-area-pev-program. Accessed July 2019.

[121] Ibid.

[122] EV Charging Demonstration Program Report on Program Results. Available at: http://www.baaqmd.gov/~/media/files/strategic-incentives/ev-demo/ev-charging-station-demonstration-program-results-revised-intro-pdf.pdf?la=en. Accessed July 2019.

[123] California Department of Transportation. California Transportation Plan 2040. Available at: http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/index.shtml. Accessed: April 2019.

2.4.4.13 Other State GHG Regulatory Activities

CARB Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger signed Executive Order S-13-08, which called on State agencies to develop a strategy for identification of and preparation for expected climate change impacts in California. The resulting *2009 California Climate Adaptation Strategy* report was developed by the CNRA in coordination with the Climate Action Team (CAT). The report presents the best available science relevant to climate impacts in California and proposes a set of recommendations for California decision-makers to assess vulnerability and promote resiliency in order to reduce California's vulnerability to climate change. Guidance regarding adaptation strategies is general in nature and emphasizes incorporation of strategies into existing planning policies and processes. The report has since been updated in 2014 and 2018 and is now known as the Safeguarding California Plan, which is a roadmap for the state's programmatic and policy actions to achieve an integrated climate change adaptation strategy.[124]

In addition to requiring the CAT to create a Climate Adaptation Strategy, Executive Order S08-13ᵒ ordered the creation of a comprehensive Sea Level Rise Assessment Report. The report, published in June 2012, indicates that the sea level along most of California's coast is expected to rise about 1 meter over the next century and is likely to increase the risk of damage in the form of flooding, coastal erosion, and wetland loss due to storm surges and high waves. The sea level increase is slightly higher than projected for global sea levels.[125,126]

Executive Order S-13-08 also called for the California Ocean Protection Council (OPC) to work with the other CAT State agencies to develop interim guidance for assessing the potential impacts of sea level rise due to climate change in California. In coordination with National Academy of Sciences efforts, the OPC drafted interim guidance recommending that State agencies consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability, reduce expected risks, and increase resiliency to sea level rise. The draft resolution and interim guidance document are consistent with the Ocean Protection Act (Division 26.5, Public Resource Code Section 35615(a)(1)), which specifically directs the OPC to coordinate activities of State agencies to improve the effectiveness of State efforts to protect ocean resources.[127]

Proposed Zero-Emission Airport Shuttle Regulation

CARB is in the process of developing a regulation to accelerate the deployment of zero-emission airport shuttle fleets at large, medium, and small hub airports, including SJC. As currently proposed, the Zero-Emission Airport Shuttle Regulation would require the following

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[124] CNRA. 2019. Safeguarding California and Climate Change Adaptation Policy. Available at: http://resources.ca.gov/climate/safeguarding/. Accessed: April 2019.

[125] NRC. 2012. National Research Council of the National Academies: Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources and Ocean Studies Board; Division of Earth and Life Studies. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Available at: http://www.nap.edu/read/13389/chapter/1. Accessed: April 2019.

[126] National Academies of Sciences Engineering and Medicine. 2012. California Sea Level Projected to Rise a Higher Rate than Global Average; Slower Rate for Oregon, Washington, But Major Earthquake Could Cause Sudden Rise, June 22. Available at: http://www8.nationalacademies.org/onpinews/newsitem.aspx?recordid=13389. Accessed: April 2019.

[127] Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). 2010. State of California Sea-Level Rise Interim Guidance Document, October. Available at: http://www.opc.ca.gov/webmaster/ftp/project_pages/Climate/SLR_Guidance_Document.pdf. Accessed: April 2019.

percentages of airport shuttle fleets to be zero-emission vehicles (battery electric or fuel cell): 33 percent by the end of 2027, 66 percent by the end of 2031, and 100 percent by the end of 2035.[128]

Other Regulations or Policies

Senate Bill X7 7 (Water Conservation Act of 2009)

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20% by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per-capita water use by at least 10% by December 31, 2015. Reduction in water consumption directly reduces the necessary energy and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011 that sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

Senate Bill 471 (Water, Energy, and Reduction of GHG Emissions: Planning)

AB 32 designated CARB as the agency that would manage the GHG Reduction Fund. Senate Bill 471, introduced in February 2015 and amended in August 2015, denotes that GHG emissions reductions associated with water treatment are eligible for funding from the GHG Reduction Fund. SB 471 requires the State Energy Resources Conservation and Development Commission, State Water Resources Control Board, State Air Resources Board, Public Utilities Commission, and Department of Water Resources to cooperate in conducting a study on water-related energy use in California.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code Sections 40000 et seq.) requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; and (2) diversion of 50 percent of all solid waste on and after January 1, 2000, through source reduction, recycling, and composting facilities.[129] Additionally, jurisdictions are not prohibited from implementing source reduction, recycling, and composting activities designed to exceed these requirements.[130]

Assembly Bill 341 (2011) (AB 341) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020, and annually thereafter.[131] In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to

[128] ARB. 2018. Proposed Regulation Order for the Proposed Zero-Emission Airport Shuttle Regulation. Available at: https://www.arb.ca.gov/regact/2019/asb/appa.pdf?_ga=2.255035912.1469842448.1555030954-893091953.1554304459. Accessed: April 2019.

[129] Cal. Pub. Res. Code § 41780(a).

[130] Cal. Pub. Res. Code § 41780(b).

[131] Cal. Pub. Res. Code § 41780.01(a).

achieve the State's policy goal.[132] CalRecycle conducted several stakeholder workshops and published a discussion document in May 2012 titled California's New Goal: 75 Percent Recycling, which identifies concepts that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.[133]

2.4.5 Regional

2.4.5.1 BAAQMD Regional Climate Protection Strategy Resolution

On November 6, 2013, the Bay Area Air Quality Management District (BAAQMD) Board passed a resolution adopting a regional GHG reduction target of achieving 80% below 1990 levels of GHG emissions by 2050. This reduction goal matches that of Executive Order S-3-05, described earlier. In addition, the resolution committed the BAAQMD to develop a regional climate protection strategy, including a Bay Area climate protection work program to be included as an element of the BAAQMD's Clean Air Plan.[134] The 2017 Clean Air Plan was adopted by the BAAQMD Board on April 19, 2017. The 2017 Clean Air Plan includes a wide range of control measures, including improving fossil fuel combustion efficiency at oil refineries, power plants, and cement plants, reducing methane emissions from landfills and oil and gas production and distribution, advancing electrical vehicles, promoting clean fuels, supporting solar, and making new and existing buildings more energy efficient.[135]

2.4.5.2 ABAG/MTC Sustainable Communities Strategy (SB 375)

As discussed above, SB 375 is intended to help achieve AB 32's goals by coordinating land use and transportation planning, along with funding priorities. SB 375 requires each MPO in California to develop an SCS as part of its RTP that will achieve the GHG reduction targets required by AB 32. As described above, the MTC and the ABAG developed an SCS for the San Francisco Bay Area and incorporated it and a new RTP into a "Plan Bay Area." On July 27, 2017, MTC and ABAG updated the plan to Plan Bay Area 2040, which focuses on accommodating the 820,000 projected new households and 1.3 million jobs from 2017-2040. The Plan includes seven goals and thirteen performance targets to measure the plans effectiveness. This includes the goals of SB 375 to 1) reduce per-capita CO_2 emissions from cars and light-duty trucks, and 2) provide sufficient housing for the entire region's projected population growth, regardless of income.

2.4.6 Local

2.4.6.1 Climate Smart San Jose (formerly Green Vision)

Climate Smart San Jose was approved in February 2018 by the City Council to replace the San Jose Green Vision Sustainability Plan. Climate Smart San Jose builds on the 15-year Green Vision sustainability plan by charting a path to achieve the GHG emissions reductions contained in the international Paris Agreement on climate change. Climate Smart San Jose focuses on energy, mobility, and water with nine key strategies.

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[132] Cal. Pub. Res. Code § 41780.02.

[133] CalRecycle. 2018. California's 75 Percent Initiative Defining the Future. Available at: https://www.calrecycle.ca.gov/calendar/75percent. Accessed: April 2019.

[134] BAAQMD. 2013. Air District Board passes climate protection resolution. Available at: http://www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2013/climateres_131106.ashx?la=en. Accessed: April 2019.

[135] BAAQMD. 2017. Spare the Air and Cool the Climate: Final 2017 Clean Air Plan. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed: April 2019.

2.4.6.2 Envision San Jose 2040

On November 1, 2011, the Envision San Jose 2040 General Plan was adopted in compliance with the State law requirement that each city and county prepare and adopt a comprehensive and long-range general plan for its physical development (California Government Code Section 65300). Envision San Jose 2040 was more recently amended on February 27, 2018 and represents the City's assessment of the amount, type, and phasing of development needed to achieve its social, economic, and environmental goals.

3. GHG EMISSIONS METHODOLOGY AND INVENTORY

This section describes the methodologies Ramboll used to develop the GHG emissions inventories, which include construction and operational emissions.

3.1 Scenarios Evaluated

3.1.1 Construction Scenarios Evaluated

Ramboll evaluated GHG emissions associated with the construction of the Proposed Project. The Proposed Project would construct new development as defined in Project Phasing for Proposed Major Amendment to Airport Master Plan. These projects aim to improve SJC's airfield, terminals, parking garages, air cargo facilities, and general aviation and aviation support facilities. Lists of the landside and airside projects proposed under the amended Master Plan are provided in **Table 3.1-1** and **Table 3.1-2**, respectively. Construction activities would take place from 2019 through 2037. Construction emissions depend on the activity levels of heavy-duty construction equipment, truck haul trips, and vehicle trips made by construction workers and vendors traveling to and from the Proposed Project site.

Additionally, Ramboll also calculated emissions associated with the construction of the previously authorized but unbuilt/incomplete projects under the Existing Approved Master Plan. These projects are listed in **Table 3.1-1** and **Table 3.1-2** and described in a narrative format in **Table 3.1-3**.

3.1.2 Operational Scenarios Evaluated

Ramboll evaluated GHG emissions for four Scenarios in this technical report:

1. Baseline/Existing – calculated existing Airport emissions in year 2018
2. Proposed Project – calculated Airport emissions in year 2037, after completion of all Master Plan Projects
3. No Project/No New Facilities – calculated Airport emissions in year 2037, assuming no new facilities have been constructed
4. No Project/Buildout under Existing Approved Master Plan – calculated Airport emissions in year 2037, assuming only those facilities approved in the existing Master Plan have been constructed

Scenarios 3 and 4 are considered Project Alternatives. Operational emissions depend on airport activity levels (forecasted number of air passengers, tons of air cargo, and general aviation activity), and facilities operations. Activity levels for each scenario are shown in **Table 3.1-4**. As shown, the activity levels at the Airport under Scenarios 2, 3, and 4 (all for year 2037) will be identical. Airport-related emissions will vary between these Scenarios, however, because of differences in the facilities that are assumed to be in place under each Scenario.

3.2 Units of Measurement

In many sections of this technical report, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category. In this report, a metric ton refers to a tonne (1,000 kilograms). Additionally, exact totals presented in all tables and report sections may not equal the sum of components due to independent rounding of numbers.

3.3 Indirect GHG Emissions from Electricity Use

The indirect GHG emissions created as a result of electricity use are based on the following methodology. This methodology applies to both construction and operational uses of electricity.

Indirect emissions, such as when electricity is used in a building, are typically due to electricity generation from offsite power plant locations. SJC is expected to receive electricity from San Jose Clean Energy (SJCE), which is a newly established Community Choice Aggregation (CCA) program for the City of San Jose.[136,137] Electricity sourced by SJCE is expected to be 80 percent carbon free, with options to upgrade to 100 percent renewable energy. While SJCE will source cleaner energy from various carbon-free options like solar, wind, and hydropower, it is expected to supply the electricity to the California State's electricity grid, which will then be transmitted and delivered by Pacific Gas & Electric (PG&E).[138]

Since SJCE was just recently created, CO_2 emission factors for electricity usage are obtained from PG&E to calculate GHG emissions from electricity usage. Electricity intensity factors are the amount of electricity per unit, such as kWh used per square foot of building. Emission intensity factors are GHG emission rates from a given source relative to the intensity of a specific activity in term of the amount of GHG released per megawatt of energy produced. The default electricity intensity for PG&E in California Emissions Estimator Model (CalEEMod®) for CO_2, CH_4, and N_2O are 641.35, 0.029, and 0.006 pounds (lb) per megawatt-hour (MWh), respectively. The CO_2 default factor is based on 2008 emission factor listed in CARB's May 2010 Local Government Operations Protocol (LGO). The CH_4 and N_2O default factors are based on 2012 E-Grid for California (2009 inventory) values.

For this Proposed Project, the CalEEMod® CO_2 intensity factor is modified based on the average of 2014, 2015, and 2016 PG&E factors to account for the RPS as presented in **Table 3.3-1**. The intensity factors for total energy delivered were calculated by multiplying the percentage of energy delivered from non-renewable energy by the CO_2 emissions per total non-renewable energy metric calculated. Total energy delivery and total CO_2 emissions are provided in the PG&E Climate Registry and Power Utility Protocol (PUP) Reports. The CO_2 intensity factor presented in this analysis is consistent with the 60% RPS for 2030 and 100% RPS for 2045. This analysis uses an average of 79% RPS for calendar year 2037. Use of the PG&E default electricity emission factor is conservative because the CCA is and will provide 80% carbon free energy. The estimate provided here, and the PUP reports issued by PG&E, assume that renewable energy sources do not result in any CO_2 emissions. CalEEMod® emission intensity factors for CH_4 and N_2O were used for this Proposed Project as a conservative estimate for these emissions.

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[136] Based on US EPA, Community Choice Aggregation (CCA) are programs that allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider. Available at: https://www.epa.gov/greenpower/community-choice-aggregation. Accessed: April 2019.

[137] San Jose Clean Energy was created in May 2017 and began servicing residents and businesses in February 2019. Available at: https://www.sanjosecleanenergy.org/about. Accessed: April 2019.

[138] City of San Jose. Community Energy, San José Community Energy Department. Available at: http://www.sanjoseca.gov/index.aspx?NID=5119. Accessed: April 2019.

3.4 Construction Emissions

Proposed Project construction would generate GHG emissions through the use of construction equipment, truck haul trips, and construction workers and vendors traveling to and from the Proposed Project site. The assessment of construction air quality impacts considers each of these sources and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation. This section describes the methodologies used to quantify GHG emissions from construction of the Proposed Project.

3.4.1 California Emissions Estimator Model

To quantify emissions from landside construction improvements (i.e., parking garage, terminal expansion, hotel), Ramboll utilized the CalEEMod® Version 2016.3.2.[139] The major construction phases included in this analysis are:

- Demolition: involves demolishing/removing existing buildings.
- Site Preparation: involves clearing vegetation (grubbing and tree/stump removal) and stones prior to grading.
- Grading: involves the cut and fill of land to ensure the proper base and slope for the construction foundation.
- Paving: involves the laying of concrete or asphalt such as in parking lots or roads.
- Building Construction: involves the construction of structures and buildings.
- Architectural Coating: involves the application of coatings to both the interior and exterior of buildings or structures. (Not relevant to GHG emissions)

CalEEMod® calculates emissions for projects located in California and was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts. CalEEMod® utilizes widely accepted models for emissions estimates combined with appropriate default data that can be used if site-specific information is not available. For example, CalEEMod® incorporates the USEPA AP-42 emission factors,[140] CARB's on-road and off-road equipment emission models such as EMission FACtor model (EMFAC) 2014 model and OFFROAD2011, and studies commissioned by California agencies, such as the California Energy Commission and CalRecycle. OFFROAD is an emission factor model used to calculate emission rates from off-road mobile sources (e.g., construction equipment, agricultural equipment).[141] EMFAC is an emission factor model used to calculate emissions rates from on-road vehicles (e.g., passenger vehicles).[142] CARB released

[139] CAPCOA. California Emissions Estimator Model® version 2016.3.2. Available at: http://www.caleemod.com/. Accessed: April 2019.

[140] The USEPA maintains a compilation of Air Pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors. Accessed: April 2019.

[141] ARB. 2017. Mobile Source Emissions Inventory – Off-Road Diesel Vehicles. Available at: http://www.arb.ca.gov/msei/msei.htm. Accessed: April 2019.

[142] ARB. 2017. Mobile Source Emissions Inventory – On-Road Motor Vehicles. Available at: http://www.arb.ca.gov/msei/modeling.htm. Accessed: April 2019.

EMFAC2017 version in March 2018, however these factors were not incorporated for construction related on-road emissions.

As for the CalEEMod® default values and existing regulation methodologies, the program is set to be customized for use in each specific local air district region. Appropriate statewide default values also can be utilized if regional default values are not defined. Here, Ramboll used default factors for the Santa Clara County area that is within the BAAQMD jurisdiction for the emission inventory, unless otherwise noted in the methodology descriptions below. Details regarding the specific methodologies used by CalEEMod® can be found in the CalEEMod® User's Guide and associated appendices.[143]

The CalEEMod® output files are provided for reference in **Appendix A** to this report.

3.4.2 Airport Construction Emissions Inventory Tool

To calculate emissions from the construction of airside (runway and taxiway) improvements, Ramboll utilized the Airport Construction Emissions Inventory Tool (ACEIT) developed by the Airport Cooperative Research Program of the Transportation Research Board. ACEIT models emissions from site preparation, building, asphalt and concrete paving work and batching, material delivery, construction employee work commute, and painting/striping. ACEIT default emission factors for non-road (off-road) construction activities and on-road vehicles are based on the USEPA's NONROAD and MOVES models, respectively.[144] For purposes of this Technical Report analysis, Ramboll replaced these defaults with California-specific emission factors from CARB's OFFROAD2017 (same as OFFROAD2011) for off-road equipment and from CalEEMod® for on-road vehicles (based on EMFAC2014).

3.4.3 Construction Emissions Inventory Summary

Table 3.4-1 and **Table 3.4-2** presents the GHG emissions associated with construction of landside and airside projects, respectively. **Table 3.4-3** summarizes the total GHG emissions for construction of the Proposed Project, which are estimated at approximately 16,644 MT CO_2e.

Table 3.4-4 presents GHG emissions associated with the construction of projects under the Existing Approved Master Plan. As shown therein, of the total 16,644 MT CO_2e of construction-related emissions reported in previous tables, approximately 13,205 MT CO_2e pertain to improvements previously analyzed and authorized under the Existing Approved Master Plan.

3.5 Operational Emissions

Operation of the Proposed Project and each of the Scenarios would result in air emissions from a variety of sources, including aircraft, auxiliary power units (APUs), ground support equipment, new built environment attributes (e.g., hotel, parking garages, expansion of terminal buildings and other airport facilities), and on-road mobile sources on Airport property. This section describes the methodologies used to quantify annual operational GHG emissions from these sources.

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[143] CAPCOA. California Emissions Estimator Model®, User's Guide for CalEEMod® Version 2016.3.2. Available at: http://www.caleemod.com/. Accessed: April 2019.

[144] Transportation Research Board. Guidance for Estimating Airport Construction Emissions. Available at: http://www.trb.org/main/blurbs/170234.aspx. Accessed: April 2019.

3.5.1 Aviation Environmental Design Tool

Ramboll primarily used the Aviation Environmental Design Tool (AEDT) to assist in quantifying operational GHG emissions for the Airport. AEDT is a combined emissions and dispersion model for assessing air quality at civilian airports and military air bases.[145,146] The model was developed by the FAA in cooperation with the United States Air Force. The model is used to produce an inventory of emissions generated by sources on and around the airport or air base, and to calculate pollutant concentrations in these environments.

AEDT performs two primary functions for evaluating air quality: generating emissions inventories and performing dispersion analyses. (AEDT's other main functionality is to perform a noise analysis.) AEDT calculates GHG emissions for several types of airport sources, based on aircraft engine performance, times in mode, and landing-takeoff cycles (LTOs), by engine type, for each inventory. AEDT incorporates both USEPA-approved emissions inventory methodologies and dispersion models to ensure that analyses performed with the application conform to USEPA guidelines. The AEDT setup used to calculate GHG emissions is consistent with that used to assess noise impacts for the Baseline and Project scenarios. **Table 3.5-1** contains a listing of aircraft types, category and engine assignments modeled in AEDT, while **Tables 3.5-2a and 3.5-2b** contains operational parameters input to AEDT.

Ramboll specifically utilized AEDT to quantify GHG emissions from aircraft operations. GHG emissions from GSEs were calculated based on baseline fuel use and AEDT operating hours. As explained below, AEDT does not calculate GHG emissions from auxiliary power units (APUs). Details of the emissions calculations for each of these source types are described in the sections below.

3.5.2 Aircraft

Aircraft operational emissions are based on Proposed Project-specific projections of aircraft landings and takeoffs,[147] and modeled using AEDT.

Ramboll specifically utilized AEDT to quantify GHG emissions from aircraft. The aircraft data included 89 potential aircraft types, as summarized in **Table 3.5-1**, which identifies aircraft classifications and engine types included in the technical report's AEDT inventories. Given the length of this planning timeframe (i.e., through 2037), it is assumed that there will be some fleet turnover and introduction of newer and next generation aircraft, which are anticipated be more fuel efficient and produce less emissions. **Table 3.5-2a** shows the aircraft fleet mix for the Baseline scenario and **Table 3.5-2b** shows the assumed aircraft fleet mix forecasted for the Proposed Project scenario. Note that this analysis does not explicitly account for the ICAO and USEPA programs to reduce aircraft emissions. While it is expected that these will help reduce emissions, it was not possible to quantify the benefits of these at this time.

Emissions were calculated based on AEDT default emission factors by aircraft type and AEDT default calculations for aircraft performance and times-in-mode (e.g., ground roll, takeoff, climbout, and approach). Stage length (a measure of how far the aircraft flies) is a required

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[145] Federal Aviation Administration. Aviation Environmental Design Tool (AEDT). Available at: https://aedt.faa.gov/. Accessed: April 2019.

[146] AEDT replaced the FAA's Emissions and Dispersion Modeling System (EDMS) as of May 2015.

[147] The aircraft fleet mix is based on mapping for SJC using forecasts from Mineta-San Jose International Airport Master Plan Demand Forecast Update Technical Report, HNTB Corporation, June 2, 2017 prepared for the FAA's 2017 RIM study.

input for departing aircraft operations as it influences the weight of the aircraft at takeoff and affects takeoff and climbout performance (and, consequently, emissions produced from these operations). Assumptions on stage length for departing aircraft are tabulated in **Table 3.5-2a** and **Table 3.5-2b** and are based on actual operations in 2018 and are consistent with those used in the noise analysis. Taxi time for all arriving aircraft (taxi-in time) was set to 4 minutes and 35 seconds; taxi time for departing aircraft (taxi-out time) was set to 13 minutes and 43 seconds. Average taxi-in and -out times were obtained from the Federal Aviation Administration's Aviation System Performance Metric (ASPM) database for actual operations at SJC in 2018. The taxi times for the Proposed Project scenario were assumed to be the same as those in the Baseline scenario.

Aircraft-related GHG emissions for each of the Scenarios are provided in **Tables 3.5-3**. **Appendix B** lists GHG emissions by aircraft type for the 2018 and 2037.

3.5.3 Auxiliary Power Units

AEDT does not estimate GHG emissions from APUs. Based on engineering estimates, Ramboll determined that APU emissions would not constitute more than 1% of the overall GHG inventory. Further, while at the gates, aircraft currently use electricity provided by SJC; this practice will be continued so aircraft do not use their APUs at the gates.

3.5.4 Ground Support Equipment

Emissions from GSE equipment, including air conditioners, air starts, aircraft tractors, baggage tractors, belt loaders, cabin service trucks, cargo loaders, carts, catering trucks, fork lifts, fuel trucks, generators, ground power units, hydrant trucks, lavatory trucks, lifts, service trucks and water trucks, were calculated.

AEDT does not estimate GHG emissions for GSE; therefore, Ramboll calculated emissions for GSE based on SJC fuel use records for 2018 using the USEPA's fuel-based GHG emission factors.[148] AEDT contains default aircraft GSE assignments for fuel type, operating time, horsepower and load factor. Project (2037) fuel use was scaled from baseline (2018) using the operating hours calculated in AEDT for each fuel type. Electrification conservatively was assumed to be constant between the two scenarios. These data were used to determine overall GSE usage for SJC per year.

Table 3.5-4 presents the GHG emissions attributable to GSE.

3.5.5 Mobile Sources

The emissions inventory includes several types of mobile sources. Vehicles associated with the Airport's day-to-day operations include landside and airside vehicles owned and operated by the Airport and by third parties, such as on-site maintenance trucks, shuttle services, employee and passenger transportation, and other off-road equipment not included in GSE above. The emissions are based on site-specific data, including a list of equipment/vehicles, horsepower or model year, annual mileage/operating hours, fuel type, and fuel consumption totals.

3.5.5.1 Passenger and Worker Traffic

Ramboll calculated emissions from traffic (including parking lot traffic) by utilizing trip generation rates and vehicle miles travelled for airport-related vehicle transportation.

[148] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf. Accessed April 2019.

Ramboll utilized EMFAC2017 emission factors and average EMFAC2017 fleet mixes for each Phase year (2018 and 2037). CARB has released an updated EMFAC2017 version that includes various updates, notably the incorporation of USEPA and ARB regulations and standards (e.g., Advanced Clean Cars and the Truck and Bus Rule). To more accurately assess the mobile GHG emission inventories, EMFAC2017 was incorporated into the analysis. **Table 3.5-5** provides an overview summary of the trip generation and vehicle miles travelled. **Table 3.5-6** summarizes the default fleet mix for each Phase year and **Table 3.5-7** summarizes the EMFAC2017 emission factors that were used. **Table 3.5-8** summarizes the terminal traffic-related GHG emissions for the Proposed Project.

3.5.5.2 Airport Shuttle Buses

SJC currently has 10 shuttle buses running on compressed natural gas (CNG) fuel. **Table 3.5-9** summarizes the airport shuttle bus GHG emissions for Baseline scenario. It is expected that the shuttle buses would be electrified in the future years. **Table 3.5-10** summarizes emissions from electrified buses in CY 2037.

3.5.5.3 SJC-Owned Airside Equipment

Ramboll calculated GHG emissions from SJC owned and operated (non-GSE) off-road equipment by utilizing fuel consumption data for SJC. These equipment include sweepers, mowers, runway closure markers and generators which are powered by diesel and gasoline fuels. **Table 3.5-11** presents the GHG emission calculations for this source type, based on the USEPA's fuel-based GHG emission factors.[149]

3.5.6 Stationary Sources

Ramboll calculated emissions for stationary source equipment, including heaters/boilers and emergency generators.

3.5.6.1 Boilers

The majority of natural gas consumption at the Airport occurs in three natural gas-fired boilers in the Central Plant. Two boilers are rated at 8.0 million British Thermal Units per hour (MMBtu/hour) and one boiler is rated at 5.2 MMBtu/hour. Natural gas usage at the Central Plant was based on utility readings for 2018. GHG emissions were calculated based on emission factors from the USEPA's "Emissions Factors for Greenhouse Gas Inventories".[150] Fuel usage for 2037 was scaled by the change in annual passengers at the Airport. **Table 3.5-12** summarizes the emissions from the boilers.

3.5.6.2 Miscellaneous Natural Gas Combustion

A small portion of natural gas consumption occurs in miscellaneous sources at the Airport. These could include sources such as small furnaces, small water heaters, and kitchens. Natural gas usage for non-Central Plant uses was based on utility readings for 2018. GHG emissions were calculated based on emission factors from the USEPA's "Emissions Factors for

[149] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf. Accessed April 2019.

[150] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf. Accessed April 2019.

Greenhouse Gas Inventories".[151] Fuel usage for 2037 was scaled by the change in annual passengers at the airport. **Table 3.5-13** summarizes the emissions from this source.

3.5.6.3 Emergency Generators

There are 20 diesel-fired emergency generators and fire pumps at the Airport. Operating hours and horsepower for each generator in 2018 was used for the emission calculations. GHG emissions were calculated based on diesel emission factors from 40 CFR Part 98 (Federal Mandatory Reporting Rule). It is expected that emergency generator operations will not increase with the Proposed Project as additional aircraft activity and passengers would not warrant additional emergency operations. **Table 3.5-14** summarizes the emissions from emergency generators.

3.5.7 Electricity

Ramboll calculated GHG emissions from electricity based on Baseline/Existing (2018) data for SJC and the projected increase in passengers, as shown in **Table 3.5-15**. (GHG emissions from natural gas combustion are reflected in the calculation of Stationary Source emissions, as discussed above in **Section 3.5.6**.). Based on these parameters, Ramboll calculated purchased utility demand for the Proposed Project, as shown in **Table 3.5-16**.

Table 3.5-17 lists the purchased electricity calculations and supporting emission factors used for the Proposed Project's GHG emissions inventory. The derivation of the electricity emission factors is described in **Section 3.3** and **Table 3.3-1**. For the Proposed Project, CO_2e emissions from purchased electricity are shown in **Table 3.5-17**.

3.5.8 Water Supply, Treatment and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water, as well as the sources of the water. Additional emissions from wastewater treatment include CH_4 and N_2O, which are emitted directly from the wastewater.

Ramboll calculated GHG emissions from water based on Baseline/Existing (2018) data for SJC and the projected increase in passengers, as shown in **Table 3.5-15**. Based on these parameters, Ramboll calculated purchased utility demand for the Proposed Project, as shown in **Table 3.5-16**.

Table 3.5-18 summarizes the Proposed Project's water usage and associated GHG emissions. Water demand values were calculated based on the Baseline/Existing (2018) conditions and the increase in passengers for the Proposed Project. Ramboll also used CalEEMod® default assumptions for average embodied energy[152] for Northern California, which are based on analyses by the CEC. For the Proposed Project, CO_2e emissions from water are shown in **Table 3.5-18**, using the electricity emission factors from **Table 3.3-1**.

3.5.9 Solid Waste

Municipal solid waste (MSW) is the amount of material that is disposed of by landfilling, recycling, or composting. CalEEMod® calculates the indirect GHG emissions associated with

[151] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf. Accessed: April 2019.

[152] Embodied energy refers to the amount of energy that was used in delivering water to the specific land use.

waste that is disposed of at a landfill in quantities that are based upon land use type according to waste disposal studies conducted by CalRecycle.

Table 3.5-19 summarizes non-recycled solid waste generation predictions, as well as resulting Project GHG emissions. The emission estimates for the Proposed Project were based on the Baseline/Existing (2018) conditions solid waste generation data, which was used to calculate the waste generated per passenger. The Proposed Project emissions were based on that ratio and the increases in passengers presented in **Table 3.5-15** and projected to 2037 in **Table 3.5-16**.

The analysis assumes that additional waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting to meet the statewide goal of 75% waste diversion.[153] The remainder of the waste not diverted is assumed to be disposed at a landfill. Currently, the solid waste diversion rate is 84.6%, which exceeds the statewide goal.

GHG emissions associated with non-landfill diverted waste streams are not considered, because it is generally assumed that these diversions do not result in any appreciable amounts of GHG emissions when operated effectively.[154] These waste diversion alternatives may result in differences in life-cycle emissions of GHGs, but it is not appropriate to combine life-cycle emissions for only one category of emissions.[155]

3.5.10 Operational Emissions from Hotel Land Use

Since the hotel is a new land use type proposed for the Airport's property, emissions associated with the hotel operations were calculated separately using CalEEMod® defaults. GHG emissions for area, energy, mobile, water, and solid waste sources are provided in **Table 3.5-20**.

3.5.11 Operational Emissions Inventory Summary

Baseline/Existing (2018) GHG emissions were calculated using the methodologies described in the sections above. The Baseline/Existing (2018) inventory incorporated data for actual airport operations, including aircraft, vehicle, equipment, fuel use, and utility usage from July 2017 to June 2018. Baseline/Existing (2018) GHG emissions are presented in **Table 3.5-21** and total approximately 257,805 MT CO_2e/year.

Proposed Project GHG emissions are presented in **Table 3.5-22** and total approximately 388,102 MT CO_2e/year. When compared to the Baseline/Existing (2018) GHG emissions reported in **Table 3.5-21**, the Proposed Project would increase emissions in the 2037 build-out year by approximately 130,297 MT CO_2e/year. **Figure 2** presents a bar chart to show the allocation of emission sources within the Baseline/Existing and Future Year scenario, and **Figure 3** presents a bar chart to show Proposed Project (incremental) scenario.

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[153] CalRecycle. 2018. California's 75 Percent Initiative Defining the Future. Available at: https://www.calrecycle.ca.gov/calendar/75percent. Accessed: April 2019.

[154] ARB. 2010. Local Government Operations Protocol. Chapter 9.4. Available at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf. Accessed: April 2019.

[155] This inventory represents scope 1 and 2 emission categories. A life-cycle analysis of waste diversion would be a scope 3 inventory. ARB's Local Government Operations Protocol Version 1.1 (May 2010) clearly states that scope 3 emissions should not be combined with scope 1 and 2 emissions.

4. SIGNIFICANCE THRESHOLDS

To preface, there are no widely-established or readily accepted thresholds of significance for GHG emissions for airport-related projects. Additionally, a quantitative threshold of significance for GHG emissions was not identified in the 2009 or 2018 amendments to the State CEQA Guidelines. Rather, these amendments allow lead agencies the discretion to establish their own significance thresholds, provided such thresholds are supported by substantial evidence.

Specifically, State CEQA Guidelines section 15064.4[156] discusses the significance evaluation for GHG emissions. Section 15064.4(a) recognizes that the "determination of the significance calls for a careful judgment" by the lead agency that is coupled with lead agency discretion to determine whether to (1) quantify greenhouse gas emissions resulting from a project,[157] and/or (2) rely on a qualitative analysis or performance based thresholds. Section 15064.4(b) states that a lead agency should focus analysis on the incremental contribution of the project's emissions to climate change, and that a project's incremental contribution may be cumulatively considerable even if it appears small compared to statewide, national, or global emissions. Section 15064.4(b) further states that a lead agency should consider the following, non-exclusive list of factors when assessing the significance of GHG emissions:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. The extent to which project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.[158]

In addition, Appendix G to the State CEQA Guidelines contains two criteria for purposes of assessing GHG emissions.[159] These include if the Project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (comparable to State CEQA Guidelines Section 15064.4(b)(1)-(2));
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (same as State CEQA Guidelines Section 15064.4(b)(3)).

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[156] CNRA. 2018. Final Adopted Text of the 2018 Amendments and Additions to the State CEQA Guidelines. Available at: http://resources.ca.gov/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf. Accessed: April 2019.

[157] Ibid. Section 15064.4(c) states that a lead agency may use a model or methodology of its discretion to estimate greenhouse gas emissions resulting from a project. The selection of the model or methodology must be supported with substantial evidence.

[158] Ibid. Section 15064.4(b).

[159] Ibid. Appendix G Environmental Checklist Form.

In accordance with CEQA Guidelines section 15064.4(b) and the Appendix G criteria, this technical report discloses the extent to which the Proposed Project and the No Project Scenarios increase emission levels relative to existing emission levels associated with operations at SJC (see **Section 5.1** for this discussion). This report also assesses the significance of the Proposed Project's GHG emissions based on consistency with state, regional, and local GHG reduction plans; AB 32 and its implementing Scoping Plan; and Executive Order S-3-05 which establishes state GHG reduction targets through 2050 (see **Section 5.2** for this discussion).

Note that while the BAAQMD established CEQA GHG significance thresholds to assess project operational impacts,[160] these thresholds are not applicable to airports. The stationary-source projects threshold adopted by BAAQMD is 10,000 MT CO_2e/yr. This threshold is not applicable to the Proposed Project since the great majority of GHG emissions associated with the airport operations are not associated with stationary sources, but are rather associated with aircraft and mobile sources. Similarly, the BAAQMD thresholds for land use development projects (1,100 MT CO_2e/yr and 4.6 MT CO_2e/service population/yr) are not facially applicable to airports, particularly given the complete lack of consideration of aviation in the development of these draft thresholds.

[160] BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: April 2019.

5. INVENTORY IN CONTEXT

This section assesses the significance of the Proposed Project's emissions for purposes of CEQA. It is important to acknowledge that the Proposed Project does not necessarily create entirely "new" GHG emissions, since the Proposed Project does not itself create the additional demand for passenger air travel. Rather, the additional demand will result from the projected growth of jobs and housing in the region per the approved general plans of the cities and counties.

Additionally, if a passenger does not travel through SJC, residents of Santa Clara County and nearby regions are likely to divert to other facilities in the region to satisfy their air travel needs. This diversion of workers and residents to other facilities, such as San Francisco International Airport and Oakland International Airport, would likely result in additional vehicle travel on the regional roadway system, which could result in additional congestion, VMT, and emissions for these longer distance trips. In other words, there is an inherent efficiency to meeting the demand for aviation-related services in a local setting.

For purposes of this analysis, emission sources that are not under the jurisdictional authority of the City of San Jose are included. The primary example of such emissions are those from aircraft operations because, under federal deregulation, the City does not control the numbers of flights at SJC and has no authority to regulate the emissions from the operation of aircraft engines. (E.g., Section 233 of the federal Clean Air Act exclusively vests the authority to promulgate emission standards for aircraft and aircraft engines with the USEPA; states and other municipalities are preempted from adopting or enforcing any standard respecting aircraft engine emissions unless such standard is identical to the USEPA's standards.)

5.1 Project Emissions Inventory

State CEQA Guidelines, Appendix G, Section VIII, Question a)

> "Would the project generate greenhouse gas emissions, either directly or indirectly, that may a significant impact on the environment?"

As previously documented for the Baseline/Existing (2018) operational condition, the Airport currently emits approximately 257,805 metric tons (MT) of CO_2e per year (see **Table 3.5-21**). The Proposed Project would result in approximately 16,644 MT CO_2e from construction activities (see **Table 3.4-3**); these emissions would occur on a one-time (not annual) basis over the course of the construction period. Additionally, at its build-out operational year (2037), Airport-wide emissions are estimated to be approximately 388,102 MT CO_2e per year, indicating that the Proposed Project would result in an incremental increase to existing GHG emission levels of approximately 130,297 MT CO_2e per year (see **Table 3.5-22**). For informational comparison purposes, the Project's incremental percentage contribution to the existing international, national, state, and city GHG emission inventories are 0.0004%, 0.002%, 0.03%, and 0.15% respectively, as presented in **Table 5.1-1**.

The Project's incremental increase in operational Airport-wide GHG emissions is wholly attributable to GHG emissions resulting from the anticipated increases in the aircraft-operation levels, with aircraft emissions increasing from 139,083 MT CO_2e per year in 2018 to 270,977 MT CO_2e per year in 2037. Moreover, setting aside the "aircraft" source line in **Table 3.5-22**, GHG emissions in the Project's build-out year would be less than GHG emissions under Baseline/Existing (2018) conditions by approximately 1,597 MT CO_2e/year.

Table 3.5-22 specifically identifies anticipated reductions in GHG emissions, as compared to existing (2018) conditions, associated with passenger and employee transportation; airport shuttles; electricity consumption; and water.

The overall increases in construction- and operational-related GHG emissions for the Proposed Project would result in an obvious change to the existing environment. However, there is no scientific or regulatory consensus regarding what particular quantity of GHG emissions is environmentally significant. Further, no agency with regulatory authority and expertise, such as CARB or BAAQMD, has adopted numeric GHG thresholds for airports for purposes of CEQA. And, while global climate change is widely viewed as a cumulative problem warranting international treatment and regulation, no authoritative regulatory body has yet devised a numeric emissions cap that can be applied at the project level for airports. Nonetheless, in light of the Project's incremental increase in GHGs above existing levels (see CEQA Guidelines Section 15064.4(b)(1)) as a result of construction and operational emissions, the Project's incremental increase is considered significant.

The mitigation measure recommendations set forth in **Section 1.4** of this report, would serve to reduce the Project's incremental increase in operational GHG emissions. While not quantified, the Airport's commitment to EV charging stations would result in GHG emission reductions.

Even with implementation of the mitigation recommendations, the Project's incremental increase in GHG emissions is considered significant and unavoidable, particularly because the City of San Jose does not have the legal authority to regulate or reduce the GHG emissions from the operation of aircraft, which is the predominate contributor of additional GHG emissions resulting from the Project.

5.2 Consistency Analysis

State CEQA Guidelines, Appendix G, Section VIII, Question b)

> "Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?"

This section presents discussions of the Proposed Project's consistency with state, regional, and local GHG plans, policies, and regulations; AB 32; and Executive Order S-3-05.

5.2.1 State Reduction Strategies

Ramboll evaluated the Proposed Project's potential to impede or conflict with the state's GHG reduction strategies, including: the California Renewables Portfolio Standard as most recently amended by SB 100, Title 24, Assembly Bill 1109, CalGreen Building Code, AB 1493 (Pavley), the Low Carbon Fuel Standard, Advanced Clean Cars Program, SB 375, Senate Bill X7-7, IWMA and AB 341.

As shown in **Table 5.2-1**, the Project would be consistent with applicable state strategies for the reduction of GHG emissions.

5.2.2 Plan Bay Area 2040

Ramboll evaluated the Proposed Project's potential to impede or conflict with Plan Bay Area 2040, which is the San Francisco Bay Area's Sustainable Communities Strategy (SCS) developed pursuant to SB 375. It outlines the Bay Area's strategies for meeting the region's SB 375 goals. This includes the goals of 1) reducing per-capita CO_2 emissions from cars and light-duty trucks, and 2) providing sufficient housing for the entire region's projected population growth, regardless of income.

As shown in **Table 5.2-2**, the Proposed Project would be consistent with applicable strategies for the reduction of GHG emissions in Plan Bay Area 2040. Furthermore, the Airport's ongoing commitments to transportation-related emissions reduction measures will help support Plan Bay Area 2040 as a whole. Per **Section 1.3**, the Airport has many transit-oriented commitments including:

PDF-GHG-2 (Electrified Airport Shuttle Fleet). On May 3, 2019, San Jose commissioned the San Jose Airports 10 battery-electric shuttle buses, which previously ran on compressed natural gas fuel. This is 15 years ahead of CARB's Proposed Zero-Emission Airport Shuttle Regulation, which requires airport shuttle fleets to be 100% zero-emission vehicles (battery electric or fuel cell) by 2035.[161]

PDF-GHG-4 (Alternate-Fuel Maintenance Fleet). Since 2000, the Airport has adopted a policy to purchase only alternate-fuel vehicles for airport operations and maintenance fleet. Currently, 25% of the fleet is clean energy-powered as opposed to conventionally-powered vehicles.

PDF-GHG-5 (Construction Pollution Abatement). An ongoing effort of the Airport has been the implementation of a Construction Project Pollutant Emissions Abatement Program. This program requires measures to minimize emissions from vehicles and equipment to be included in all construction plans.

PDF-GHG-10 (Employee Transportation). Since 1998, the Airport has provided free bus/rail passes to employees which allows unlimited use of VTA's bus and light rail transit systems. By encouraging the 3,500+ of the airport to use transit systems reduces emissions of commuting and traffic in the area.

PDF-GHG-11 (Ground Transportation). The Airport provides a free shuttle bus service connecting to the Metro LRT Station and Santa Clara CalTrain Station, operating every 10-15 minutes to promote public transportation as a means of travel.

PDF-GHG-12 (Cell Phone Lot). A second cell phone waiting lot was completed in 2018 to encourage drivers picking up passengers to wait in the designated lot rather than circle the Airport.

PDF-GHG-13 (Electric Charging Stations). Construction of the initial station completed in 2001, progressively developing additional public electric vehicle stations to facility the use of EVs by drivers.

PDF-GHG-14 (Low- or Zero- Emission Taxis). Facilitated by a grant from the Airport and VTA, there is a requirement that at least 25% of all taxi/van trips to or from the Airport are to be by low- or zero-emission vehicles. Currently, 36% of the taxi fleet is alternate or clean-fuel powered vehicles.

PDF-GHG-15 (Commercial Vehicles). Implemented in the 1990s, a "Commercial Vehicle Trip Fee" which charges these types of vehicles for each trip they take to the Airport. This discourages unnecessary vehicles trips and endorses increased efficiency of each trip taken by the company.

[161] ARB. 2018. Proposed Regulation Order for the Proposed Zero-Emission Airport Shuttle Regulation. Available at: https://www.arb.ca.gov/regact/2019/asb/appa.pdf?_ga=2.255035912.1469842448.1555030954-893091953.1554304459. Accessed: April 2019.

PDF-GHG-16 (Taxi Dispatch). The Airport created a taxi dispatch system that requires taxis to park in designated areas until they are dispatched, which reduces engine idling and the emissions associated.

PDF-GHG-17 (Public Transport Education). Through the Airport's website and in the terminals, information on the public transit systems and information encourages usage of the transit systems which lowers emissions created by travelers.

5.2.3 Climate Smart San Jose

Ramboll evaluated the Proposed Project's potential to impede or conflict with Climate Smart San Jose. Climate Smart San Jose is the City's plan for reducing air pollution, conserving water, and creating a stronger and healthier community. Climate Smart San Jose builds on the 15-year Green Vision sustainability plan by charting a path to achieve the GHG emissions reductions contained in the international Paris Agreement on climate change. Climate Smart San Jose focuses on energy, mobility, and water with nine key strategies.

As shown in **Table 5.2-3**, the Proposed Project would be consistent with applicable strategies for the reduction of GHG emissions in Climate Smart San Jose.

5.2.4 Envision San Jose 2040

Ramboll evaluated the Proposed Project's potential to conflict with Envision San Jose 2040, the City of San Jose's General Plan. Envision San Jose centers on twelve Major Strategies that outline the city's plan for growth and taking on a growing environmental and economic leadership role.

As shown in **Table 5.2-4**, the Proposed Project would be consistent with applicable strategies for the reduction of GHG emissions in Envision San Jose.

5.2.5 Statewide Emissions Reduction Targets

Studies[162] have shown that, in order to meet the statewide 2050 reduction target, aggressive and economywide technological changes in the transportation and energy sectors, including electrification of the vehicle fleet and decarbonization of electricity and fuel sources, will be required among many other possible measures. One study[163] indicated that, even with these emerging technologies, the 2050 goal will not be met, due to the population growth to 55 million by 2050. A more recent study,[164] however, shows that the existing and proposed regulatory framework will allow the State to reduce GHG emissions to 40 percent below 1990 levels by 2030, and to 60 percent below 1990 by 2050. Even though this study did not provide a regulatory and technology roadmap to achieve the 2050 target, it demonstrated that various combinations of policies could allow statewide emissions to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the State to meet the 2050 target. The 2017 Scoping also discusses how "the State can reach our 2030 climate target to reduce greenhouse gas

[162] Lawrence Berkeley National Laboratory (LBL). 2011. California's Energy Future – The View to 2050. May. Available at: http://ccst.us/publications/2011/2011energy.php. Accessed: March 2019.

[163] LBL. 2013. Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model. Available at: http://eetd.lbl.gov/publications/estimating-policy-driven-greenhouse-g. Accessed: April 2019.

[164] Jeffery Greenblatt. 2015. Modeling California Impacts on Greenhouse Gas Emissions. Energy Policy. Volume 78, May 2015, pages 158-172. Abstract available at: http://www.sciencedirect.com/science/article/pii/S0301421514006892. Accessed: April 2019.

(GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels."[165]

Statewide efforts are underway to facilitate the State's achievement of its 2050 target and it is reasonable to expect the Proposed Project's emissions to decline as the regulatory initiatives identified by CARB in its Scoping Plan are implemented, new regulatory programs or incentives are implemented to reduce GHG emissions, and other technological innovations occur. Many of these initiatives include reducing the carbon content of motor fuels and fuels for electricity generation.[166] Reducing the carbon content of motor fuels and fuels for electricity generation will reduce CO_2e emissions from this project over time.

For example, CARB's 2014 First Update "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." And, many of the emission reduction strategies recommended by CARB would serve to reduce the Proposed Project's build out (2037) emissions level to the extent applicable by law:

- Energy Sector: Continued improvements in California's appliance and building energy efficiency programs and initiatives would serve to reduce the Proposed Project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the Proposed Project's emissions level.
- Transportation Sector: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the Proposed Project's emissions level.
- Water Sector: The Proposed Project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- Waste Management Sector: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the Proposed Project's emissions level.

In addition, it is important to note that the majority of the Project's GHG emissions are related to sectors that are covered by the California Cap-and-Trade program. Emissions from major GHG-emitting sources, such as electricity generation, fuel distributors (e.g., natural gas and propane fuel providers and transportation fuel providers), and large stationary sources are capped under the rules of the Cap-and-Trade program, and the majority of policy proposals developed by CARB and other State agencies pursuing GHG emissions-reducing strategies are designed to secure reductions from these sectors well into the future. If the Project emissions associated with these sectors are excluded, there are no categories that remain.

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[165] CARB, 2017. California's 2017 Climate Change Scoping Plan. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed: April 2019

[166] The extent to which GHG emissions from traffic at the project will change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that will be available and required to meet both regulatory standards and residents' needs. In addition, renewable power requirements, low carbon fuel standards, and vehicle emissions standards discussed above will all decrease GHG emissions per unit of energy delivered or per vehicle mile travelled.

California Energy Commission. 2007. State Alternative Fuels Plan. December. CEC-600-2007-011-CMF. Available at: http://www.energy.ca.gov/2007publications/CEC-600-2007-011/CEC-600-2007-011-CMF.PDF. Accessed: April 2019.

The Proposed Project's emissions total at build-out (2037) represents the maximum emissions inventory for the Proposed Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. Indeed, in light of the above, the Proposed Project's emissions at project buildout (2037) are reasonably anticipated to decline compared to the inventory presented in this report which is calculated in the absence of continued regulatory and technological advancements.

Further, the Proposed Project design itself advances many of the State's primary policies directed towards the reduction of GHG emissions. For example, the following Airport initiatives demonstrate the City's commitment to sustainability in the context of Airport operations:

- Construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve Leadership in Energy and Environmental Design (LEED) standards.
- Replace lighting at Airport facilities and in Airport buildings with energy-efficient lighting.
- Implement the San Jose Clean Energy Program at the Airport, in which electricity purchased for Airport facilities will be 45% renewables & 80% carbon free.
- Purchase only alternate-fuel vehicles for airport operations & maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet is powered by alternate fuel or other clean energy.
- Provide free bus/rail passes to employees to allow unlimited use of VTA's bus & light rail transit (LRT) systems.
- Provide a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station.
- Encourage public transit by disseminating information on public transit systems in Airport terminals and on Airport website.
- Use recycled water for toilet flushing and landscaping.
- Vegetation at the airport consists of primarily native and drought tolerant plants to reduce water use.
- Implement goal for Zero Waste by 2022 in airport operations. By implementing composting and recycling programs SJC is currently diverting 85% of waste from landfill trash.

Also of note, approximately 28 percent of the Proposed Project's emissions profile is attributable to non-aviation transportation-related emissions (e.g., emissions from passenger vehicles). The Proposed Project addresses that emissions source in that the SB 743 analysis prepared for the Proposed Project confirms that SJC's VMT/passenger in 2037 would not exceed the baseline (2018) VMT/passenger. Further, when viewed in the cumulative setting, the Proposed Project would reduce regional VMT as compared to regional VMT without the Proposed Project, illustrating the benefits of serving the region with increased passenger capacity through the Airport to avoid additional further travel to the other Bay Area Airports.

Nonetheless, because the Proposed Project would increase GHG emissions by approximately 51 percent, when compared to Existing/Baseline (2018) conditions, the Project would

potentially conflict with the State's efforts to reduce statewide GHG emissions through the State's 2050 planning horizon year.

5.2.6 Impact Determination

While the Proposed Project would represent an increase in GHG emissions when compared to the existing conditions on the Airport site, accommodating California's growing demand for aviation-related services at this Airport location is more efficient than exporting that demand to other regional airports. Further, as discussed above, the Proposed Project would not impede or conflict with the City's General Plan, Climate Smart San Jose, and Plan Bay Area 2040. However, the Project's incremental increase in GHG emissions would potentially conflict with statewide emission reduction targets, which strive to achieve long-range reductions in statewide emissions levels through 2050. See **Table 5.2-**2 for additional information. Therefore, the Project would result in a potentially significant impact in the context of Threshold 2 for GHG emissions in Appendix G, as discussed in **Section 4**.

Feasible mitigation measures are recommended in **Section 1.3** of this technical report and designed to reduce GHG emissions to the extent feasible. However, as discussed in **Section 5.1** above, the City of San Jose does not have the legal authority to regulate or reduce the GHG emissions from the operation of aircraft, which is the predominate contributor of additional GHG emissions resulting from the Project. Therefore, Project impacts are significant and unavoidable.

5.3 Alternatives

Since the operational activity levels, i.e. the number of annual aircraft operations and annual passengers, at the Airport are identical for all scenarios (see **Section 3.1.2** of this report), GHG emissions associated with the operations of No Project/No New Facilities (2037) scenario and No Project/Buildout under Existing Master Plan (2037) scenario are expected to be less than Proposed Project. Additionally, the Proposed Project contains various taxiway enhancements that could result in improved efficiency of aircraft movement at the airport, which could potentially lead to a reduction in taxi delays and lower operational GHG emissions relative to the two No Project alternatives.

However, the construction emissions under these scenarios would be different. Construction-related GHG emissions under No Project/No New Facilities (2037) scenario would be zero, as there would be no new construction of landside or airside projects at the Airport. The Construction-related GHG emissions under the No Project/Buildout under Existing Master Plan (2037) scenario would be lower than the Proposed Project (see **Section 3.4.3** of this report) because there would be fewer capital improvement projects.

TABLES

Table 1.3-1. Completed and Ongoing Emissions Reduction Measures at the Airport
Mineta San Jose International Airport
San Jose, California

Description of Measure	Comments	Status
Category #1: Airside Operations		
Construct 2nd air carrier runway by extending Runway 12L/30R from 4,400' to 11,000'	Improves airfield efficiency, reducing delays, idling, and queuing	Completed in 2001
Install ground power units, battery recharge facilities, and preconditioned air units at all terminal gates	Facilitates airline conversion of GSE to electric power & phaseout of diesel APUs/GPUs	Installation completed in 2010; phaseout of diesel-GSE by Southwest Airlines is complete
Implement reduced/single-engine taxiing by aircraft	All airlines are encouraged to perform single or reduced engine taxiing to the extent determined safe and efficient	Commenced in 1998 and is ongoing
Category #2: Buildings and Facilities		
Adopt policy to purchase only alternate-fuel vehicles for airport operations & maintenance vehicle fleet	Reduces emissions associated with conventionally-powered vehicles.	Commenced in 2000 and is ongoing. Currently, 25% of the Airport's vehicle fleet is alternate fuel or clean energy-powered
Implement a Construction Project Pollutant Emissions Abatement Program	Requires measures be included in all construction plans/specs to minimize emissions from construction vehicles and equipment	Ongoing
Demolish & replace fuel storage & fuel dispensing facilities	Reduces emissions associated with older fuel storage & handling equipment, as well as fuel truck movement on Airport roadways	Fuel dispensing facility & Phase 1 storage facility completed in 2010; capacity of fuel storage to be increased when warranted
Construct jet fuel pipeline from regional distribution facility to the Airport fuel storage facility	Eliminates emissions associated with trucks transporting jet fuel to the Airport	Completed in 2011
Replace lighting at Airport facilities and in Airport buildings	Energy-efficient lighting reduces emissions associated with generation of electricity	Ongoing
Implement a green cleaning policy at the Airport	Use of green-seal-certified cleaning products reduces emissions and improves indoor air quality	Ongoing
Consolidate all rental car operations to a new facility to be built adjacent to Terminal B.	Significantly reduces emissions associated with rental car vehicle movements and shuttle bus service to/from existing facility	Completed in 2010
Construct a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility	Generates zero-emissions electricity, providing 20% of the power used at the consolidated rental car facility	Completed in 2010
Implement *San Jose Clean Energy Program* at the Airport	Electricity purchased for Airport facilities will be 45% renewables & 80% carbon free	Initiated in Fall 2018
Construct new and upgraded terminal buildings to achieve Leadership in Energy and Environmental Design (LEED) standards	Reduces emissions from building heating & cooling, hot water heating, etc.; lower electricity use reduces offsite emissions	Construction of new North Concourse/Terminal B Phase 1 and upgraded Terminal A completed in 2010
Construct all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED standards	Reduces emissions from building heating & cooling, hot water heating, etc.; lower electricity use reduces offsite emissions	Commenced in 2007 and ongoing

Table 1.3-1. Completed and Ongoing Emissions Reduction Measures at the Airport
Mineta San Jose International Airport
San Jose, California

Description of Measure	Comments	Status
Category #3: Ground Transportation		
Provide free bus/rail passes to employees to allow unlimited use of VTA's bus & light rail transit (LRT) systems	Reduces emissions by encouraging transit use by all 3,500+ employees at SJC, including City, airline, rental car company, terminal concessionaire, and other Airport tenant employees	Commenced in 1998 and ongoing
Replace the Airport's diesel-powered shuttle bus fleet with CNG-powered buses	Reduces the Airport's total diesel exhaust emissions.	Completed in 2008 with purchase of 34 CNG-powered buses
Purchase electric-powered shuttle buses	Zero emission buses reduce Airport-generated emissions	Ten (10) buses delivered in February 2019
Upgrade on-Airport roadways and access, including new I-880/Coleman interchange, new SR 87/Skyport interchange, Airport Blvd. improvements at Coleman, Skyport, & Airport Pkwy entrances, and elimination of traffic signals	Lowers emissions and energy use from ground traffic by reducing congestion, delay, and queueing on roadways that serve the Airport	Completed in 2010
Provide free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station	Encourages transit use by all Airport users with buses running every 10-15 minutes from 5:30 a.m. to midnight daily	Commenced in 1998 and ongoing
Construct on-Airport CNG Fueling Station	Facilitates use of CNG-powered, low emission, vehicles including Airport shuttle buses. Open for public use.	Completed in 2003
Construct public electric vehicle (EV) charging stations	Reduces emissions by facilitating use of EVs	Initial station completed in 2001; additional stations in progress
Construct designated "cell phone waiting" public parking area	Reduces emissions by discouraging drivers picking up passengers from circling around the Airport	Completed in 2007; second cell phone waiting lot added in 2018
Require at least 25% of all taxi/van trips to/from the Airport to be by low- or zero-emission vehicles, to be facilitated by grants from Airport & VTA	Reduces emissions associated with conventionally-powered vehicles. Currently, 36% of the taxi fleet is alternate/clean-fuel powered	Commenced in 2005 and is ongoing
Implement a "Commercial Vehicle Trip Fee" to be charged for each trip to the Airport	Reduces emissions by eliminating unnecessary vehicle trips	Commenced in 1990s and is ongoing
Implement a taxi dispatch system that requires taxis to park in designated areas until dispatched	Reduces emissions associated with engine idling	Ongoing
Disseminate information on public transit systems in Airport terminals and on Airport website	Lowers emissions and energy consumption by encouraging transit usage	Ongoing

Table 3.1-1. Landside Construction Project Description
Mineta San Jose International Airport
San Jose, California

Project ID[1]	Construction Duration[1]	Project Description[2]		Land Area (acres)	Building Area (sqft)	Project Under Existing Master Plan[3]
T-4	2022 - 2023	Parking Structure	5,000 spaces	11.5	2,500,000	X
T-6 (part)	--	Remove City office structures at 1311 Airport Blvd. *(demolition activity only)*	11 TSF	0.25	11,000	X
T-8 (part)	2020 - 2021	Parking Structure	6,000 spaces	10.7	2,335,000	X
T-13	2024 - 2026 (gates 29-40)	Terminal B - 14 carrier gates, building space, and associated passenger processing facilities	375 TSF	4.6	375,000	X
	2033 - 2034 (gates 41-42)	Terminal B - 14 carrier gates, building space, and associated passenger processing facilities	375 TSF	4.6	375,000	X
T-16	2026 - 2027	Hotel	330 rooms	2.3	150,000	
		Hotel Parking	300 spaces	2.3	150,000	
C-2	--	Expand cargo airline facilities	35 TSF	4.6	35,000	X
C-3	2021 - 2022	Relocate Belly-freight facilities	35 TSF	3.4	35,000	X
C-4	--	Remove existing Air Freight Building and vehicle parking/movement area. *(demolition activity only)*	150 TSF	3.4	150,000	X
G-5 (part)	2020	Convert former San Jose State University leasehold site at southwest side to aviation support or general aviation facility use	50 TSF	3.5	50,000	X
G-6 (part)	N/A	Establish new FBO leaseholds on west side for reconfiguration of general aviation facilities	no new construction			X
G-8 (part)	2023 - 2025	Expansion of general aviation facilities	150 TSF	10.0	150,000	X
G-9	2023 (north) 2024 (south)	Expansion of west side general aviation apron	496.3 TSF	11.4	496,300	
G-10	N/A	Reconfigure southwest apron tiedown storage facilities (to accommodate Projects A-40, A-41, and G-5)	no new construction			
S-1 (part)	2035 - 2036	Expand fuel storage facility	4.8 TSF	2.3	4,800	X
S-3	N/A	Relocate/expand airport maintenance facilities at new site(s) on east or west sides of Airport.	no new construction			X
S-4	--	Expand flight kitchen facilities at existing or new sites on east side of Airport or relocate/expand off-airport.	125 TSF	8.6	125,000	X
S-5		Relocate/expand airline maintenance/storage facilities at various existing or new sites on east or west sides of Airport.				X
S-6		Remove, relocate, or upgrade existing aviation support facilities on southeast side of Airport (1239-1311 Airport Blvd.) at various existing or new sites on east or west sides of Airport.				X

Notes:

[1] Project IDs and construction duration based on Project Description as provided in the EIR. "--" indicates that proposed construction duration is not known at this time.

[2] Land-side construction projects as defined in Project Phasing for Proposed Major Amendment to Airport Master Plan (dated Jan 23, 2019).

[3] "X" indicates that the project is part of the Existing Master Plan.

Abbreviations:

N/A - not applicable
sqft - square feet
TSF - thousand square feet

Table 3.1-2. Airside Construction Project Description
Mineta San Jose International Airport
San Jose, California

Project ID[1]	Construction Year[1]	Project Description[2]	Width (ft)	Length (ft)	Count	Land Area (sqft)	Project Under Existing Master Plan[3]
A-17 (part)	2021	Extend parallel Taxiway W south from Taxiway B to Runway 12R-30L (for ADG-III aircraft).	115	413	1	48,800	X
A-23 (part)	--	Widen cross Taxiway J at Runway 12R-30L for higher-speed arrivals exit to west.	80	328	1	26,200	X
A-26	2022	Convert former Runway 11-29 to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.	118	1,518	1	179,145	X
	2023		118	808	1	95,355	X
A-27	--	Construct new cross Taxiway V7 from north end of new Taxiway V to Taxiway W (for ADG-III aircraft) .	109	147	1	16,000	X
A-37	--	Close existing Taxiway V and replace with a parallel apron - edge taxilane (for ADG-III aircraft) .	50	3,500	1	175,000	X
	--		75	3,400	1	255,000	X
A-38	--	Construct up to seven new taxiway connectors (V1-V7) between the expanded west side apron (Project G-9) and new Taxiway V (for ADG-III aircraft) .	129	92	7	83,000	
A-39	--	Mitigate direct access from west side apron to taxiways B, C, & D through pavement marking/painting or removal.	no new construction *(mark/paint only)*				
A-40	--	Create up to three new taxiway connectors (W1-W3) between the southwest apron and Taxiway W (for ADG-II aircraft) through pavement marking/painting or removal.	no new construction *(mark/paint only)*				
A-41	--	Relocate existing general aviation run-up pad to southwest apron area (*removal only*).	110	352	--	38,700	
A-42	--	Relocate Runway 12R-30L aircraft hold positions on all cross taxiways to current ADG-V aircraft standard.	30	150	10	45,000	
A-43	--	Widen Runway 12L-30R blast pads, and lengthen blast pad at 12L end, to current ADG-V aircraft standard.	40	210	1	8,389	
	--		40	163	1	6,511	
A-44	--	Realign existing cross taxiways B-F, H, J, & L between taxiways Y and Z to mitigate direct access from east side apron to Runway 12L-30R, and rename realigned segments as taxiways Z1-Z8 & Z10.	150	150	8	180,000	
A-45	--	Close existing segments of cross taxiways B-F, H, J, & L between taxiways Y and Z through pavement marking/painting or removal (upon completion of Project A-44) (removal only).	150	150	8	180,000	
A-46	--	Narrow segment of existing cross Taxiway B between Taxiway Z and Runway 12L-30R through pavement marking/painting.	no new construction *(mark/paint only)*				
A-47	--	Narrow segment of existing cross Taxiway L between Taxiway Y and Runway 12R-30L through pavement marking/painting.	no new construction *(mark/paint only)*				
A-48	--	Close existing segments of cross taxiways F and H between Runway 12R-30L and Runway 12L-30R through pavement marking/painting.	no new construction *(mark/paint only)*				
A-49	--	Add pavement markings to existing parallel taxiways W and Y, lateral to the adjacent runway displaced thresholds, to visually denote their use as taxiways.	no new construction *(mark/paint only)*				

Notes:
[1] Project IDs and construction duration based on Project Description as provided in the EIR. "--" indicates that proposed construction year is not known at this time.
[2] Air-side construction projects as defined in Project Phasing for Proposed Major Amendment to Airport Master Plan (dated Jan 23, 2019).
[3] "X" indicates that the project is part of the Existing Master Plan.

Abbreviations:
ft - feet
sqft - square feet

Table 3.1-3. Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Mineta San Jose International Airport
San Jose, California

#	Description Under Existing Airport Master Plan	Description Under Proposed Amendment to Airport Master Plan	Preliminary Phasing		
			Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes
Airfield Projects					
A-17	Extend/widen parallel **Taxiway W** south from Taxiway C to Runway 12R-30L (for ADG-IV aircraft).	Portion of project between Taxiways B & C already completed. Revised description for remaining portion of A-17 is as follows: Extend parallel **Taxiway W** south from Taxiway B to Runway 12R-30L (for ADG-III aircraft).	X		2021
A-23	Strengthen cross **Taxiway J** west of extended Runway 12L-30R to west of Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to west.	**Taxiway J** strengthening already completed. Remaining phase of A-23 to be completed as described in the existing Airport Master Plan.	X		Minor Construction
A-26	Widen/strengthen parallel **Taxiway V** from Taxiway G north to Taxiway W (for ADG-IV aircraft) and patch/restripe south of Taxiway G (for B-II aircraft).	Replace with Following New Project: Convert former **Runway 11-29** to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.	X		2021-remove existing; 2022-north; 2023-south
A-27	Extend cross **Taxiway H** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Replace with Following New Project: Construct new cross **Taxiway V7** from north end of new Taxiway V to Taxiway W (for ADG-III aircraft).	X		Minor Construction
A-37	Extend cross **Taxiway K** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Replace with Following New Project: Close existing **Taxiway V** and replace with a parallel apron-edge taxilane (for ADG-III aircraft).	X		Minor Phased Construction
A-38	Proposed new project	Construct up to **seven new taxiway connectors (V1–V7)** between the expanded west side apron (Project G-9) and new Taxiway V (for ADG-III aircraft).	X		Minor Phased Construction
A-39	Proposed new project	Mitigate direct **access from west side apron** to Taxiways B, C, & D through pavement marking/painting or removal.	X		Little or no construction

Table 3.1-3. Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Mineta San Jose International Airport
San Jose, California

#	Description Under Existing Airport Master Plan	Description Under Proposed Amendment to Airport Master Plan	Preliminary Phasing		
			Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes
A-40	Proposed new project	Create up to **three new taxiway connectors (W1–W3)** between the southwest apron and Taxiway W (for ADG-II aircraft) through pavement marking/painting or removal.	X		Minor Phased Construction
A-41	Proposed new project	Relocate existing **general aviation run-up pad** to southwest apron area.	X		Little or no construction
A-42	Proposed new project	Relocate **Runway 12R-30L aircraft hold positions** on all cross taxiways to current ADG-V aircraft standard.	X		Little or no construction
A-43	Proposed new project	Widen **Runway 12L-30R blast pads**, and lengthen blast pad at 12L end, to current ADG-V aircraft standard.	X		Minor Construction
A-44	Proposed new project	Realign existing cross **Taxiways B-F, H, J, & L** between Taxiways Y and Z to mitigate direct access from east side apron to Runway 12L-30R and rename realigned segments as Taxiways Z1–Z8 & Z10.	X (6 taxiways)	X (2 taxiways)	Minor Phased Construction
A-45	Proposed new project	Close existing segments of cross **Taxiways B-F, H, J, & L** between Taxiways Y and Z through pavement marking/painting or removal (upon completion of Project A-44).	X (6 taxiways)	X (2 taxiways)	Little or no construction
A-46	Proposed new project	Narrow segment of existing cross **Taxiway B** between Taxiway Z and Runway 12L-30R through pavement marking/painting.	X		Little or no construction
A-47	Proposed new project	Narrow segment of existing cross **Taxiway L** between Taxiway Y and Runway 12R-30L through pavement marking/painting.	X		Little or no construction
A-48	Proposed new project	Close existing segments of cross **Taxiways F and H** between Runway 12R-30L and Runway 12L-30R through pavement marking/painting.	X		Little or no construction

Table 3.1-3. Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Mineta San Jose International Airport
San Jose, California

#	Description Under Existing Airport Master Plan	Description Under Proposed Amendment to Airport Master Plan	Preliminary Phasing		
			Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes
A-49	Proposed new project	Add pavement markings to existing parallel **Taxiways W and Y**, lateral to the adjacent runway displaced thresholds, to visually denote their use as taxiways.	X		Little or no construction
Terminal Projects					
T-4	Construct new public **short-term parking garage** (up to 3,000 spaces) on existing "Red" Hourly Parking lot site opposite new Terminal B.	Construct new public **short-term parking garage** (up to 5,000 spaces) and associated roadway improvements south of existing Rental Car Garage and opposite new Terminal B South Concourse (Project T-13).	X		2022-2023
T-6	Remove former temporary **FIS facility** from ramp south of Terminal C and remove City office structures at 1311 Airport Blvd.	FIS removal already completed. Remaining phase of T-6 to be completed as described in the existing Airport Master Plan.	X		Minor Construction
T-8	Construct new public **long-term parking garage** (up to approx. 9,000 spaces) on existing interim rental car ready/return parking lot site, including interim surface parking at site prior to garage construction, second 2-lane bridge accessing site from Airport Blvd. and, upon completion, removal of public parking from interim west side lot.	Construction of interim surface parking and removal of interim parking from west side already completed. Remaining phase of T-8 will remove the interim surface lot and construct a new **public long-term parking garage** (up to 6,000 spaces) with access from Airport Blvd. using the existing 2-lane bridge.	X		2020-2021
T-13	Expand **Terminal B (South Concourse)** to south onto remainder of demolished Terminal C site, consisting of up to 700,000 ft^2 and 10 air carrier gates (ultimate total of 40 gates and 1.70 million ft^2).	Expand **Terminal B (South Concourse)** to south, including up to an additional 14 air carrier gates and 750,000 ft^2 of building space, and associated passenger processing facilities (ultimate terminal complex total of up to 42 gates and 1.80 million ft^2).	X (12 gates)	X (2 gates)	2024-2026 (12 gates); 2033-2034 (2 gates)
T-16	Proposed new project	Construct new multi-story **business hotel** south of and adjacent to new public short-term parking garage (Project T-4), up to 300,000 ft^2 in size including up to 330 guest rooms and 300 parking spaces.	X		2026-2027

Table 3.1-3. Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Mineta San Jose International Airport
San Jose, California

#	Description Under Existing Airport Master Plan	Description Under Proposed Amendment to Airport Master Plan	Preliminary Phasing		
			Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes
Air Cargo Projects					
C-2	Construct new **cargo airline facilities** at or adjacent to existing east side cargo airline areas, including up to 1.2 million ft^2 of ramp, building, and vehicle parking/movement space.	Expand **cargo airline facilities** at or adjacent to existing east side cargo airline areas, with up to 200,000 ft^2 of additional ramp, building, and vehicle parking and movement space (cargo airline facility total of up to 500,000 ft^2).	X (100,000 ft2)	X (100,000 ft2)	Minor Phased Construction
C-3	Relocate **belly-freight facilities** to new site(s) on east side of Airport, including up to 93,000 ft^2 building and vehicle parking/movement space.	Relocate **belly-freight facilities** to new site(s) on east side of Airport, including up to 150,000 ft^2 of ramp, building, and vehicle parking and movement space.	X		2021-2022
C-4	Remove existing **Air Freight Building** and vehicle parking/movement area (displaced by Project T-13 and T-15).	No change from the description in the existing Airport Master Plan.	X		Minor Construction
General Aviation Projects					
G-5	Remove **San José State University facilities** at southwest side upon lease expiration in 2010 and convert site to aviation support or general aviation facility use.	Removal of SJSU facilities already completed. Remaining phase of G-5 to be completed as described in the existing Airport Master Plan.	X		Minor Construction
G-6	Establish new **FBO leaseholds** on west side for reconfiguration of general aviation facilities.	Partially complete. Remaining phase of G-6 to be completed as described in the existing Airport Master Plan.	X		Little or no construction
G-8	Expand **general aviation facilities** onto northwest side of Airport (44 acres, upon implementation of Project T-7 and T-8).	Partially complete. Remaining phase of G-8 to be completed as described in the existing Airport Master Plan.	X		2023-2025
G-9	Proposed new project	Expand west side **general aviation apron** out to edge of new parallel taxilane (Project A-37).	X		2023-north; 2024 south
G-10	Proposed new project	Reconfigure **southwest apron tiedown** storage facilities (to accommodate Projects A-40, A-41, and G-5).	X		Little or no construction

Table 3.1-3. Comparison of Construction Projects under Existing Master Plan vs. Proposed Amendment to Master Plan
Mineta San Jose International Airport
San Jose, California

#	Description Under Existing Airport Master Plan	Description Under Proposed Amendment to Airport Master Plan	Preliminary Phasing		
			Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes
Aviation Support Projects					
S-1	Construct approx. 7-acre **fuel storage facility** (up to 8 tanks, 4.0 million gallons capacity) on vacant parcel north of Hwy. 101, two-acre fuel dispensing facility between Terminal A and north end of airfield, and pipeline connecting storage and dispensing.	Construction of first phase (3 tanks with 2.0-million gallons capacity) & fuel dispensing facility already completed. Remaining phase of S-1 to be completed as described in the existing Airport Master Plan.		X	2035-2036
S-3	Relocate/expand **airport maintenance facilities** at existing or new sites on east side of Airport.	Relocate/expand **airport maintenance facilities** at new site(s) on east or west sides of Airport.	X		Minor Construction
S-4	Expand **flight kitchen facilities** at existing or new sites on east side of Airport or relocate/expand off-airport.	No change from the description in the existing Airport Master Plan.	X		Minor Construction
S-5	Relocate/expand **airline maintenance-storage facilities** at various or new sites on east side of Airport.	Relocate/expand **airline maintenance-storage facilities** at various existing or new sites on east or west sides of Airport.	X	X	Minor Construction
S-6	Remove, relocate, or upgrade existing **aviation support facilities** on southeast side of Airport (1239-1311 Airport Blvd.) to or at various existing or new eastside sites.	Remove, relocate, or upgrade existing **aviation support facilities** on southeast side of Airport (1239-1311 Airport Blvd.) at various existing or new sites on east or west sides of Airport.	X	X	Minor Construction

Note:

Project phasing is estimated based on multiple factors including, but not limited to, existing and forecasted activity levels, construction staging constraints, trends in passenger travel mode (e.g., driving, transit, ridesharing, etc.), and the availability of funding. These factors are subject to change and, therefore, the timing of construction of various projects is also subject to revision.

Table 3.1-4. Activity Levels for Baseline, Project and No Project Scenarios
Mineta San Jose International Airport
San Jose, California

Scenario	Year	MAP	Annual Aircraft Operations[1]			
			Commercial	General Aviation	Military	Total
Baseline	2018	14.8	136,228	59,152	247	195,627
Project	2037	22.5	185,880	51,580	250	237,710
No Project (No New Facilities)[2]	2037	22.5	185,880	51,580	250	237,710
No Project (Buildout Under Existing Master Plan)[2]	2037	22.5	185,880	51,580	250	237,710

Notes:
[1] One aircraft operation is defined as one takeoff or one landing. The number of landing and take-off operations (LTOs) is calculated as the total number of operations divided by 2.

[2] The activity levels for aircraft operations and passenger demand under the No Project (No New Facilities) and No Project (Buildout Under Existing Master Plan) scenarios are assumed to be identical to the Project scenario.

Abbreviations:
MAP - Million Annual Passengers

Table 3.3-1. PG&E GHG Emission Factors Associated with Renewable Portfolio Standard
Mineta San Jose International Airport
San Jose, California

Utility	PG&E				
	2014[1,2]	**2015[1,2]**	**2016[1,2]**	**Average[3]**	**Units**
CO_2 Intensity Factor per Total Energy Delivered	435	405	294	378	lbs CO_2/MWh delivered
	0.20	0.18	0.13	0.17	MT CO_2/MWh delivered
% of Total Energy From Renewables	27.0%	29.5%	32.8%	29.8%	--
CO_2 Intensity Factor per Total Non-Renewable Energy[4]	596	574	437	538	lbs CO_2/MWh delivered
Estimated Intensity Factor for Total Energy Delivered[5,6]					
2020 RPS (33%)[7]	399	384	293	360	lbs CO_2/MWh delivered
	402	387	295	363	lbs CO_2e/MWh delivered
2030 RPS (60%)[7]	238	230	175	215	lbs CO_2/MWh delivered
	241	232	177	218	lbs CO_2e/MWh delivered
2037 RPS (79%)[8]	125	120	92	113	lbs CO_2/MWh delivered
	128	123	94	115	lbs CO_2e/MWh delivered

Notes:

[1] Total CO_2 emission factor from for PG&E from The Climate Registry. Available at: https://www.theclimateregistry.org/our-members/cris-public-reports/. If the Project procures electricity with higher percentage of renewables (e.g., from a Community Choice Aggregator such as Peninsula Clean Energy), emissions will be lower than calculated here.

[2] Percent of total energy from RPS-eligible renewables are from the PG&E 2015, 2016, and 2017 Corporate Responsibility Reports. Available at: http://www.pge.com/crsr

[3] This average uses the most recent three years of data available.

[4] The emissions metric presented here is calculated based on the total CO_2 intensity factor divided by the percent of energy delivered from non-renewable sources. Note that the California RPS-eligible renewables do not include large hydroelectric power.

[5] The intensity factor for total energy delivered is estimated by multiplying the percentage of energy delivered from non-renewable energy by the CO_2 emissions per total non-renewable energy metric calculated above. The estimate provided here and the energy reports issued by the utilities assume that renewable energy sources do not result in any CO_2 emissions.

[6] Global Warming Potentials (GWP) are based on the IPCC Fourth Assessment Report. CH_4 and N_2O emission factors are from the US EPA eGRID 2016, and are conservatively assumed not to change from these estimates. As more renewable energy is integrated into the electricity grid, these intensity factors will also decrease.

[7] California emission factors presented here are 60% projected RPS for 2030 and 100% RPS for 2045 consistency with SB 100. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100

[8] The RPS percentage for the 2037 future year is interpolated from the SB 100 goal of 100% RPS in 2045 to be 79%. The electricity CO_2 emission factor is then estimated as 21% of non-renewable electricity.

Abbreviations:

SB - Senate Bill
CARB - California Air Resources Board
CH_4 - methane
CO_2 - carbon dioxide
GHG - greenhouse gases
GWP - global warming potential
lbs - pounds
MWh - megawatt-hour
N_2O - nitrogen dioxide
NY - New York
PG&E - Pacific Gas & Electric
RPS - Renewable Portfolio Standards

Table 3.4-1. GHG Emissions Associated with Landside Construction Projects
Mineta San Jose International Airport
San Jose, California

Project ID[1]	Year	GHG Emissions[2]			
		CO_2	CH_4	N_2O	CO_2e
		(MT)			
T-4	2022	2,084	0.16	0.0	2,088
	2023	983	0.06	0.0	984
	Total	**3,067**	**0.21**	**0.0**	**3,072**
T-6 (part)	2020	5.5	0.001	0.0	5.6
	Total	**5.5**	**0.001**	**0.0**	**5.6**
T-8 (part)	2020	2,055	0.16	0.0	2,059
	2021	952	0.06	0.0	953
	Total	**3,007**	**0.22**	**0.0**	**3,013**
T-13 (gates 29-40)	2024	598	0.087	0.0	601
	2025	22	0.005	0.0	22
	Total	**620**	**0.092**	**0.0**	**623**
T-13 (gates 41-42)	2033	607	0.021	0.0	608
	2034	29	0.001	0.0	29
	Total	**636**	**0.022**	**0.0**	**637**
T-16	2026	533	0.084	0.0	535
	2027	23	0.005	0.0	23
	Total	**556**	**0.09**	**0.0**	**558**
C-2	2020	349	0.082	0.0	351
	2021	20	0.005	0.0	20
	Total	**369**	**0.09**	**0.0**	**371**
C-3	2021	347	0.080	0.0	349
	2022	21	0.005	0.0	21
	Total	**368**	**0.09**	**0.0**	**371**
C-4	2020	35	0.010	0.0	35
	Total	**35**	**0.01**	**0.0**	**35**
G-5 (part)	2020	360	0.082	0.0	362
	2021	20	0.005	0.0	20
	Total	**380**	**0.09**	**0.0**	**382**
G-8 (part)	2023	457	0.094	0.0	459
	2024	57	0.012	0.0	58
	Total	**514**	**0.11**	**0.0**	**517**
G-9	2023	696	0.11	0.0	699
	2024	303	0.04	0.0	304
	Total	**999**	**0.15**	**0.0**	**1,003**
S-1 (part)	2035	298	0.012	0.0	298
	2036	1.0	0.00004	0.0	1.0
	Total	**299**	**0.01**	**0.0**	**299**
S-4, S-5 and S-6	2020	419	0.087	0.0	421
	2021	53	0.012	0.0	53
	Total	**471**	**0.10**	**0.0**	**474**

Notes:

[1] Based on Project Phasing for Proposed Major Amendment to Airport Master Plan (dated Jan 23, 2019). For Projects: T-6, C-2, C-4, and S-4 through S-6 construction is conservatively assumed to start in CY 2020 for purposes of calculating construction emissions.

[2] CO_2e emissions associated with landside development were estimated using CalEEMod® version 2016.3.2 based on building type and size. CO_2e includes CO_2, CH_4, and N_2O emissions, which are weighted by their respective AR4 global warming potentials. N_2O emissions are negligible and not presented by CalEEMod®.

Abbreviations:

AR4 - Fourth Assessment Report
CalEEMod® - CALifornia Emissions Estimator MODel
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CY - calendar year
GHG - greenhouse gases
MT - metric tonnes
N_2O - nitrous oxide

Table 3.4-2. GHG Emissions Associated with Airside Construction Projects
Mineta San Jose International Airport
San Jose, California

Project ID[1]	Year	GHG Emissions[2,3,4]			
		CO_2	CH_4	N_2O	CO_2e
		(MT)			
A-17 (part)	2021	275	0.003	0.11	308
A-23 (part)	2020	237	0.002	0.072	258
A-26-1	2022	528	0.006	0.35	633
A-26-2	2023	366	0.004	0.20	425
A-27	2020	215	0.002	0.053	231
A-37-1	2020	563	0.005	0.34	666
A-37-2	2020	736	0.008	0.50	885
A-38	2020	341	0.003	0.18	394
A-42	2020	295	0.003	0.11	327
A-44	2020	523	0.006	0.35	628
A-43-1	2020	203	0.002	0.039	215
A-43-2	2020	199	0.002	0.035	210
A-41	2020	17	0.0002	0.013	21
A-45	2020	66	0.001	0.058	84

Notes:

[1] Based on Project Phasing for Proposed Major Amendment to Airport Master Plan (dated Jan 23, 2019). Construction year was provided only for projects A-17 and A-26, for all other projects construction is conservatively assumed to start in CY 2020 for purposes of calculating emissions.

[2] Construction equipment and activity (i.e., equipment type, equipment counts, averaged rated horsepower, load factor, hours of activity, vehicle trips, and VMT) for airside projects obtained using ACEIT.

[3] CO_2e emissions associated with offroad equipment were estimated using emission factors from OFFROAD 2017, except for chain saws, concrete saws, pumps, and surface equipment (grooving) where emission factors were obtained from ACEIT.

[4] CO_2e emissions associated with onroad vehicles were primarily estimated using emission factors from EMFAC2017. Emission factors for passenger cars are based on fleet average for LDA, LDT1, LDT2 and MDV vehicle classes and emission factors for dump trucks and cement mixers are based MHD and HHD fleet average.

Abbreviations:

ACEIT - Airport Construction Emissions Inventory Tool
CO_2 - Carbon dioxide
CO_2e - Carbon dioxide equivalent
CH_4 - Methane
CY - calendar year
GHG - Greenhouse gas
HHD - heavy-heavy duty
LDA - passenger cars
LDT - light-duty truck
MDV - medium-duty trucks
MHD - medium-heavy duty
MT - metric tons
N_2O - Nitrous Oxide

Table 3.4-3. Total GHG Emissions Associated with Construction Projects
Mineta San Jose International Airport
San Jose, California

Construction Description	Emissions (MT CO_2e)
Landside Projects	11,360
Airside Projects	5,284
Total	**16,644**

Abbreviations:
CO_2e - carbon dioxide equivalents
GHG - greenhouse gases
MT - metric tonnes

Table 3.4-4. GHG Emissions Associated with Construction Projects Under Existing Approved Master Plan
Mineta San Jose International Airport
San Jose, California

Project ID	GHG Emissions[1]			
	CO_2	CH_4	N_2O	CO_2e
	(MT)			
Landside Projects				
T-4	3,067	0.215	0.0	3,072
T-6 (part)	6	0.001	0.0	5.6
T-8 (part)	3,007	0.224	0.0	3,013
T-13	1,257	0.114	0.0	1,260
C-2	369	0.087	0.0	371
C-3	368	0.086	0.0	371
C-4	35	0.010	0.0	35
G-5 (part)	380	0.087	0.0	382
G-6 (part)[2]	N/A			
G-8 (part)	514	0.106	0.0	517
S-1 (part)	299	0.012	0.0	299
S-3[2]	N/A			
S-4	471	0.099	0.0	474
S-5				
S-6				
Airside Projects				
A-17 (part)	275	0.003	0.11	308
A-23 (part)	237	0.002	0.07	258
A-26	894	0.009	0.55	1,058
A-27	215	0.002	0.05	231
A-37	1,299	0.013	0.85	1,551
Total	**12,692**	**1.1**	**1.6**	**13,205**

Notes:

[1] Emissions associated with the construction of the Existing Master Plan are obtained from construction emissions of Amendment to Airport Master Plan as shown in prior tables.

[2] Emissions associated with Projects G-6 and S-3 were not modeled as the construction was completed in previous years.

Abbreviations:

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

GHG - greenhouse gases

MT - metric tonnes

N_2O - nitrous oxide

Table 3.5-1. AEDT Aircraft Classification and Engine Assignment
Mineta San Jose International Airport
San Jose, California

Aircraft Category	AEDT Aircraft Type	Number of Engines	Engine Manufacturer and Model[1]
Business	AEE-USER-TEMP GULFSTREAM AEROSPACE Gulfstream G650	2	Rolls-Royce BR-700-725A1-12
	Bombardier Challenger 600	2	Textron Lycoming ALF 502L-2
	Bombardier Global 5000 Business	2	BMW Rolls-Royce GmbH BR700-710A2-20
	Bombardier Global Express	2	BMW Rolls-Royce GmbH BR700-710A2-20
	Bombardier Learjet 25	2	CJ610-6
	Bombardier Learjet 35A/36A (C-21A)	2	TFE731-2/2A
	Cessna 500 Citation I	2	Pratt & Whitney (Canada) JT15D-4series
	Cessna 525 CitationJet	2	Pratt & Whitney PW4090
	Cessna 550 Citation II	2	PW530
	Cessna 560 Citation V	2	PW530
	Cessna 560 Citation XLS	2	BIZMEDIUMJET_F
	Cessna 650 Citation III	2	Allied Signal TFE731-3
	Cessna 680 Citation Sovereign	2	BIZMEDIUMJET_F
	Cessna 750 Citation X	2	Rolls-Royce Corporation AE3007C1
	CESSNA CITATION 510	2	UNKNOWN
	Dassault Falcon 20-D	2	CF700-2D
	Eclipse 500 / PW610F	2	PW610F-A
	Gulfstream G550	2	BMW Rolls-Royce GmbH BR700-710A1-10
	Gulfstream II	2	SPEY MK511-8
	Gulfstream II-B	2	Rolls Royce Ltd SPEY Mk511
	Gulfstream IV-SP	2	Rolls Royce Ltd TAY Mk611-8
	Israel IAI-1125 Astra	2	Allied Signal TFE731-3
	Mitsubishi MU-300 Diamond	2	Pratt & Whitney (Canada) JT15D-5, -5A, -5B
Commercial	Airbus A300F4-600 Series	2	Pratt & Whitney PW4x58
	Airbus A319-100 Series	2	International Aero Engines V2522-A5
	Airbus A320-200 Series	2	CFMI CFM56-5-A1
	Airbus A321-200 Series	2	International Aero Engines V2530-A5
	Airbus A330-200 Series	2	GE CF6-80E1A4
	Airbus A330-300 Series	2	GE Aircraft Engines CF6-80E1A2
	Airbus A340-200 Series	4	CFMI CFM56-5C2
	Airbus A340-600 Series	4	Rolls-Royce Trent 556-61
	Airbus A350-900 series	2	Rolls Royce plc Trent 772
	B787-8R	2	GE CF6-80C2B6F
	Boeing 717-200 Series	2	BMW Rolls-Royce GmbH BR700-715C1-30
	Boeing 727-200 Series	3	Pratt & Whitney JT8D-15A
	Boeing 737-400 Series	2	CFMI CFM56-3C-1 (Rerated)
	Boeing 737-500 Series	2	CFMI CFM56-3C-1 (Rerated)
	Boeing 737-700 Series	2	GE CFM56-7B24
	Boeing 737-800 MAX	2	GE Aviation LEAP-1A35A/33/33B2/32/30
	Boeing 737-800 Series	2	GE CFM56-7B26/2
	Boeing 747-400 Series Freighter	4	GE Aircraft Engines CF6-80C2B1F
	Boeing 757-200 Series	2	Pratt & Whitney PW2037
	Boeing 757-300 Series	2	Rolls-Royce plc RB211-535E4B
	Boeing 767-200 Series	2	GE CF6-80C2A5
	Boeing 767-300 Series	2	Pratt & Whitney PW4060
	Boeing 767-400 ER	2	GE CF6-80C2B7F
	Boeing 777-200-ER	2	GE GE90-90B
	Boeing 777-300 ER	2	GE Transportation GE90-115B
	Boeing DC-8 Series 70	4	CFMI CFM56-2-C5
	Boeing MD-10-30	3	GE CF6-50C2
	Boeing MD-83	2	Pratt & Whitney JT8D-219
	Boeing MD-90	2	International Aero Engines V2528-D5

Table 3.5-1. AEDT Aircraft Classification and Engine Assignment
Mineta San Jose International Airport
San Jose, California

Aircraft Category	AEDT Aircraft Type	Number of Engines	Engine Manufacturer and Model[1]
Commuter	Bombardier CRJ-700-LR	2	GE CF34-8C5
	Bombardier CRJ-900	2	GE CF34-8C5A1
	Bombardier de Havilland Dash 8 Q400	2	P & W Canada PW123
	Embraer ERJ145	2	Rolls-Royce Corporation AE3007A1/1
	Embraer ERJ175	2	GE CF34-8E5
	Embraer ERJ190	2	GE Transportation CF34-10E6A1
General Aviation-Piston	1985 1-ENG COMP	1	TIO-540-J2B2
	Boeing DC-3	2	R-1820
	Boeing DC-6	4	R-1820
	Cessna 172 Skyhawk	1	TSIO-360C
	Cessna 182	1	IO-360-B
	Cessna 206	1	TIO-540-J2B2
	EADS Socata TB-9 Tampico	1	IO-320-D1AD
	Piper PA-24 Comanche	1	TIO-540-J2B2
	Piper PA-28 Cherokee Series	1	IO-320-D1AD
	Piper PA-30 Twin Comanche	2	IO-320-D1AD
	Raytheon Beech Baron 58	2	TIO-540-J2B2
General Aviation-Turbo	Cessna 208 Caravan	1	P & W Canada PT6A-114
	Cessna 441 Conquest II	2	TPE331-8
	DeHavilland DHC-6-200 Twin Otter	2	PT6A-27
	Piper PA-42 Cheyenne Series	2	P & W Canada PT6A-41
Helicopter	Aerospatiale SA-350D Astar (AS-350)	1	TPE331-3
	Agusta A-109	2	250B17B
	Bell 206 JetRanger	1	250B17B
	Bell 206L-4T Long Ranger	1	250B17B
	Bell 407 / Rolls-Royce 250-C47B	2	250B17B
	Bell 430	2	250B17B
	Eurocopter EC-130	1	TPE331-3
	Robinson R22B	1	IO-320-D1AD
	Robinson R44 Raven / Lycoming O-540-F1B5	2	TIO-540-J2B2
Military	Aerospatiale SA-341G/342 Gazelle	1	PT6A-27
	Boeing F/A-18 Hornet	2	F404-GE-400
	Boeing F-15 Eagle	2	F100-PW-100
	Lockheed C-130 Hercules	4	Allison T56-A-15
	Northrop F-5E/F Tiger II	2	J85-GE-21
	Sikorsky S-76 Spirit	2	T700-GE-700
	Sikorsky SH-3 Sea King	2	T58-GE-8F

Notes:
[1] Engine manufacturer and model assignments are consistent with those used in the Noise Impacts analysis.
[2] Fleet mix from 2017 FAA Runway Incursion Mitigation/Design Standards Analysis Study (2017).

Table 3.5-2a. Baseline Aircraft Operations by Stage Length Modeled in AEDT
Mineta San Jose International Airport
San Jose, California

Aircraft Category[1]	Aircraft Type	Annual Number of Arrival Operations in 2018[2]	Annual Number of Departure Operations in 2018[2]						
			Stage Length						Total Departure Operations[3]
			1	2	3	4	6	7	
Business	AEE-USER-TEMP GULFSTREAM AEROSPACE Gulfstream G650	490	--	--	490	--	--	--	490
	Bombardier Challenger 600	2,363	2,363	--	--	--	--	--	2,363
	Bombardier Global 5000 Business	215	215	--	--	--	--	--	215
	Bombardier Global Express	556	556	--	--	--	--	--	556
	Bombardier Learjet 25	34	34	--	--	--	--	--	34
	Bombardier Learjet 35A/36A (C-21A)	570	570	--	--	--	--	--	570
	Cessna 500 Citation I	915	916	--	--	--	--	--	916
	Cessna 525 CitationJet	78	78	--	--	--	--	--	78
	Cessna 550 Citation II	988	988	--	--	--	--	--	988
	Cessna 560 Citation V	339	338	--	--	--	--	--	338
	Cessna 560 Citation XLS	1,308	1,313	--	--	--	--	--	1,313
	Cessna 650 Citation III	55	55	--	--	--	--	--	55
	Cessna 680 Citation Sovereign	748	748	--	--	--	--	--	748
	Cessna 750 Citation X	2,661	2,661	--	--	--	--	--	2,661
	CESSNA CITATION 510	662	662	--	--	--	--	--	662
	Dassault Falcon 20-D	7	7	--	--	--	--	--	7
	Eclipse 500 / PW610F	33	33	--	--	--	--	--	33
	Gulfstream G550	1,333	1,333	--	--	--	--	--	1,333
	Gulfstream II	22	22	--	--	--	--	--	22
	Gulfstream II-B	35	35	--	--	--	--	--	35
	Gulfstream IV-SP	1,108	1,108	--	--	--	--	--	1,108
	Israel IAI-1125 Astra	135	135	--	--	--	--	--	135
	Mitsubishi MU-300 Diamond	149	149	--	--	--	--	--	149
Commercial	Airbus A300F4-600 Series	227	44	--	--	183	--	--	227
	Airbus A319-100 Series	2,500	24	1,436	727	312	--	--	2,499
	Airbus A320-200 Series	4,222	1,457	1,215	493	1,056	--	--	4,222
	Airbus A321-200 Series	302	8	20	--	270	--	--	298
	Airbus A330-300 Series	148	--	4	--	37	--	106	148
	Airbus A340-200 Series	149	--	--	--	--	--	149	149
	Airbus A340-600 Series	7	2	--	--	--	--	5	7
	B787-8R	876	--	--	--	--	331	544	875
	Boeing 717-200 Series	1,077	57	1,019	--	--	--	--	1,076
	Boeing 727-200 Series	12	4	--	4	4	--	--	12

Table 3.5-2a. Baseline Aircraft Operations by Stage Length Modeled in AEDT
Mineta San Jose International Airport
San Jose, California

Aircraft Category[1]	Aircraft Type	Annual Number of Arrival Operations in 2018[2]	Annual Number of Departure Operations in 2018[2]						
			Stage Length						Total Departure Operations[3]
			1	2	3	4	6	7	
Commercial	Boeing 737-400 Series	29	11	8	--	9	--	--	29
	Boeing 737-500 Series	41	35	--	4	2	--	--	41
	Boeing 737-700 Series	24,623	18,755	4,279	1,243	345	--	--	24,623
	Boeing 737-800 MAX	258	124	59	32	43	--	--	258
	Boeing 737-800 Series	14,350	2,761	4,039	3,085	4,466	--	--	14,351
	Boeing 757-200 Series	99	32	12	--	55	--	--	99
	Boeing 757-300 Series	13	10	4	--	--	--	--	13
	Boeing 767-200 Series	4	1	1	--	1	--	--	4
	Boeing 767-300 Series	1,076	--	--	--	1,075	--	--	1,075
	Boeing 767-400 ER	10	--	4	--	6	--	--	10
	Boeing 777-200-ER	6	--	2	--	3	--	--	6
	Boeing DC-8 Series 70	10	6	--	--	4	--	--	10
	Boeing MD-10-30	18	--	--	--	18	--	--	18
	Boeing MD-83	9	1	--	--	8	--	--	9
	Boeing MD-90	191	--	174	16	--	--	--	191
Commuter	Bombardier CRJ-700-LR	795	24	771	--	--	--	--	795
	Bombardier CRJ-900	963	4	959	--	--	--	--	963
	Bombardier de Havilland Dash 8 Q400	885	889	--	--	--	--	--	889
	Embraer ERJ145	2,391	2,017	14	5	356	--	--	2,392
	Embraer ERJ175	13,385	10,235	2,313	832	4	--	--	13,384
	Embraer ERJ190	10	6	--	--	4	--	--	10
General Aviation-Piston	1985 1-ENG COMP	2,587	2,587	--	--	--	--	--	2,587
	Boeing DC-3	13	1	5	7	--	--	--	13
	Boeing DC-6	11	7	--	4	--	--	--	11
	Cessna 172 Skyhawk	536	536	--	--	--	--	--	536
	Cessna 182	246	246	--	--	--	--	--	246
	Cessna 206	370	255	--	124	--	--	--	379
	EADS Socata TB-9 Tampico	1,153	1,153	--	--	--	--	--	1,153
	Piper PA-24 Comanche	1,861	1,862	--	--	--	--	--	1,862
	Piper PA-28 Cherokee Series	73	73	--	--	--	--	--	73
	Piper PA-30 Twin Comanche	22	22	--	--	--	--	--	22
	Raytheon Beech Baron 58	1,777	1,791	--	--	--	--	--	1,791

Table 3.5-2a. Baseline Aircraft Operations by Stage Length Modeled in AEDT
Mineta San Jose International Airport
San Jose, California

Aircraft Category[1]	Aircraft Type	Annual Number of Arrival Operations in 2018[2]	Annual Number of Departure Operations in 2018[2]						
			Stage Length						Total Departure Operations[3]
			1	2	3	4	6	7	
General Aviation-Turbo	Cessna 208 Caravan	1,636	1,635	--	--	--	--	--	1,635
	Cessna 441 Conquest II	767	764	--	--	--	--	--	764
	DeHavilland DHC-6-200 Twin Otter	2,303	2,296	--	--	--	--	--	2,296
	Piper PA-42 Cheyenne Series	78	78	--	--	--	--	--	78
Helicopter	Aerospatiale SA-350D Astar (AS-350)	54	53	--	--	--	--	--	53
	Agusta A-109	80	80	--	--	--	--	--	80
	Bell 206 JetRanger	56	56	--	--	--	--	--	56
	Bell 206L-4T Long Ranger	11	11	--	--	--	--	--	11
	Bell 407 / Rolls-Royce 250-C47B	17	17	--	--	--	--	--	17
	Bell 430	15	15	--	--	--	--	--	15
	Eurocopter EC-130	439	439	--	--	--	--	--	439
	Robinson R22B	125	125	--	--	--	--	--	125
	Robinson R44 Raven / Lycoming O-540-F1B5	44	44	--	--	--	--	--	44
Military	Aerospatiale SA-341G/342 Gazelle	40	40	--	--	--	--	--	40
	Boeing F/A-18 Hornet	15	15	--	--	--	--	--	15
	Boeing F-15 Eagle	8	8	--	--	--	--	--	8
	Lockheed C-130 Hercules	15	15	--	--	--	--	--	15
	Northrop F-5E/F Tiger II	8	8	--	--	--	--	--	8
	Sikorsky S-76 Spirit	18	18	--	--	--	--	--	18
	Sikorsky SH-3 Sea King	21	21	--	--	--	--	--	21

Notes:

[1] Some aircraft types may be utilized under more than one category of operations (e.g., the Embraer ERJ-145 may be used as a business jet as well as a commuter jet), and some aircraft types may be mapped to existing types under a different category for modeling purposes within AEDT (e.g., the Boeing P-8 Poseidon is the military version of the Boeing 737-800, and was modeled as such within AEDT).

[2] Taxi times were obtained from the Federal Aviation Administration's Aviation System Performance Metrics (ASPM) database for actual SJC operations in 2018. An average departure (taxi-out) time of 13.72 minutes and an average arrival (taxi-in) time of 4.59 minutes was assumed for all aircraft operations modeled in AEDT. One aircraft operation is defined as one takeoff or one landing. The total number of landing and take-off operations (LTOs) is calculated as the sum of arrival and departure operations divided by 2.

[3] Departure operations by stage length may not sum exactly to the total number of departure operations for a given aircraft type due to rounding.

Table 3.5-2b. Project Aircraft Operations by Stage Length Modeled in AEDT
Mineta San Jose International Airport
San Jose, California

Aircraft Category[1]	Aircraft Type	Annual Number of Arrival Operations in 2037[2]	Annual Number of Departure Operations in 2037[2]						
			Stage Length						Total Departure Operations[3]
			1	2	3	4	6	7	
Business	AEE-USER-TEMP GULFSTREAM AEROSPACE Gulfstream G650	557	58	--	499	--	--	--	557
	Bombardier Challenger 600	2,300	2,300	--	--	--	--	--	2,300
	Bombardier Global 5000 Business	310	310	--	--	--	--	--	310
	Bombardier Global Express	1,000	1,000	--	--	--	--	--	1,000
	Bombardier Learjet 35A/36A (C-21A)	710	710	--	--	--	--	--	710
	Cessna 500 Citation I	125	125	--	--	--	--	--	125
	Cessna 525 CitationJet	275	275	--	--	--	--	--	275
	Cessna 550 Citation II	1,150	1,150	--	--	--	--	--	1,150
	Cessna 560 Citation V	250	250	--	--	--	--	--	250
	Cessna 560 Citation XLS	1,971	1,979	--	--	--	--	--	1,979
	Cessna 650 Citation III	55	55	--	--	--	--	--	55
	Cessna 680 Citation Sovereign	975	975	--	--	--	--	--	975
	Cessna 750 Citation X	4,766	4,766	--	--	--	--	--	4,766
	CESSNA CITATION 510	805	805	--	--	--	--	--	805
	Eclipse 500 / PW610F	127	127	--	--	--	--	--	127
	Gulfstream G550	1,905	1,905	--	--	--	--	--	1,905
	Gulfstream IV-SP	650	650	--	--	--	--	--	650
	Israel IAI-1125 Astra	350	350	--	--	--	--	--	350
	Mitsubishi MU-300 Diamond	175	175	--	--	--	--	--	175
Commercial	Airbus A319-100 Series	9,099	89	5,226	2,648	1,135	--	--	9,097
	Airbus A320-200 Series	2,322	802	668	271	581	--	--	2,322
	Airbus A321-200 Series	5,683	154	384	--	5,073	--	--	5,610
	Airbus A330-200 Series	766	66	6	--	318	--	375	766
	Airbus A350-900 series	777	--	--	--	--	298	479	777
	B787-8R	1,095	--	--	--	--	411	684	1,095
	Boeing 737-700 Series	5,459	4,158	949	276	77	--	--	5,459
	Boeing 737-800 MAX	42,381	6,070	33,072	1,484	1,739	--	--	42,365
	Boeing 737-800 Series	15,225	2,929	4,285	3,272	4,738	--	--	15,225
	Boeing 747-400 Series Freighter	3	--	--	--	3	--	--	3
	Boeing 757-200 Series	2	--	--	--	2	--	--	2
	Boeing 757-300 Series	2	2	--	--	--	--	--	2
	Boeing 767-300 Series	755	4	--	--	751	--	--	755
	Boeing 767-400 ER	20	--	9	--	11	--	--	20
	Boeing 777-200-ER	30	--	3	--	27	--	--	30
	Boeing 777-300 ER	377	142	57	--	178	--	--	377

Table 3.5-2b. Project Aircraft Operations by Stage Length Modeled in AEDT
Mineta San Jose International Airport
San Jose, California

Aircraft Category[1]	Aircraft Type	Annual Number of Arrival Operations in 2037[2]	Annual Number of Departure Operations in 2037[2]						
			Stage Length						Total Departure Operations[3]
			1	2	3	4	6	7	
Commuter	Bombardier CRJ-900	15	15	--	--	--	--	--	15
	Bombardier de Havilland Dash 8 Q400	125	125	--	--	--	--	--	125
	Embraer ERJ145	1,350	1,138	8	3	201	--	--	1,350
	Embraer ERJ175	8,859	6,004	2,366	487	2	--	--	8,859
	Embraer ERJ190	17	10	--	--	7	--	--	17
General Aviation-Piston	1985 1-ENG COMP	700	700	--	--	--	--	--	700
	Cessna 172 Skyhawk	360	360	--	--	--	--	--	360
	Cessna 182	246	246	--	--	--	--	--	246
	Cessna 206	381	306	--	87	--	--	--	393
	EADS Socata TB-9 Tampico	490	490	--	--	--	--	--	490
	Piper PA-24 Comanche	1,190	1,190	--	--	--	--	--	1,190
	Piper PA-28 Cherokee Series	73	73	--	--	--	--	--	73
	Piper PA-30 Twin Comanche	22	22	--	--	--	--	--	22
	Raytheon Beech Baron 58	614	613	2	4	--	--	--	619
General Aviation-Turbo	Cessna 208 Caravan	672	671	--	--	--	--	--	671
	Cessna 441 Conquest II	85	85	--	--	--	--	--	85
	DeHavilland DHC-6-200 Twin Otter	832	829	--	--	--	--	--	829
	Piper PA-42 Cheyenne Series	50	50	--	--	--	--	--	50
Helicopter	Agusta A-109	44	44	--	--	--	--	--	44
	Bell 206 JetRanger	17	17	--	--	--	--	--	17
	Bell 206L-4T Long Ranger	11	11	--	--	--	--	--	11
	Eurocopter EC-130	137	137	--	--	--	--	--	137
	Robinson R22B	39	39	--	--	--	--	--	39
	Robinson R44 Raven / Lycoming O-540-F1B5	14	14	--	--	--	--	--	14
Military	Boeing F/A-18 Hornet	15	15	--	--	--	--	--	15
	Boeing F-15 Eagle	8	8	--	--	--	--	--	8
	Lockheed C-130 Hercules	39	39	--	--	--	--	--	39
	Sikorsky S-76 Spirit	18	18	--	--	--	--	--	18
	Sikorsky SH-3 Sea King	21	21	--	--	--	--	--	21

Notes:

[1] Some aircraft types may be utilized under more than one category of operations (e.g., the Embraer ERJ-145 may be used as a business jet as well as a commuter jet), and some aircraft types may be mapped to existing types under a different category for modeling purposes within AEDT (e.g., the Boeing P-8 Poseidon is the military version of the Boeing 737-800, and was modeled as such within AEDT).

[2] An average departure (taxi-out) time of 13.72 minutes and an average arrival (taxi-in) time of 4.59 minutes was assumed for all aircraft operations modeled in AEDT, based on data obtained from the Federal Aviation Administration's Aviation System Performance Metrics (ASPM) database for actual SJC operations in 2018. The taxi-in and out times in the Project scenario (2037) are assumed to be the same as the Baseline scenario (2018). One aircraft operation is defined as one takeoff or one landing. The total number of landing and take-off operations (LTOs) is calculated as the sum of arrival and departure operations divided by 2.

[3] Departure operations by stage length may not sum exactly to the total number of departure operations for a given aircraft type due to rounding.

Table 3.5-3. Operational GHG Emissions Associated with Aircraft
Mineta San Jose International Airport
San Jose, California

Year	Aircraft Category		Annual Emissions Below Mixing Height (3,000 feet)[1,2] (MT/yr)			
			CO_2	CH_4	N_2O	CO_2e
2018	Business		11,573	0	0.36	11,680
	Commercial		105,566	0	3.2	106,534
	Commuter		19,089	0	0.59	19,264
	General Aviation	Piston	440	0.37	0.0058	451
		Turboprop	930	0	0.029	938
	Helicopter		126	0.11	0.0017	130
	Military		86	0	0.0026	86
	Total		**137,811**	**0.48**	**4.2**	**139,083**
2037	Business		14,862	0	0.46	14,998
	Commercial		242,238	0	7.5	244,459
	Commuter		10,791	0	0.33	10,890
	General Aviation	Piston	175	0.15	0.0023	180
		Turboprop	304	0	0.0094	307
	Helicopter		38	0.033	5.1E-04	39
	Military		103	0	0.0032	104
	Total		**268,512**	**0.18**	**8.3**	**270,977**

Notes:

[1] AEDT estimates CO_2 emissions only. CH_4 and N_2O emissions were estimated based on the USEPA's Emission Factors for GHG Inventories (based on fuel type), March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

[2] Consistent with Table A-110 of the Annexes to the Inventory of U.S. Greenhouse Gas Emissions and Sinks, CH_4 emissions from aircraft burning jet fuel are not included. This table is available at: https://www.epa.gov/sites/production/files/2017-02/documents/2017_all_annexes.pdf, Accessed April 2019.

Abbreviations:

AEDT - Aviation Environmental Design Tool
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
MT/yr - metric tons per year
N_2O - nitrogen dioxide
USEPA - US Environmental Protection Agency

Table 3.5-4. Operational GSE Emissions Associated with GSE
Mineta San Jose International Airport
San Jose, California

Emission Factors[1] (g/gallon)

Fuel Type	CO_2	CH_4	N_2O	CO_2e
Gasoline	8,780	0.50	0.22	8,858
Diesel	10,210	0.57	0.26	10,302

Global Warming Potential[2]

CO_2	CH_4	N_2O
1	25	298

Fuel Usage[3,4] (gallons)

Fuel Type	2018	2037
Gasoline	102,911	148,256
Diesel	119,545	161,563

CO_2e Emissions (MT/year)

Fuel Type	2018	2037
Gasoline	912	1,313
Diesel	1,232	1,664
Total	2,143	2,978

Notes:

[1] Emission factors based on EPA Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

[2] Global Warming Potentials based on IPCC, Fourth Assessment Report.

[3] Baseline (2018) fuel usage is based on site specific usage. Project (2037) fuel usage is estimated by scaling the baseline fuel usage by the change in operating hours per fuel type. Operating hours were estimated in AEDT based on aircraft operations.

[4] Projected fuel use conservatively assumes that the percent of electrified equipment is constant in future years (i.e., 22% of all equipment).

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
g - gram
GSE - ground support equipment
MT - metric ton
GHG - greenhouse gas
N_2O - nitrous oxide

Sources:

IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/.

Table 3.5-5. Operational Mobile Trip Generation
Mineta San Jose International Airport
San Jose, California

Year	2018[1]	2037[1]	Units
Annual Passengers	14,800,000	22,500,000	Passengers/year
Annual Trips	20,460,075	30,982,164	Trips/year
Annual Vehicle Miles Traveled	275,845,830	414,928,350	Miles/year

Notes:
[1] Annual trips and total vehicle miles traveled for 2018 and 2037 were based on airport specific data.

Table 3.5-6. Operational Mobile Fleet Mix
Mineta San Jose International Airport
San Jose, California

Year	Vehicle Class	Fleet Mix by Fuel Type[1]				
		Gas	Dsl	Elec	NG	Total
2018	LDA	56%	0.46%	1.6%	0%	58%
	LDT1	5.1%	0.0023%	0.021%	0%	5.1%
	LDT2	19%	0.10%	0.093%	0%	19%
	MDV	11%	0.23%	0.0063%	0%	11%
	LHDT1	1.3%	0.80%	0%	0%	2.1%
	LHDT2	0.17%	0.31%	0%	0%	0.48%
	MHDT	0.14%	1.2%	0%	0.0027%	0.013
	HHDT	9.6E-06	2.1%	0%	0.034%	2.1%
	UBUS	0.0023%	0.10%	0%	0.027%	0.13%
	SBUS	0.021%	0.069%	0%	0.0013%	0.092%
	OBUS	0.060%	0.12%	0%	0.00019%	0.18%
	MCY	0.52%	0%	0%	0%	0.52%
	MH	0.060%	0.020%	0%	0%	0.079%
2037	LDA	55%	0.68%	3.6%	0%	59%
	LDT1	5.2%	0.00071%	0.21%	0%	5.5%
	LDT2	16%	0.16%	0.52%	0%	17%
	MDV	10%	0.36%	0.37%	0%	11%
	LHDT1	1.1%	1.1%	0%	0%	2.1%
	LHDT2	0.16%	0.42%	0%	0%	0.58%
	MHDT	0.20%	1.2%	0%	0.0072%	1.4%
	HHDT	0.0018%	2.3%	0%	0.053%	2.4%
	UBUS	0.0020%	0.077%	0%	0.031%	0.11%
	SBUS	0.033%	0.049%	0%	0.0036%	0.085%
	OBUS	0.042%	0.10%	0%	0.00020%	0.14%
	MCY	0.49%	0%	0%	0%	0.49%
	MH	0.051%	0.022%	0%	0%	0.073%

Notes:

[1] EMFAC2017 was run for each scenario year. Annual vehicle miles travelled (VMT) was output by vehicle class and fuel for Santa Clara County and averaged across model years for EMFAC 2007 vehicle classes for a specific fuel type. From these, fleet mix was calculated by dividing the fuel and vehicle class specific VMT by the total VMT for that year.

Abbreviations:

LDA - light duty auto
Dsl - diesel
Elec - electric
HHDT - heavy heavy duty truck
LDT1 - light duty truck 1
LDT2 - light duty truck 2
LHDT1 - light heavy duty truck 1
LHDT2 - light heavy duty truck 2
MCY - motorcycle
MDV - medium duty vehicle
MH - motor home
MHDT - medium heavy duty truck
NG - natural gas
OBUS - other buses
SBUS - school bus
UBUS - urban bus
VMT - vehicle miles travelled

Table 3.5-7. Operational Mobile Emission Factors
Mineta San Jose International Airport
San Jose, California

Scenario Year	Process	Emission Factor Units[1]	Mobile Emission Factors[1,2] GHGs[3]			
			CO_2	CH_4	N_2O	CO_2e
2018	RUNEX	g/mi	379	0.011	0.018	384
	STREX	g/trip	64	0.081	0.033	76
	IDLEX		23	7.7E-04	0.0037	25
2037	RUNEX	g/mi	249	0.0055	0.011	252
	STREX	g/trip	39	0.023	0.018	45
	IDLEX		22	8.2E-04	0.0035	23

Notes:

[1] EMFAC2017 was run for each scenario year. Annual number of trips and VMT were output by vehicle class and fuel for Santa Clara County and averaged across model years for EMFAC 2007 vehicle classes. From these, emission factors were calculated by dividing the emissions by either the number of trips or the VMT, where appropriate. Emission factors were calculated using the equations below:

$E_{g/mi} = E / VMT$

$E_{g/trip} = E / T$

Where $E_{g/mi}$ is the emission factor in g/mi, $E_{g/trip}$ is the emission factor in g/trip, VMT is annual vehicle miles traveled and T is the annual number of trips.

[2] Emission factors shown are for the default fleet mix of the scenario year. A breakdown of this fleet by vehicle type and fuel is shown in Table 3.5-6.

[3] Global warming potentials used in the calculation of CO_2e are 1, 25 and 298 for CO_2, CH_4 and N_2O, respectively (IPCC AR4).

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
g - grams
GHG - greenhouse gas
IDLEX - idling exhaust
mi - mile
N_2O - nitrous oxide
RUNEX - running exhaust
STREX - starting exhaust
EMFAC2017 - California Air Resources Board EMission FACtor model

Sources:

ARB. 2017. Emission FACtors Model, 2017 (EMFAC2017). Available online at: https://www.arb.ca.gov/emfac/

IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/

Table 3.5-8. Operational GHG Emissions Associated with Traffic
Mineta San Jose International Airport
San Jose, California

Year	Trips[1]	VMT[1]	Mobile Emissions[2,3] (MT/year)			
	trips/year	miles/year	CO_2	CH_4	N_2O	CO_2e
2018	20,460,075	275,845,830	106,239	4.6	5.8	108,071
2037	30,982,164	414,928,350	105,253	3.0	5.1	106,858

Notes:

[1] Trips and VMT for each scenario year are discussed in Table 3.5-5.

[2] Fleet mix is the default fleet mix in EMFAC2017 for the scenario year. Fleet mix is shown in Table 3.5-6.

[3] Emissions are calculated with emission factors from EMFAC2017 for Santa Clara County and are shown in Table 3.5-7.

Abbreviations:

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

EMFAC2017 - California Air Resources Board EMission FACtor model

MT - metric ton

N_2O - nitrous oxide

Table 3.5-9. Baseline Operational GHG Emissions Associated with Airport Shuttles
Mineta San Jose International Airport
San Jose, California

Airport Shuttle Fuel Consumption (CNG)[1]	154,522	GGE
Average New Flyer C40LF Fuel Economy[2]	4.8	miles/DGE
Annual Average Shuttle Bus VMT[3]	652,912	VMT/year
Estimated GHG Emissions[4]	**1,501**	**MT CO_2e/year**

Notes:

[1] Shuttle fuel consumption based on 2017 calendar year.

[2] Average fuel economy based on data obtained from the Altoona Bus Research & Testing Center under the Federal Transit Administration's new model bus testing program. Available at: https://mjbradley.com/sites/default/files/CNG%20Diesel%20Hybrid%20Comparison%20FINAL%2005nov13.pdf.

[3] Annual average shuttle bus VMT is calculated based on annual shuttle bus fuel consumption and average fuel economy of shuttle bus model. Miles per DGE are converted to miles per GGE using the conversion factor listed below, based on the relative energy content of gasoline and diesel fuels. Available at: http://www.nat-g.com/why-cng/cng-units-explained/.

[4] GHG Emission factors (CO_2, CH_4, N_2O) obtained from EMFAC 2017.

Abbreviations:

CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
CH_4 - methane
DGE - diesel gallon equivalent
EMFAC - California Air Resources Board Emissions Factor Model
GGE - gasoline gallon equivalent
GHG - greenhouse gas
MT - metric tonnes
N_2O - nitrous oxide
VMT - vehicle miles traveled

Constants and Conversion Factors:

MT/gram	1.00E-06
CO_2 Global Warming Potential	1
CH_4 Global Warming Potential	25
N_2O Global Warming Potential	298
GGE/DGE	1.136

Table 3.5-10. Project Operational GHG Emissions Associated with Airport Shuttles
Mineta San Jose International Airport
San Jose, California

Annual Average Shuttle Bus VMT (2037)[1]	992,602	VMT/year
Fuel Economy of Electric Bus[2]	1.8	(kWh/mile)
Electricity Consumed (2037)	1,771,795	kWh
PG&E Electricity Emission Factor (2037)	0.000037	(MT CO_2e/kWh)
Emission Factor for Electric Bus (2037)[3]	0.000066	(MT CO_2e/mile)
Estimated Emissions		
Estimated CO_2e (2037)	**66**	**MT/year**

Notes:

[1] Shuttle bus VMT in 2037 is determined by scaling 2018 VMT based on the increase in Million Annual Passengers (MAP) provided by the project sponsor in Table 3.1-4

[2] Based on fuel economy of similar electric buses. (BYD and Proterra). Proterra -- available at: http://www.proterra.com/product-tech/product-portfolio/.
BYD -- available at: http://byd.com/na/ebus/ebus.html.

[3] PG&E electricity emission factor includes 78% RPS as calculated in Table 3.3-1.

Abbreviations:

CARB - California Air Resources Board
CH_4 - methane
lb - pound
EMFAC - California Air Resources Board Emissions Factor Model
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
kWh - kilowatt-hour
MWh - megawatt-hour
MT - metric tonnes
PG&E - Pacific Gas and Electric
VMT - vehicle miles traveled

Constants and Conversion Factors:

lb/MT	2204.62
kWh/MWh	1000
CO_2 Global Warming Potential	1
CH_4 Global Warming Potential	25
N_2O Global Warming Potential	298

Table 3.5-11. Operational GHG Emissions Associated with SJC-Owned Airside Equipment
Mineta San Jose International Airport
San Jose, California

Emission Factors[1] (g/gallon)

Fuel Type	CO_2	CH_4	N_2O	CO_2e
Gasoline	8,780	0.50	0.22	8,858
Diesel	10,210	0.57	0.26	10,302

Global Warming Potential[2]

CO_2	CH_4	N_2O
1	25	298

Fuel Usage[3] (Gallons)

Fuel Type	2018	2037
Gasoline	3,431	5,217
Diesel	4,585	6,971

CO_2e Emissions (MT/year)

Fuel Type	2018	2037
Gasoline	30	46
Diesel	47	72
Total	78	118

Notes:
[1] Emission factors based on EPA Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

[2] Global Warming Potential based on IPCC, Fourth Assessment Report.

[3] Baseline (2018) fuel usage is based on site specific usage. Project (2037) fuel usage is estimated by scaling the baseline fuel usage with the change in million annual passengers.

Abbreviations:
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
g - gram
MT - metric ton
GHG - greenhouse gas
N_2O - nitrous oxide
SJC - San Jose International Airport

Sources:
IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/

Table 3.5-12. Operational GHG Emissions Associated with Boilers
Mineta San Jose International Airport
San Jose, California

Natural Gas Usage

Source	Boiler Rating[1] (MMBtu/hour)	Natural Gas Usage by Year[2] (MMscf/year)	
		2018	2037
Industrial Boiler (S#28)	8.0	7.3	11.1
Industrial Boiler (S#29)	8.0	7.3	11.1
Industrial Boiler (S#30)	5.2	4.8	7.2
	Facility Total	**19**	**29**

Emission Factors[3,4] (lb/MMscf)

Pollutant	CO_2	CH_4	N_2O	CO_2e
Factor	119,317	2.2	0.22	119,440

Global Warming Potential[4]

Pollutant	CO_2	CH_4	N_2O
Value	1	25	298

2018 Emissions (MT/year)

Source	2018 Annual Emissions			
	CO_2	CH_4	N_2O	CO_2e
Industrial Boiler (S#28)	396	0.0075	7.5E-04	396
Industrial Boiler (S#29)	396	0.0075	7.5E-04	396
Industrial Boiler (S#30)	257	0.0048	4.8E-04	258
Facility Total	**1,049**	**0.020**	**0.0020**	**1,050**

Table 3.5-12. Operational GHG Emissions Associated with Boilers
Mineta San Jose International Airport
San Jose, California

2037 Emissions (MT/year)

Source	2037 Annual Emissions			
	CO_2	CH_4	N_2O	CO_2e
Industrial Boiler (S#28)	602	0.0113	1.1E-03	602
Industrial Boiler (S#29)	602	0.0113	1.1E-03	602
Industrial Boiler (S#30)	391	0.0074	7.4E-04	392
Facility Total	**1,595**	**0.030**	**0.0030**	**1,597**

Notes:

[1] Boiler rating is for the existing boilers.

[2] Facility total 2018 fuel usage is based on utility meter reading for the Central Plant. Individual fuel usage proportioned by boiler rating. Fuel usage for 2037 was scaled by the change in annual passengers at the airport.

[3] GHG emissions factors are from the EPA's "Emissions Factors for Greenhouse Gas Inventories" and were converted from kg/MMBtu to lb/MMscf using 1,020 Btu/scf.

4 Global Warming Potentials based on IPCC, Fourth Assessment Report.

Abbreviations:

Btu - British thermal unit
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
kg - kilogram
GHG - greenhouse gas
lb - pound
MM - million
MT - metric ton
N_2O - nitrous oxide
scf - standard cubic foot

Sources:

EPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/. Accessed April 2019.

Table 3.5-13. Operational GHG Emissions Associated with Miscellaneous Natural Gas Combustion
Mineta San Jose International Airport
San Jose, California

Natural Gas Usage[1] (MMscf/year)

Source	2018	2037
Non-Central Plant Boiler Usage	1.8	2.7

Emission Factors[2,3] (lb/MMscf)

Pollutant	CO_2	CH_4	N_2O	CO_2e
Factor	119,317	2.2	0.22	119,440

Global Warming Potential[3]

Pollutant	CO_2	CH_4	N_2O
Value	1	25	298

Emissions (MT/year)

Year	CO_2	CH_4	N_2O	CO_2e
2018	98	0.0018	1.8E-04	**98**
2037	149	0.0028	2.8E-04	**149**

Notes:

[1] Facility total 2018 fuel usage is based on metered natural gas consumption from utility bills for all Airport locations excluding the Central Plant. Individual fuel usage proportioned by boiler rating. Fuel usage for 2037 was scaled by the change in annual passengers at the airport.

[2] GHG emissions factors are from the EPA's "Emissions Factors for Greenhouse Gas Inventories" and were converted from kg/MMBtu to lb/MMscf using 1,020 Btu/scf.

[3] Global Warming Potentials based on IPCC, Fourth Assessment Report.

Abbreviations:

Btu - British thermal unit
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
kg - kilogram
GHG - greenhouse gas
lb - pound
MM - million
MT - metric ton
N_2O - nitrous oxide
scf - standard cubic foot

Sources:

EPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/. Accessed April 2019.

Table 3.5-14. Operational GHG Emissions with Emergency Generator
Mineta San Jose International Airport
San Jose, California

Emission Factors[1] (g/MMBtu)

Pollutant	CO_2	CH_4	N_2O	CO_2e
Value	73,960	3.0	0.60	74,214

Global Warming Potential[2]

Pollutant	CO_2	CH_4	N_2O
Value	1	25	298

Standy Diesel Engine ID[6]	Horsepower	2018 Operating Hours[4]	Activity[5]	Annual Emissions			
				CO_2	CH_4	N_2O	CO_2e
			MMBtu	MT/year			
S-1	67	17	8.1	0.60	2.4E-05	4.9E-06	0.60
S-3	1,135	6.5	52	3.8	1.5E-04	3.1E-05	3.8
S-6	416	8.1	24	1.7	7.1E-05	1.4E-05	1.8
S-8	277	8.5	16	1.2	4.9E-05	9.9E-06	1.2
S-9	170	5.2	6.2	0.46	1.9E-05	3.7E-06	0.46
S-10	109	25	19	1.4	5.7E-05	1.1E-05	1.4
S-11	109	156	119	8.8	3.6E-04	7.1E-05	9
S-12	116	7.4	6.0	0.44	1.8E-05	3.6E-06	0.45
S-13	102	0	0	0	0	0	0
S-14	269	129	243	18	7.3E-04	1.5E-04	18
S-15	535	6.4	24	1.8	7.2E-05	1.4E-05	1.8
S-16	535	6.5	24	1.8	7.3E-05	1.5E-05	1.8
S-18	377	50	132	10	4.0E-04	7.9E-05	10
S-19	2,200	10	154	11	4.6E-04	9.2E-05	11
S-20	2,200	16	246	18	7.4E-04	1.5E-04	18
S-21	2,200	10	154	11	4.6E-04	9.2E-05	11
S-22	375	7.1	19	1.4	5.6E-05	1.1E-05	1.4
S-23	2,937	6.1	125	9.3	3.8E-04	7.5E-05	9
S-24	2,220	9.0	140	10	4.2E-04	8.4E-05	10
S-25	2,206	7.1	110	8.1	3.3E-04	6.6E-05	8.1
S-27	145	5.1	5.2	0.38	1.6E-05	3.1E-06	0.38
			Facility Total	**120**	**0.0049**	**0.0010**	**121**

Notes:

[1] Emission factors are from 40 CFR Part 98 Table C-1.

[2] Global Warming Potentials based on IPCC, Fourth Assessment Report.

[3] Generator information is for the existing equipment,

[4] 2018 operating hours were based on actual usage. Operating hours are expected to stay the same in 2037 and there is no plan to replace the existing generators or add additional generators. Therefore, emissions in 2037 are assumed to same as in 2018.

[5] Total horsepower-hours was converted to MMBtu using 7,000 Btu/Hp-Hr from AP 42 Chapter 3.

[6] Source S-13 was removed and is no longer operational at the Airport. Airport does not have data on S-18. It was conservatively assumed to operate up to the maximum number of permitted hours.

Abbreviations:

Btu - British thermal unit	N_2O - nitrous oxide
CO_2 - carbon dioxide	O_2 - oxygen
g - gram	PM_{10}- PM less than 10 microns in diameter
GHG - greenhouse gas	$PM_{2.5}$ - PM less than 2.5 microns in diameter
lb - pound	ppm - parts per million
MM - million	VOC - volatile organic compounds
NOx - nitrogen oxide	scf - standard cubic foot

Sources:

EPA. AP 42 Chapter 3, Section 3. Gasoline and Diesel Industrial Engines. October 1996. Available at: https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf. Accessed April 2019.

IPCC. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available online at: https://www.ipcc.ch/report/ar4/wg1/. Accessed April 2019.

Table 3.5-15. Utility Demand per Million Annual Passengers (MAP) (2018)
Mineta San Jose International Airport
San Jose, California

Utility	Demand per MAP	
Water	4,269.9	ccf/MAP
Waste Generated	120.6	tons/MAP
Electricity	2,144.9	MWh/MAP

Notes:

[1] Site specific utility usage for baseline (July 2017- June 2018). The demand per MAP metric was derived by dividing the utility quantity by a MAP of 14.8.

Abbreviations:

ccf - hundred cubic feet

MAP - million annual passengers

MWh - megawatt hours

Table 3.5-16. Utility Demand
Mineta San Jose International Airport
San Jose, California

	Baseline (2018)	**Project[1] (2037)**
Purchased Electricity Usage[2] (kWh/yr)	31,744,725	48,260,562
Purchased Water Usage (ccf/yr)	63,194	96,072
Waste Generated (tons/yr)	1,785	2,714

Notes:

[1] The Project utility demands are estimated by multiplying the demand per MAP in Table 3.5-15 by the projected increase in passengers in 2037.

[2] Purchased electricity includes total terminal and ground service equipment (GSE).

Abbreviations:

ccf - hundred cubic feet

GSE - ground service equipment

kWh - kilowatt hour

yr - year

Table 3.5-17. Operational GHG Emissions Associated with Electricity
Mineta San Jose International Airport
San Jose, California

A. Summary

	Baseline (2018)	Project (2037)
Electricity Purchased[1] (kWh)	31,744,725	48,260,562
Passengers	14,800,000	22,500,000
Emissions (MT CO_2e/year)	5,475	2,528

B. PG&E Emission Factors[2]

CO_2		
For 2018 (29.8% RPS)	377.7	lb/MWh
For 2037 (79% RPS)	112.9	lb/MWh
CH_4	0.029	lb/MWh
N_2O	0.00617	lb/MWh

C. Global Warming Potentials[3]

Gas	GWP
CO_2	1
CH_4	25
N_2O	298

Notes:

[1] Purchased electricity estimates based on site specific data for July 2017-June 2018. Projected electricity usage estimated by scaling the baseline usage with the change in MAP. Estimate includes electricity usage by ground service equipment (GSE).

[2] Emission factors from Table 3.3-1.

[3]Global Warming Potentials from the Intergovernmental Panel on Climate Change (IPCC). Fourth Assessment Report. Available from https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf. Accessed April 2019.

Abbreviations:

CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalence
kWh - kilowatt hour
GWP - global Warming Potential
GSE- ground service equipment
IPCC - Intergovernmental Panel on Climate Change
lb - pound
MAP - million annual passengers
MT - metric tonnes
MWh - megawatt hour
N_2O - nitrous oxide
PG&E - Pacific Gas and Electric
RPS - renewables portfolio standard

Table 3.5-18 Operational GHG Emissions Associated with Water
Mineta San Jose International Airport
San Jose, California

A. Summary

	Baseline (2018)	Project (2037)
Total Water Usage (ccf)[1]	63,194	96,072
Passengers	14,800,000	22,500,000
Water Electricity (kWh)[2]	100,076	152,142
Emissions (MT CO_2e/year)	17	8

B. PG&E Emission Factors[3]

CO_2		
For 2018 (29.8% RPS)	377.7	lb/MWh
For 2037 (79% RPS)	112.9	lb/MWh
CH_4	0.029	lb/MWh
N_2O	0.00617	lb/MWh

C. Global Warming Potentials[4]

Gas	GWP
CO_2	1
CH_4	25
N_2O	298

Notes:

[1] Baseline water usage estimated based on site specific data for 2017-2018. Projected water usage estimated by scaling the baseline usage with the change in MAP.

[2] Water Electricity Intensity is 2,117 kWh/million gallons from CalEEMod Table 9.2 for Supply Water in Santa Clara County, California. Available from http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4. Accessed: April 2019

[3] Emission factors from Table 3.3-1.

[4] Global Warming Potentials from the Intergovernmental Panel on Climate Change (IPCC). Fourth Assessment Report. Available from https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf. Accessed April 2019.

Abbreviations:

CalEEMod - California Emissions Estimator Model
ccf - hundred cubic feet
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalence
kWh - kilowatt hour
GWP - global warming potential
IPCC - Intergovernmental Panel on Climate Change
lb- Pound
MAP - million annual passengers
MT - metric tonnes
MWh - megawatt hour
N_2O - nitrous oxide
PG&E - Pacific Gas and Electric
RPS - renewable portfolio standard

Table 3.5-19 Operational GHG Emissions Associated with Solid Waste
Mineta San Jose International Airport
San Jose, California

A. Solid Waste Generated[1]

Scenario	Passengers	% Solid Waste Diverted	Waste Generated (tons)	Waste Disposed (tons)
Baseline (2018)	14,800,000	84.6%	1,785	274
Project (2037)	22,500,000	84.6%	2,714	417

B. CalEEMod Emission Factors[2]

Gas	No LFG Collection (ton/ton waste)	LFG Collect and Combust (ton/ton waste)	Average (ton/ton waste)[3]
CO_2	0.143	0.229	0.224
CH_4	0.043	0.011	0.013

C. Global Warming Potentials[4]

Gas	GWP
CO_2	1
CH_4	25

D. CO_2e Emissions

	MT CO_2e/year
Baseline (2018)	168
Future Year (2037)	255

Notes:

[1] Baseline solid waste generation and disposal based on site specific data for 2017-2018. Future year (2037) project waste generation estimated by scaling baseline solid waste generation data with the increase in MAP. Diversion rate calculated as the waste diverted (generated minus the waste disposed) divided by the waste generated. Diversion rate exceeds state diversion rate target of 75%.

[2] Estimated Waste Emission Factor per ton from CalEEMod Table 10.2. Available from http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4.

[3] Calculation assumes the split between No LFG Collection and LFG Collect and Combust based on CalEEMod's default of 94% Landfill Collect and Combust and 6% No LFG Collection based on statewide averages. Available from http://www.caleemod.com/.

[4]Global Warming Potentials from the Intergovernmental Panel on Climate Change (IPCC). Fourth Assessment Report. Available from https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf. Accessed April 2019.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalence
GWP - global warming potential
IPCC - Intergovernmental Panel on Climate Change
lb - pound
LFG - landfill gas
MAP - Million annual passengers
MT - metric tonnes

Table 3.5-20. Operational GHG Emissions Associated with Hotel
Mineta San Jose International Airport
San Jose, California

Source	GHG Emissions[1] (MT CO_2e/Yr)
Area	0.01
Energy	939
Mobile	1,392
Waste	91
Water	26
Total	**2,447**

Notes:
[1] CO_2e emissions for operations of hotel in 2037 land use were estimated using CalEEMod® version 2016.3.2. CO_2e includes CO_2, CH_4, and N_2O emissions, which are weighted by their respective AR4 global warming potentials.

Abbreviations:

AR4 - Fourth Assessment Report
CalEEMod® - CALifornia Emissions Estimator MODel
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gases
MT - metric tonnes
N_2O - nitrous oxide
yr - year

Table 3.5-21. Summary of Baseline Emissions Inventory
Mineta San Jose International Airport
San Jose, California

Source		Baseline CO_2e (MT/year)[1]
Aircraft & GSE		
Aircraft		139,083
GSE	Gasoline	912
	Diesel	1,232
Mobile Sources		
Traffic		108,071
Airport Shuttles		1,501
Airside (Off-Road) Equipment	Gasoline	30
	Diesel	47
Stationary Sources		
Boilers		1,050
Miscellaneous Natural Gas Combustion		98
Emergency Generators		121
Utilities		
Electricity		5,475
Water		17
Waste		168
Total Annual Emissions		**257,805**

Notes:
[1] Baseline (2018) GHG emissions as estimated in prior tables. CO_2e includes CO_2, CH_4, and N_2O emissions, which are weighted by their respective AR4 global warming potentials.

Abbreviations:
AR4 - Fourth Assessment Report
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gases
MT - metric tonnes
N_2O - nitrous oxide

Table 3.5-22. Summary of Project Emissions Inventory
Mineta San Jose International Airport
San Jose, California

Source		Future (2037)[1,2] CO_2e (MT/year)	Proposed Project[2,3] CO_2e (MT/year)
Aircraft & GSE			
Aircraft		270,977	131,894
GSE	Gasoline	1,313	402
	Diesel	1,664	433
Mobile Sources			
Traffic		106,858	-1,213
Airport Shuttles		66	-1,435
Airside (Off-Road) Equipment	Gasoline	46	16
	Diesel	72	25
Stationary Sources			
Boilers		1,597	546
Miscellaneous Natural Gas Combustion		149	51
Emergency Generators		121	0
Utilities			
Electricity		2,528	-2,947
Water		8	-9
Waste		255	87
New Land Use Type			
Hotel		2,447	2,447
Total Annual Emissions		**388,102**	**130,297**

Notes:

[1] Proposed Project (2037) GHG emissions as estimated in prior tables. CO_2e includes CO_2, CH_4, and N_2O emissions, which are weighted by their respective AR4 global warming potentials.

[2] GHG emissions associated with No Project/No New Facilities (2037) scenario and No Project/Buildout under Existing Master Plan (2037) are expected to be the same as Proposed Project.

[3] GHG emissions associated with the Proposed Project is the difference in Baseline (2018) emissions, as shown in Table 3.5-21, and Future (2037) emissions.

Abbreviations:

AR4 - Fourth Assessment Report
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gases
MT - metric tonnes
N_2O - nitrous oxide
RPS - Renewable Portfolio Standard

Table 5.1-1. Project GHG Emissions: Percentage Contribution to Existing International, National, State, and County Inventories
Mineta San Jose Airport
San Jose, California

Emission Inventory	CO_2e Emissions[1] MT/yr	CO_2e Percentage Contribution to Existing Inventory
Project (2037)	130,297	--
BAAQMD - 2015[2]	84,700,000	0.15%
State of California - 2016[3]	429,400,000	0.03%
United States of America - 2017[4]	6,456,700,000	0.002%
Global - 2015[5]	36,240,721,000	0.0004%

Notes:

[1] CO_2e includes CO_2, CH_4, and N_2O emissions. For all emission inventories other than "Project," halogenated compounds, which are associated with industrial activity and not expected to be a component of Project emissions, are included . All species are weighted by their respective global warming potentials (GWP) to calculate CO_2e. All inventories other than the global inventories use GWPs from AR4.
The global inventory uses the GWP from SAR. This has a minor impact on the overall emissions, based on IPCC Fourth Assessment Report: Climate Change 2007. Available at: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

[2] BAAQMD 2015 estimated from Figure 2 of BAAQMD Greenhouse Gas Emissions Estimation and Draft Forecasts document. BAAQMD. March 2017. Greenhouse Gas Emissions Estimates and Draft Forecasts. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/ghg_emissions_and_forecasts_draft.pdf?la=en.

[3] CARB. 2018. California Greenhouse Gas Emission Inventory - 2018 Edition. Available at: https://www.arb.ca.gov/cc/inventory/data/data.htm.

[4] USEPA. 2017. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. Does not include LULUCF emissions or sinks. Available at: https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-chapter-executive-summary.pdf

[5] Joint Research Centre, European Commission. 2016. GHG (CO_2, CH_4, N_2O, F-gases) emission time series 1990-2015 per region/country. Emission Database for Global Atmospheric Research (EDGAR). Available at: http://edgar.jrc.ec.europa.eu/overview.php?v=CO2ts1990-2015

Abbreviations:

AR4 - Fourth Assessment Report
BAAQMD - Bay Area Air Quality Management District
CARB - California Air Resources Board
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
F-gases - fluorinated gases
GHG - greenhouse gases
IPCC - Intergovernmental Panel on Climate Change
LULUCF - Land Use, LandUse Change, and Forestry
MT - metric tonnes
N_2O - nitrous oxide
USEPA - United States Environmental Protection Agency
SAR - Second Assessment Report
yr - year

Table 5.2-1. Consistency with Applicable State Greenhouse Gas Reduction Strategies
Mineta San Jose International Airport
San Jose, California

#	Sector/Source	Strategy Description[1]	Consistency Analysis
Energy			
1	California Renewables Portfolio Standard (RPS) and SB 350	As most recently amended by SB 100 (2018), California's RPS increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020; 50 percent renewable power by 2026; and, 60 percent renewable power by 2030. SB 350 (2015) also requires the State Energy Resources Conservation and Development Commission to double (by 2030) the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	**Consistent.** The Project would not impair implementation of the state's RPS or the energy efficiency and conservation targets of SB 350. It also is noted that the Airport would use electricity provided by San Jose Clean Energy (SJCE), which is required to meet the state's RPS. SJCE is a non-profit, locally-controlled electricity generation service provider; it is estimated that the City of San Jose will initially see an 18 percent reduction in GHG emissions from electricity generation as a result of its formation. (See https://www.sanjosecleanenergy.org/about.)
2	California Code of Regulations, Title 24, Part 6	Energy efficiency standards for residential and nonresidential buildings that are updated approximately every three years.	**Consistent.** The Project would meet the Title 24 energy efficiency standards in effect at the time of building permit application. In addition, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 square feet (ft^2) to achieve Leadership in Energy and Environmental Design (LEED) Silver standards. This is in line with the City of San Jose's New Construction Green Building Requirements. (See http://www.sanjoseca.gov/index.aspx?NID=1517).
3	Assembly Bill 1109	The Lighting Efficiency And Toxics Reduction Act (AB 1109) requires a reduction in average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018.	**Consistent.** The Project would meet the applicable requirements of AB 1109. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy-efficient lighting.
4	California Code of Regulations, Title 24, Part 11	The California Green (CalGreen) Building Standards Code establishes green building standards for residential and nonresidential buildings to meet the goals of AB 32. Standards include requirements for site development, indoor and outdoor water use reduction, construction waste reduction, disposal and recycling, and building maintenance and operation.	**Consistent.** The Project would meet the CalGreen Building Standards Code in effect at the time of building permit application. In addition, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards.

Table 5.2-1. Consistency with Applicable State Greenhouse Gas Reduction Strategies
Mineta San Jose International Airport
San Jose, California

#	Sector/Source	Strategy Description[1]	Consistency Analysis
Mobile Sources			
5	AB 1493 (Pavley Regulations)	Reduces GHG emissions in new passenger vehicles from model years 2012-2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.	**Consistent.** The Project would not impair implementation of the AB 1493 regulations.
6	Low Carbon Fuel Standard (LCFS)	Establishes protocols for measuring and reducing the life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	**Consistent.** The Project would not conflict with implementation of the LCFS. The Project also would construct public accessibly electric vehicle (EV) charging stations, which is consistent with the LCFS because it promotes the purpose of the LCFS to reduce the full fuel-cycle, carbon intensity of the transportation fuel pool used in California. Under the LCFS, electric vehicles carbon intensity are equal to the electricity grid, which is decreasing due to the influx of renewable electricity generation. In addition, the Project adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet is alternate fuel or clean energy-powered.
7	Advanced Clean Cars (ACC) Program	In 2012, the California Air Resources Board (CARB) adopted the ACC program to reduce criteria pollutant emissions and GHG emissions for model year vehicles 2015 through 2025. ACC includes the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulations that require manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.	**Consistent.** The Project would not conflict with implementation of the ACC program. The Project's installation of publicly-accessible EV charging stations also would be consistent with the objective of the ZEV regulations to facilitate fleet turnover from internal combustion engine vehicles to alternatively fueled vehicles.
8	SB 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	**Consistent.** Table 5.2-2 demonstrates the Project's consistency with SB 375 through its consistency with the Plan Bay Area 2040. Table 5.2-2 also describes the Project's relevant transportation-related mitigation measures.

Table 5.2-1. Consistency with Applicable State Greenhouse Gas Reduction Strategies
Mineta San Jose International Airport
San Jose, California

#	Sector/Source	Strategy Description[1]	Consistency Analysis
Water			
9	Senate Bill X7-7	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban retail water supplier shall develop water use targets to meet this goal.	**Consistent.** The Project will meet the CalGreen Building Standards Code in effect at the time of building permit application; these standards include water conservation measures. Also of note, the San Jose Water Company provides water to the Airport and has sufficient supply to meet the projected demands of the Airport over the studied planning horizon. The San Jose Water Company has implemented a robust water conservation program since the early 1990s and encourages customers to reduce water consumption by 20%. It also is noted that the Airport uses recycled water for toilet flushing and landscaping, which consists of primarily native and drought tolerant plants to reduce water use. Recycled water is treated and provided by South Bay Water Recycling (SBWR), which is a City agency with a network of over 100 miles of purple pipes throughout Santa Clara County.
Solid Waste			
10	California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill (AB) 341.	The IWMA mandated that state agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50 percent of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a statewide goal for 75 percent disposal reduction by the year 2020.	The Project will utilize the Airport's existing recycling and waste diversion programs, and will be served by the City of San Jose's contract with San Jose Green Team and Green Waste. The Airport has a goal for zero waste by 2022 and, by implementing existing recycling programs and waste separation, the Airport currently diverts 85% of its waste from landfill trash. (See https://www.flysanjose.com/node/496.) In accordance with the Zero Waste International Alliance definition that Zero Waste is diverting 90 percent of all discarded materials form landfills, incinerators, and the environment.

Note:
[1] Only the strategies relevant to the GHG emissions inventory are included.

Abbreviations:
AB - Assembly Bill
ACC - Advanced Clean Cars
CalGreen - California Green Building Standards Code
CARB - California Air Resources Board
CCR - California Code of Regulations
EV - Electric Vehicle
GHG - Greenhouse Gas
IWMA - Integrated Waste Management Act
PHEV - Plug-in hybrid electric vehicles
RPS - Renewable Portfolio Standard
SJCE - San Jose Clean Energy
ZEV - Zero Emission Vehicle

Table 5.2-2. Consistency with Applicable Plan Bay Area 2040 Actions and Strategies
Mineta San Jose International Airport
San Jose, California

#	Goal[1]	Consistency Analysis
1	Climate Protection. Transitioning to a post-carbon economy and achieving ambitious greenhouse gas reduction targets for 2030 and 2050 by first reducing per-capita CO2 emissions from passenger vehicles by 2035.	**Consistent.** The SB 743 analysis prepared for the Proposed Project confirms that the project-generated VMT per passenger would represent an approximately one percent reduction from the baseline condition. The Airport adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet has been transitioned to alternate fuel or clean energy power. Furthermore, the Airport has implemented and continues to implement the following strategies to reduce GHG emissions from passenger vehicles: - Completed a consolidated rental car facility in 2010, which has increased the efficiency of rental car movement and shuttle bus service to/from the facility; - Providing free bus and rail passes to Airport employees since 1998; - Converting the shuttle bus fleet to compressed natural gas (CNG) in 2008; - Purchasing ten (10) electric shuttle buses in February 2019; - Upgrading various on-Airport roadways to reduce congestion, delay and queueing; - Providing free shuttle bus service between the Airport and the Metro Light Rail Train (LRT) Station and Santa Clara CalTrain Station since 1998; - Constructing publicly-accessible electric vehicle (EV) charging stations; - Requiring at least 25% of all taxi/van trips to and from the Airport to be by low- or zero-emission vehicles; and, - Disseminating information on public transit systems in the Airport terminals and on the Airport's website.
2	Transportation System Effectiveness. Increasing the use of non-auto modes, such as public transport, walkability, and bikability.	**Consistent.** As described above, the Airport provides free bus/rail passes to employees to allow unlimited use of Santa Clara Valley Transportation Authority's (VTA) bus and LRT systems, provides a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encourages public transit by disseminating information on public transit systems in Airport terminals and on Airport website. SJC has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
3	Transportation. Reducing transportation-related emissions of greenhouse gases that cause climate change.	**Consistent.** The Airport adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet has been transitioned to alternate fuel or clean energy power. In addition, the Airport has implemented and continues to implement the following strategies to reduce GHG emissions from passenger vehicles: - Completed a consolidated rental car facility in 2010, which has increased the efficiency of rental car movement and shuttle bus service to/from the facility; - Providing free bus and rail passes to Airport employees since 1998; - Converting the shuttle bus fleet to compressed natural gas (CNG) in 2008; - Purchasing ten (10) electric shuttle buses in February 2019; - Upgrading various on-Airport roadways to reduce congestion, delay and queueing; - Providing free shuttle bus service between the Airport and the Metro Light Rail Train (LRT) Station and Santa Clara CalTrain Station since 1998; - Constructing publicly-accessible electric vehicle (EV) charging stations; - Requiring at least 25% of all taxi/van trips to and from the Airport to be by low- or zero-emission vehicles; - Developing cellphone lots to encourage drivers picking up passengers to wait in the designated lot; - Creating a taxi dispatch system that requires taxis to park in designated areas until they are dispatched; and, - Disseminating information on public transit systems in the Airport terminals and on the Airport's website.

Note:
[1] Only the goals relevant to the GHG emissions inventory are included.

Reference:
Metropolitan Transportation Commission and Association of Bay Area Governments. (2017, FJuly). Plan Bay Area 2040 Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017-2040. Available from http://2040.planbayarea.org/cdn/farfuture/u_7TKELkH2s3AAiOhCyh9Q9QlWEZIdYcJzi2QDCZuIs/1510696833/sites/default/files/2017-11/Final_Plan_Bay_Area_2040.pdf.

Abbreviations:

CNG- Compressed natural gas	LRT- light rail transit
EV- Electric vehicle	VTA- Santa Clara Valley Transportation Authority

Table 5.2-3. Consistency with Applicable Climate Smart San Jose Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
Pillar 1: A Sustainable and Climate Smart City		
1.1	Transitioning to a renewable energy future provides clean electricity that supplies the entire city	**Consistent.** The Airport is expected to receive electricity from San Jose Clean Energy (SJCE). Electricity sourced by SJCE is expected to be 80 percent carbon free, with options to upgrade to 100 percent renewable energy. While SJCE will source cleaner energy from various carbon-free options like solar, wind, and hydropower, it is expected to supply the electricity to the California State's electricity grid, which will then be transmitted and delivered by Pacific Gas & Electric (PG&E). In addition, in 2010, the Airport constructed a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility, which provides 20% of the rental car facility's power.
1.2	Embracing our Californian climate means creating an urban landscape, in our homes and public places, that is not just low water use, but attractive and enjoyable	**Consistent.** The Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use. Recycled water is treated and provided by South Bay Water Recycling (SBWR), which is a City agency with a network of over 100 miles of purple pipes throughout Santa Clara County.
Pillar 2: A Vibrant City of Connected & Focused Growth		
2.1	Densifying our city in focused growth areas increases walkability and cycling and also makes our neighborhoods more vibrant, distinctive, and enjoyable	**Consistent.** The Airport supports sustainable land use by providing free bus/rail passes to employees to allow unlimited use of Santa Clara Valley Transportation Authority's (VTA) bus & light rail transit (LRT) systems, providing a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on the Airport's website. SJC has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
2.3	New technology can enable clean, electric, and personalized mobility choices that make it convenient to move between any two points in the city	**Consistent.** The Airport has implemented several initiatives to enable clean, electric, and personalized mobility choices, such as the following: - Publicly-accessible electric vehicle (EV) charging stations - A consolidated rental car facility - A CNG fueling station - A taxi dispatch system - Free shuttle bus service between the Airport and the Metro LRT Station and Santa Clara CalTrain Station In addition, the Airport requires that at least 25% of all taxi/van trips to/from the Airport to be by low- or zero-emission vehicles, as facilitated by grants from the Airport and VTA.

Table 5.2-3. Consistency with Applicable Climate Smart San Jose Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
2.4	Developing integrated, accessible public and active transport infrastructure reduces the dependency on the car to move within the city	**Consistent.** The Airport supports public transit by providing free bus/rail passes to employees to allow unlimited use of VTA's bus and LRT systems, providing a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on Airport website.
Pillar 3: An Economically Inclusive City of Opportunity		
3.1	Creating local jobs in our City makes it possible for our residents to work close to where they live, saving time, money, and gas spent commuting	**Consistent.** The expansion of the Airport to accommodate the projected demand for aviation services would lead to more jobs within the City; new Airport employees, like existing employees, would be provided with access to free bus/rail passes, which include unlimited use of VTA's bus & light rail transit (LRT) systems and free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station.
3.2	Making our commercial buildings high-performance and siting them close to transit lowers water and energy use	**Consistent.** The Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 square feet would be designed to achieve Leadership in Energy and Environmental Design (LEED) Silver standards. The Airport also supports public transit use via implementation of the strategies described in concert with the evaluation of Project consistency with strategies considered above.
3.3	Moving commercial goods through our city more efficiently with new technology and fleet management practices	**Consistent.** The Airport facilitates goods movement within the city via cargo operations. Reductions associated with this measure are in line with State's Scoping Plan.

Note:
[1] Only the strategies relevant to the GHG emissions inventory are included.

Reference:
City of San Jose. (2018, February). Climate Smart San Jose. A People-Centered Plan for a Low-Carbon City. Available from http://www.sanjoseca.gov/DocumentCenter/View/75035.

Abbreviations:
LED - Light-emitting diode
LEED- Leadership om Energy and Environmental Design
LRT- Light rail transit
SBWR- South Bay Water Recycling
VTA- Santa Clara Valley Transportation Authority

Table 5.2-4. Consistency with Applicable Envision San Jose 2040 Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
Measurable Environmental Sustainability		
MS-1	Green Building Policy Leadership	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating various green building design and operation principles and sustainable construction practices as discussed in Tables 5.2-1, 5.2-2, and 5.2-3. For example, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 square feet (ft^2) to achieve Leadership in Energy and Environmental Design (LEED) Silver standards. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy-efficient lighting.
MS-2	Energy Conservation and Renewable Energy Use	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating energy conservation and renewable energy use as discussed in Tables 5.2-1, 5.2-2, and 5.2-3. For example, the Airport is served by the San Jose Clean Energy Program; electricity purchased for Airport facilities will be the default GreenSource mix of 45% renewables and 35% hydropower, which is 80% carbon free.
MS-3	Water Conservation and Quality	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-5	Waste Diversion	**Consistent.** In addition to meeting City, State, and Regional policies on waste diversion, as described in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport has a goal for zero waste by 2022 in its operations. By implementing composting and recycling programs, the Airport is currently diverting 85% of waste from landfill trash.
MS-6	Waste Reduction	**Consistent.** In addition to meeting City, State, and Regional policies on waste reduction, as described in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport has a goal for zero waste by 2022 in its operations. By implementing composting and recycling programs, the Airport is currently diverting 85% of waste from landfill trash.
MS-7	Environmental Leadership and Innovation	**Consistent.** The Airport has implemented and continues to implement a number of programs that demonstrate it is an environmental leader and furthers innovation. For example, in addition to the programs and strategies described above in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport supports the Guadalupe River Trail, which runs adjacent to the airfield and is part of the San Jose Green Vision Goal of creating 100 miles of interconnected trails. There are 20 storage spaces for bikes that are available near the Airport terminals for customers, travelers, and workers that are easily accessible from the Guadalupe River Park trail. The Airport also was the first airport in the western U.S. to be awarded a Voluntary Airport Low Emissions (VALE) grant by the Federal Aviation Administration (FAA) in 2009. Receipt of that multi-million dollar grant, in conjunction with the Airport's modernization program, allowed for 28 aircraft gates to be equipped with preconditioned air and ground power, which enables airlines to reduce their use of jet and diesel fuel while aircraft are parked at the gate. The VALE grant also enabled the Airport to purchase 11 off-road electric vehicles. (See https://www.flysanjose.com/environment/environment.)

Table 5.2-4. Consistency with Applicable Envision San Jose 2040 Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
MS-8	Environmental Stewardship	**Consistent.** The Airport has implemented and continues to implement a number of programs that demonstrate a commitment to environmental stewardship. In addition to the programs and strategies described above in Tables 5.2-1, 5.2-2, and 5.2-3, for example, the Airport has secured 84 acres of infield areas that serve as habitat for a resident population of Western Burrowing Owls, a California Species of Concern. (See https://www.flysanjose.com/environment/environment.)
MS-10	Air Pollution Emission Reduction	**Consistent.** The Project is undergoing environmental review under CEQA, including an evaluation of air quality impacts consistent with the Bay Area Air Quality Management District's (BAAQMD) CEQA Guidelines, which incorporate state and federal standards. Feasible air emission reduction measures will be identified and implemented, as applicable. In addition, please see discussion above in Tables 5.2-1, 5.2-2, and 5.2-3 regarding various strategies pertaining to air pollution emission reduction from mobile sources.
MS-13	Construction Air Emissions	**Consistent.** The Project will follow basic construction mitigation measures from the BAAQMD's CEQA Guidelines. In addition, the Airport or Airport's construction contractor will comply with the following engine requirements: 1. All off-road equipment greater than 25 horse power used in construction projects at the Airport shall have engines that meet Tier 4 Final off-road emission standards. 2. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the two-minute idling limit. 3. The contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications. 4. The environmental review officer may waive the equipment requirements of Subsection (1)(a) if: a particular piece of off-road equipment with an engine meeting Tier 4 Final emission standards is not regionally available to the satisfaction of the environmental review officer.

Table 5.2-4. Consistency with Applicable Envision San Jose 2040 Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
MS-14	Reduce Consumption and Increase Efficiency	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating various green building design and operation principles and sustainable construction practices as discussed in Tables 5.2-1, 5.2-2, and 5.2-3. For example, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy-efficient lighting. These types of strategies, and others described above, serve to reduce the Airport's consumption of resources and increase efficiency.
MS-15 and MS-16	Renewable Energy and Energy Security	**Consistent.** The Project would be consistent with the City, State, and Regional policies addressing renewable energy and energy security, as discussed in Tables 5.2-1, 5.2-2, and 5.2-3. For example, the Airport is served by the San Jose Clean Energy Program; electricity purchased for Airport facilities will be the default GreenSource mix of 45% renewables and 35% hydropower, which is 80% carbon free. In addition, in 2010, the Airport constructed a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility, which provides 20% of the rental car facility's power.
MS-17	Responsible Management of Water Supply	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-18	Water Conservation	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 5.2-1, 5.2-2, and 5.2-3, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-21	Community Forest	**Consistent.** The Project would provide appropriate landscaping consistent with San Jose's Community Forest policies.
General Land Use Policies		
LU-1	General Land Use	**Consistent.** The Airport is part of the City's existing land use pattern. This Project would facilitate the ability of the Airport to meet the projected demand for aviation services, and thereby minimize the need for members of the traveling public to utilize other major commercial airports in the Bay Area region (such as SFO and OAK). SJC has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.

Table 5.2-4. Consistency with Applicable Envision San Jose 2040 Measures
Mineta San Jose International Airport
San Jose, California

#	Strategy[1]	Consistency Analysis
General City Design		
CD-2, CD-3, and CD-5	Function and Connections	**Consistent**. The Airport supports sustainable land use by providing free bus/rail passes to employees to allow unlimited use of Santa Clara Valley Transportation Authority's (VTA) bus & light rail transit (LRT) systems, providing a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on Airport website. SJC has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
Balanced Transportation System		
TR-1 thru TR-10	Balanced Transportation System	**Consistent.** See Table 5.2-2 for discussion of the balanced transportation options made available to members of the traveling public, as well as Airport employees. SJC has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.

Table 5.2-4. Consistency with Applicable Envision San Jose 2040 Measures
Mineta San Jose International Airport
San Jose, California

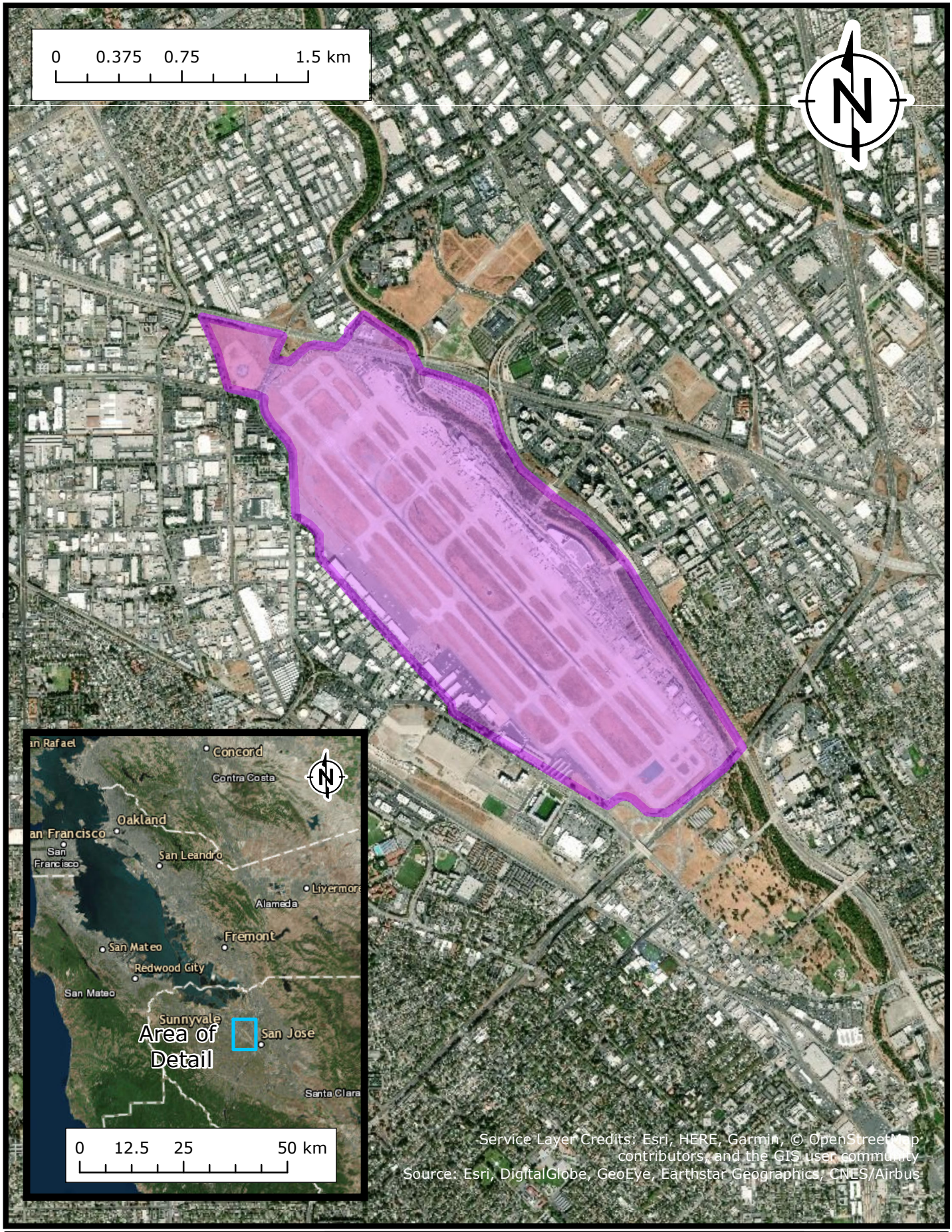
#	Strategy[1]	Consistency Analysis
Appendix 8. GHG Reduction Strategy for the City of San Jose, dated June 2011		
1	City Initiated Actions to Reduce Greenhouse Gases	The Project Plan would be consistent with the Climate Smart SJ measures as listed in Table 5.2-3.
2	GHG reductions through implementation of the Land Use Transportation / Diagram	The Project would be consistent with the Envision San Jose 2040 land use (LU) measures by accommodating projected growth in aviation demand at an existing airport facility within the City's jurisdictional boundaries.
3	GHG emission reductions attributed to General Plan policies	The Project would be consistent with the Climate Smart SJ measures as listed in Table 5.2-3 and the Envision San Jose 2040 measures as listed in this table above.

Note:
[1] Only the strategies relevant to the GHG emissions inventory are included.

Reference:
City of San Jose. (2018, February). Envision San Jose 2040 General Plan. Available from http://www.sanjoseca.gov/DocumentCenter/View/474.

Abbreviations:
BAAQMD - Bay Area Air Quality Management
CEQA - California Environmental Quality Act
GHG - greenhouse Gas
LRT - light rail transit
LU - land use
LEED - Leadership om Energy and Environmental Design
SJ - San Jose
SJC - Norman Y. Mineta San Jose International Airport
VMT - Vehicle miles traveled
VTA - Santa Clara Valley Transportation Authority

FIGURES



RAMBOLL

DRAFTED BY: LK | DATE: 5/20/2019

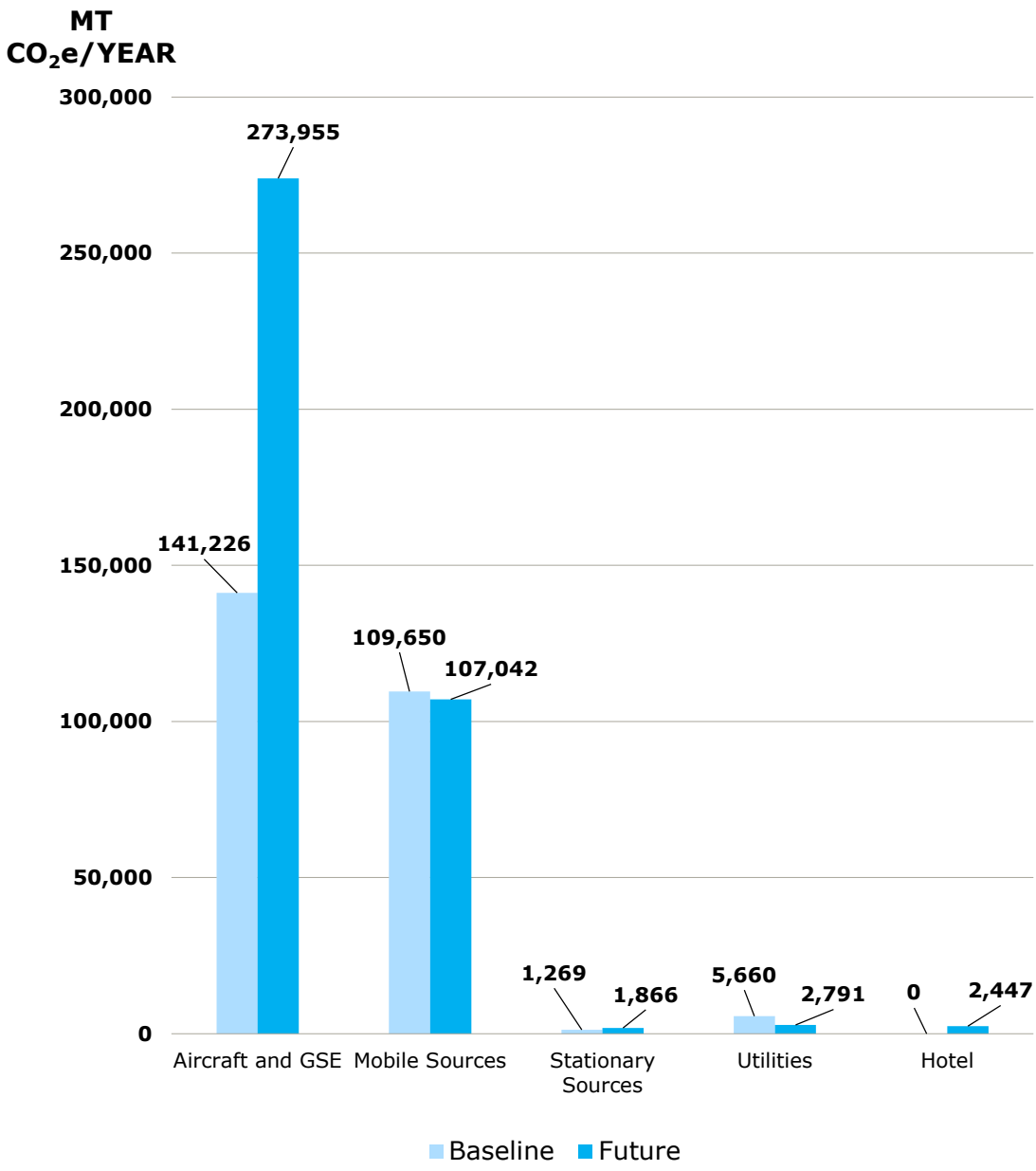
Airport Location

Regional and Vicinity
San Jose Airport
San Jose, CA

FIGURE
1

PROJECT: 1690010078

Baseline (2018) and Future Year (2037) GHG Emissions by Source



RAMBOLL

DRAFTED BY: LK

DATE: 07/15/2019

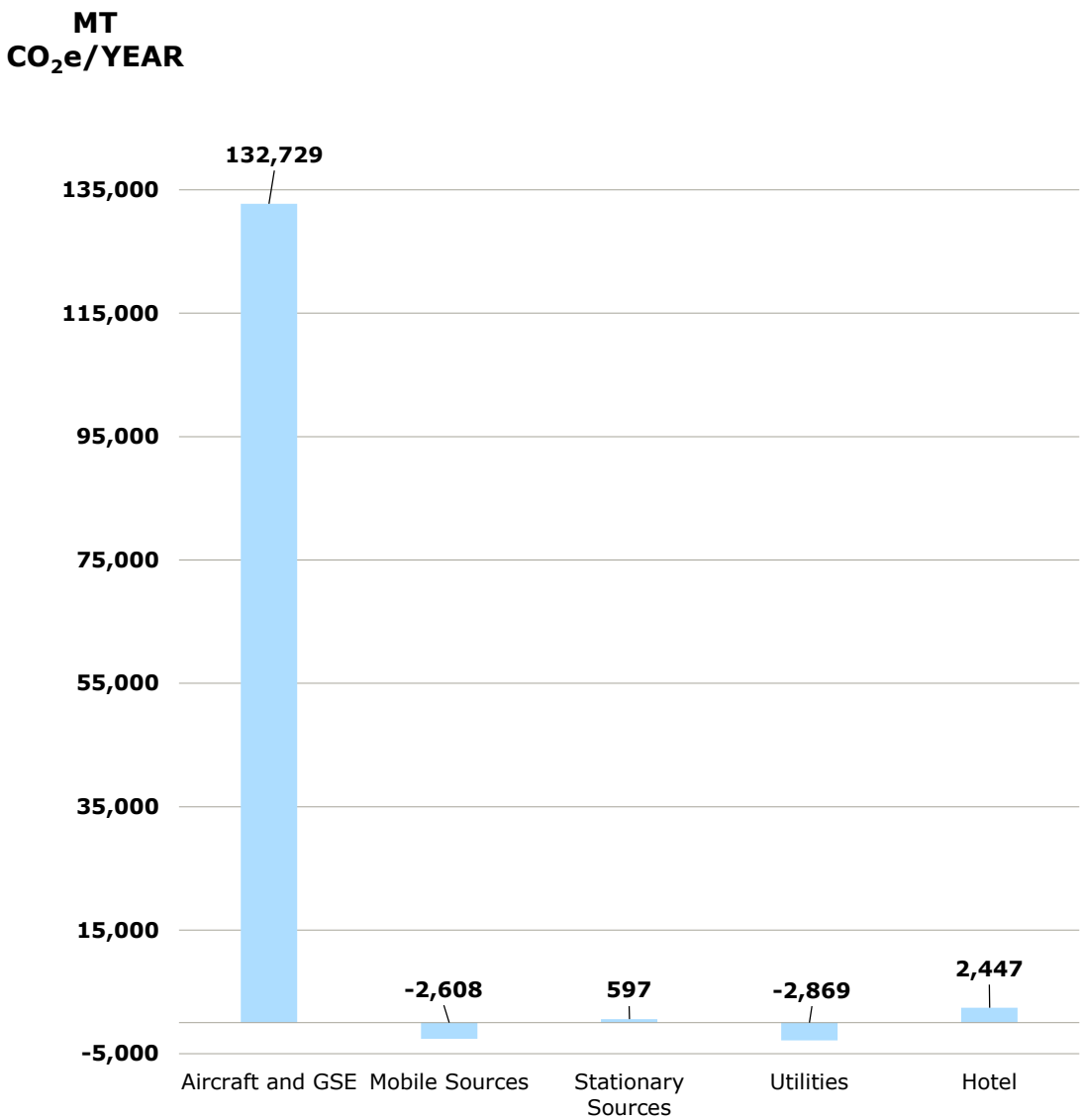
Baseline (2018) and Future Year (2037) Project Emissions Inventories

San Jose Airport
San Jose, CA

FIGURE
2

PROJECT: 1690010078

Proposed Project Incremental (2037) GHG Emissions by Source



RAMBOLL

DRAFTED BY: LK

DATE: 07/15/2019

Proposed Project Incremental Emissions Inventory

San Jose Airport

San Jose, CA

FIGURE

3

PROJECT: 1690010078

APPENDIX A
CALEEMOD® AND ACEIT OUTPUTS FOR CONSTRUCTION EMISSIONS CALCULATIONS

APPENDIX A-1
CALEEMOD® OUTPUTS

Project T-4 (Run 1)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	5,000.00	Space	11.50	2,500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parking Structure

Land Use - Landside Development

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	150000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	T24E	3.92	0.00
tblLandUse	LandUseSquareFeet	2,000,000.00	2,500,000.00
tblLandUse	LotAcreage	45.00	11.50
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6955	6.7514	5.6517	0.0225	1.3272	0.1392	1.4664	0.4042	0.1302	0.5344	0.0000	2,083.8422	2,083.8422	0.1553	0.0000	2,087.7235
2023	0.8067	2.4376	2.5097	0.0106	0.5691	0.0452	0.6143	0.1545	0.0424	0.1969	0.0000	982.7015	982.7015	0.0596	0.0000	984.1911
Maximum	**0.8067**	**6.7514**	**5.6517**	**0.0225**	**1.3272**	**0.1392**	**1.4664**	**0.4042**	**0.1302**	**0.5344**	**0.0000**	**2,083.8422**	**2,083.8422**	**0.1553**	**0.0000**	**2,087.7235**

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					
2022	0.6955	6.7514	5.6517	0.0225	1.3272	0.1392	1.4664	0.4042	0.1302	0.5344	0.0000	2,083.8418	2,083.8418	0.1553	0.0000	2,087.7231
2023	0.8067	2.4376	2.5097	0.0106	0.5691	0.0452	0.6143	0.1545	0.0424	0.1969	0.0000	982.7013	982.7013	0.0596	0.0000	984.1909
Maximum	**0.8067**	**6.7514**	**5.6517**	**0.0225**	**1.3272**	**0.1392**	**1.4664**	**0.4042**	**0.1302**	**0.5344**	**0.0000**	**2,083.8418**	**2,083.8418**	**0.1553**	**0.0000**	**2,087.7231**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	1.2417	1.2417
2	4-1-2022	6-30-2022	2.0448	2.0448
3	7-1-2022	9-30-2022	2.0673	2.0673
4	10-1-2022	12-31-2022	2.1000	2.1000
5	1-1-2023	3-31-2023	1.6769	1.6769
6	4-1-2023	6-30-2023	1.2850	1.2850
7	7-1-2023	9-30-2023	0.2728	0.2728
		Highest	2.1000	2.1000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/25/2022	5	30	
4	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
5	Paving	Paving	5/20/2023	6/16/2023	5	20	
6	Architectural Coating	Architectural Coating	6/17/2023	7/14/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 11.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 150,000 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,050.00	410.00	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
Architectural Coating	1	210.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

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	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	**4.3000e-004**	**2.9000e-004**	**3.1500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9490**	**0.9490**	**2.0000e-005**	**0.0000**	**0.9495**

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	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	**4.3000e-004**	**2.9000e-004**	**3.1500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9490**	**0.9490**	**2.0000e-005**	**0.0000**	**0.9495**

3.3 Site Preparation - 2022

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	1.8900e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5694	0.5694	1.0000e-005	0.0000	0.5697
Total	**2.6000e-004**	**1.7000e-004**	**1.8900e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5694**	**0.5694**	**1.0000e-005**	**0.0000**	**0.5697**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	1.8900e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5694	0.5694	1.0000e-005	0.0000	0.5697
Total	**2.6000e-004**	**1.7000e-004**	**1.8900e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5694**	**0.5694**	**1.0000e-005**	**0.0000**	**0.5697**

3.4 Grading - 2022

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1301**	**0.0245**	**0.1546**	**0.0540**	**0.0226**	**0.0765**	**0.0000**	**81.8019**	**81.8019**	**0.0265**	**0.0000**	**82.4633**

3.4 Grading - 2022

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	8.6000e-004	5.7000e-004	6.3100e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.8981	1.8981	4.0000e-005	0.0000	1.8991
Total	**8.6000e-004**	**5.7000e-004**	**6.3100e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8981**	**1.8981**	**4.0000e-005**	**0.0000**	**1.8991**

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1301**	**0.0245**	**0.1546**	**0.0540**	**0.0226**	**0.0765**	**0.0000**	**81.8018**	**81.8018**	**0.0265**	**0.0000**	**82.4632**

3.4 Grading - 2022

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	8.6000e-004	5.7000e-004	6.3100e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.8981	1.8981	4.0000e-005	0.0000	1.8991
Total	**8.6000e-004**	**5.7000e-004**	**6.3100e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8981**	**1.8981**	**4.0000e-005**	**0.0000**	**1.8991**

3.5 Building Construction - 2022

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	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7252	231.7252	0.0555	0.0000	233.1131
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7252**	**231.7252**	**0.0555**	**0.0000**	**233.1131**

3.5 Building Construction - 2022

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	0.1248	3.9826	1.0563	0.0110	0.2698	8.1200e-003	0.2779	0.0780	7.7600e-003	0.0858	0.0000	1,051.8602	1,051.8602	0.0442	0.0000	1,052.9650
Worker	0.3019	0.2009	2.2077	7.3400e-003	0.8328	5.1200e-003	0.8379	0.2215	4.7200e-003	0.2262	0.0000	664.3284	664.3284	0.0141	0.0000	664.6800
Total	**0.4267**	**4.1836**	**3.2640**	**0.0183**	**1.1025**	**0.0132**	**1.1158**	**0.2995**	**0.0125**	**0.3120**	**0.0000**	**1,716.1886**	**1,716.1886**	**0.0583**	**0.0000**	**1,717.6449**

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	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7250	231.7250	0.0555	0.0000	233.1128
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7250**	**231.7250**	**0.0555**	**0.0000**	**233.1128**

3.5 Building Construction - 2022

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	0.1248	3.9826	1.0563	0.0110	0.2698	8.1200e-003	0.2779	0.0780	7.7600e-003	0.0858	0.0000	1,051.8602	1,051.8602	0.0442	0.0000	1,052.9650
Worker	0.3019	0.2009	2.2077	7.3400e-003	0.8328	5.1200e-003	0.8379	0.2215	4.7200e-003	0.2262	0.0000	664.3284	664.3284	0.0141	0.0000	664.6800
Total	**0.4267**	**4.1836**	**3.2640**	**0.0183**	**1.1025**	**0.0132**	**1.1158**	**0.2995**	**0.0125**	**0.3120**	**0.0000**	**1,716.1886**	**1,716.1886**	**0.0583**	**0.0000**	**1,717.6449**

3.5 Building Construction - 2023

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	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9024	115.9024	0.0276	0.0000	116.5917
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9024**	**115.9024**	**0.0276**	**0.0000**	**116.5917**

3.5 Building Construction - 2023

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	0.0470	1.5091	0.4744	5.3200e-003	0.1349	1.7600e-003	0.1367	0.0390	1.6800e-003	0.0407	0.0000	510.9773	510.9773	0.0188	0.0000	511.4476
Worker	0.1413	0.0904	1.0156	3.5300e-003	0.4164	2.5100e-003	0.4189	0.1107	2.3100e-003	0.1131	0.0000	319.5468	319.5468	6.3000e-003	0.0000	319.7044
Total	**0.1884**	**1.5995**	**1.4900**	**8.8500e-003**	**0.5513**	**4.2700e-003**	**0.5556**	**0.1497**	**3.9900e-003**	**0.1537**	**0.0000**	**830.5241**	**830.5241**	**0.0251**	**0.0000**	**831.1520**

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	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9022	115.9022	0.0276	0.0000	116.5915
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9022**	**115.9022**	**0.0276**	**0.0000**	**116.5915**

3.5 Building Construction - 2023

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	0.0470	1.5091	0.4744	5.3200e-003	0.1349	1.7600e-003	0.1367	0.0390	1.6800e-003	0.0407	0.0000	510.9773	510.9773	0.0188	0.0000	511.4476
Worker	0.1413	0.0904	1.0156	3.5300e-003	0.4164	2.5100e-003	0.4189	0.1107	2.3100e-003	0.1131	0.0000	319.5468	319.5468	6.3000e-003	0.0000	319.7044
Total	**0.1884**	**1.5995**	**1.4900**	**8.8500e-003**	**0.5513**	**4.2700e-003**	**0.5556**	**0.1497**	**3.9900e-003**	**0.1537**	**0.0000**	**830.5241**	**830.5241**	**0.0251**	**0.0000**	**831.1520**

3.6 Paving - 2023

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	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

3.6 Paving - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

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	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

3.6 Paving - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

3.7 Architectural Coating - 2023

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	0.5214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.5234**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

3.7 Architectural Coating - 2023

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	5.6500e-003	3.6100e-003	0.0406	1.4000e-004	0.0167	1.0000e-004	0.0168	4.4300e-003	9.0000e-005	4.5200e-003	0.0000	12.7819	12.7819	2.5000e-004	0.0000	12.7882
Total	**5.6500e-003**	**3.6100e-003**	**0.0406**	**1.4000e-004**	**0.0167**	**1.0000e-004**	**0.0168**	**4.4300e-003**	**9.0000e-005**	**4.5200e-003**	**0.0000**	**12.7819**	**12.7819**	**2.5000e-004**	**0.0000**	**12.7882**

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	0.5214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.5234**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

3.7 Architectural Coating - 2023

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	5.6500e-003	3.6100e-003	0.0406	1.4000e-004	0.0167	1.0000e-004	0.0168	4.4300e-003	9.0000e-005	4.5200e-003	0.0000	12.7819	12.7819	2.5000e-004	0.0000	12.7882
Total	**5.6500e-003**	**3.6100e-003**	**0.0406**	**1.4000e-004**	**0.0167**	**1.0000e-004**	**0.0168**	**4.4300e-003**	**9.0000e-005**	**4.5200e-003**	**0.0000**	**12.7819**	**12.7819**	**2.5000e-004**	**0.0000**	**12.7882**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project T-6 (Run 2)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	11.00	1000sqft	0.25	11,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parking Structure

Land Use - Landside Development

Construction Phase -

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	5500	0
tblAreaCoating	Area_Nonresidential_Interior	16500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00
tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblSolidWaste	SolidWasteGenerationRate	10.34	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	4.5000e-003	0.0395	0.0394	6.0000e-005	4.0000e-004	2.3400e-003	2.7400e-003	1.1000e-004	2.2300e-003	2.3400e-003	0.0000	5.5439	5.5439	9.9000e-004	0.0000	5.5687
Maximum	**4.5000e-003**	**0.0395**	**0.0394**	**6.0000e-005**	**4.0000e-004**	**2.3400e-003**	**2.7400e-003**	**1.1000e-004**	**2.2300e-003**	**2.3400e-003**	**0.0000**	**5.5439**	**5.5439**	**9.9000e-004**	**0.0000**	**5.5687**

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					
2020	4.5000e-003	0.0395	0.0394	6.0000e-005	4.0000e-004	2.3400e-003	2.7400e-003	1.1000e-004	2.2300e-003	2.3400e-003	0.0000	5.5438	5.5438	9.9000e-004	0.0000	5.5686
Maximum	**4.5000e-003**	**0.0395**	**0.0394**	**6.0000e-005**	**4.0000e-004**	**2.3400e-003**	**2.7400e-003**	**1.1000e-004**	**2.2300e-003**	**2.3400e-003**	**0.0000**	**5.5438**	**5.5438**	**9.9000e-004**	**0.0000**	**5.5686**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.0440	0.0440
		Highest	0.0440	0.0440

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.8070	4.0042	4.8112	0.0831	1.9900e-003	7.4823
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.8070**	**4.0042**	**4.8112**	**0.0831**	**1.9900e-003**	**7.4823**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.8070	4.0042	4.8112	0.0831	1.9900e-003	7.4823
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.8070**	**4.0042**	**4.8112**	**0.0831**	**1.9900e-003**	**7.4823**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/14/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (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	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	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	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	**4.3400e-003**	**0.0394**	**0.0381**	**6.0000e-005**		**2.3400e-003**	**2.3400e-003**		**2.2300e-003**	**2.2300e-003**	**0.0000**	**5.2038**	**5.2038**	**9.8000e-004**	**0.0000**	**5.2284**

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	1.7000e-004	1.2000e-004	1.2500e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3401	0.3401	1.0000e-005	0.0000	0.3403
Total	**1.7000e-004**	**1.2000e-004**	**1.2500e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3401**	**0.3401**	**1.0000e-005**	**0.0000**	**0.3403**

3.2 Demolition - 2020

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	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	**4.3400e-003**	**0.0394**	**0.0381**	**6.0000e-005**		**2.3400e-003**	**2.3400e-003**		**2.2300e-003**	**2.2300e-003**	**0.0000**	**5.2038**	**5.2038**	**9.8000e-004**	**0.0000**	**5.2284**

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	1.7000e-004	1.2000e-004	1.2500e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3401	0.3401	1.0000e-005	0.0000	0.3403
Total	**1.7000e-004**	**1.2000e-004**	**1.2500e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3401**	**0.3401**	**1.0000e-005**	**0.0000**	**0.3403**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.8112	0.0831	1.9900e-003	7.4823
Unmitigated	4.8112	0.0831	1.9900e-003	7.4823

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	2.54375 / 0	4.8112	0.0831	1.9900e-003	7.4823
Total		**4.8112**	**0.0831**	**1.9900e-003**	**7.4823**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	2.54375 / 0	4.8112	0.0831	1.9900e-003	7.4823
Total		**4.8112**	**0.0831**	**1.9900e-003**	**7.4823**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project T-8 (Run 3)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	6,000.00	Space	10.70	2,335,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Parking Structure

Land Use - Landside Development

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	140100	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	NT24E	0.19	0.00
tblEnergyUse	T24E	3.92	0.00
tblLandUse	LandUseSquareFeet	2,400,000.00	2,335,000.00
tblLandUse	LotAcreage	54.00	10.70
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.8186	7.8772	6.1724	0.0223	1.2650	0.1999	1.4649	0.3873	0.1872	0.5745	0.0000	2,055.2773	2,055.2773	0.1615	0.0000	2,059.3149
2021	0.8107	3.0342	2.6381	0.0103	0.5214	0.0615	0.5829	0.1415	0.0577	0.1993	0.0000	951.6456	951.6456	0.0627	0.0000	953.2134
Maximum	**0.8186**	**7.8772**	**6.1724**	**0.0223**	**1.2650**	**0.1999**	**1.4649**	**0.3873**	**0.1872**	**0.5745**	**0.0000**	**2,055.2773**	**2,055.2773**	**0.1615**	**0.0000**	**2,059.3149**

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					
2020	0.8186	7.8772	6.1724	0.0223	1.2650	0.1999	1.4649	0.3873	0.1872	0.5745	0.0000	2,055.2769	2,055.2769	0.1615	0.0000	2,059.3145
2021	0.8107	3.0342	2.6381	0.0103	0.5214	0.0615	0.5829	0.1415	0.0577	0.1993	0.0000	951.6454	951.6454	0.0627	0.0000	953.2132
Maximum	**0.8186**	**7.8772**	**6.1724**	**0.0223**	**1.2650**	**0.1999**	**1.4649**	**0.3873**	**0.1872**	**0.5745**	**0.0000**	**2,055.2769**	**2,055.2769**	**0.1615**	**0.0000**	**2,059.3145**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.6023	1.6023
2	**4-1-2020**	**6-30-2020**	2.3195	2.3195
3	**7-1-2020**	**9-30-2020**	2.3449	2.3449
4	**10-1-2020**	**12-31-2020**	2.3862	2.3862
5	**1-1-2021**	**3-31-2021**	2.1073	2.1073
6	**4-1-2021**	**6-30-2021**	1.5242	1.5242
7	**7-1-2021**	**9-30-2021**	0.2389	0.2389
		Highest	2.3862	2.3862

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/11/2020	5	10	
3	Grading	Grading	2/12/2020	3/24/2020	5	30	
4	Building Construction	Building Construction	3/25/2020	5/18/2021	5	300	
5	Paving	Paving	5/19/2021	6/15/2021	5	20	
6	Architectural Coating	Architectural Coating	6/16/2021	7/13/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 140,100 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	981.00	383.00	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
Architectural Coating	1	196.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.3 Site Preparation - 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					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 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	3.0000e-004	2.1000e-004	2.2500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6121	0.6121	2.0000e-005	0.0000	0.6125
Total	**3.0000e-004**	**2.1000e-004**	**2.2500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6121**	**0.6121**	**2.0000e-005**	**0.0000**	**0.6125**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 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	3.0000e-004	2.1000e-004	2.2500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6121	0.6121	2.0000e-005	0.0000	0.6125
Total	**3.0000e-004**	**2.1000e-004**	**2.2500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6121**	**0.6121**	**2.0000e-005**	**0.0000**	**0.6125**

3.4 Grading - 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					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.1301**	**0.0326**	**0.1627**	**0.0540**	**0.0300**	**0.0840**	**0.0000**	**81.7264**	**81.7264**	**0.0264**	**0.0000**	**82.3872**

3.4 Grading - 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	1.0000e-003	7.2000e-004	7.5100e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	2.0405	2.0405	5.0000e-005	0.0000	2.0417
Total	**1.0000e-003**	**7.2000e-004**	**7.5100e-003**	**2.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**2.0405**	**2.0405**	**5.0000e-005**	**0.0000**	**2.0417**

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.1301**	**0.0326**	**0.1627**	**0.0540**	**0.0300**	**0.0840**	**0.0000**	**81.7263**	**81.7263**	**0.0264**	**0.0000**	**82.3871**

3.4 Grading - 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	1.0000e-003	7.2000e-004	7.5100e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	2.0405	2.0405	5.0000e-005	0.0000	2.0417
Total	**1.0000e-003**	**7.2000e-004**	**7.5100e-003**	**2.0000e-005**	**2.3800e-003**	**2.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**2.0405**	**2.0405**	**5.0000e-005**	**0.0000**	**2.0417**

3.5 Building Construction - 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	0.2141	1.9378	1.7017	2.7200e-003		0.1128	0.1128		0.1061	0.1061	0.0000	233.9261	233.9261	0.0571	0.0000	235.3528
Total	**0.2141**	**1.9378**	**1.7017**	**2.7200e-003**		**0.1128**	**0.1128**		**0.1061**	**0.1061**	**0.0000**	**233.9261**	**233.9261**	**0.0571**	**0.0000**	**235.3528**

3.5 Building Construction - 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	0.1533	4.4046	1.1731	0.0106	0.2545	0.0218	0.2763	0.0736	0.0209	0.0944	0.0000	1,011.3391	1,011.3391	0.0464	0.0000	1,012.4986
Worker	0.3291	0.2365	2.4796	7.4500e-003	0.7858	5.0800e-003	0.7909	0.2090	4.6800e-003	0.2137	0.0000	673.8989	673.8989	0.0165	0.0000	674.3122
Total	**0.4824**	**4.6411**	**3.6527**	**0.0180**	**1.0403**	**0.0269**	**1.0672**	**0.2826**	**0.0256**	**0.3081**	**0.0000**	**1,685.2380**	**1,685.2380**	**0.0629**	**0.0000**	**1,686.8108**

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	0.2141	1.9378	1.7017	2.7200e-003		0.1128	0.1128		0.1061	0.1061	0.0000	233.9258	233.9258	0.0571	0.0000	235.3526
Total	**0.2141**	**1.9378**	**1.7017**	**2.7200e-003**		**0.1128**	**0.1128**		**0.1061**	**0.1061**	**0.0000**	**233.9258**	**233.9258**	**0.0571**	**0.0000**	**235.3526**

3.5 Building Construction - 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	0.1533	4.4046	1.1731	0.0106	0.2545	0.0218	0.2763	0.0736	0.0209	0.0944	0.0000	1,011.3391	1,011.3391	0.0464	0.0000	1,012.4986
Worker	0.3291	0.2365	2.4796	7.4500e-003	0.7858	5.0800e-003	0.7909	0.2090	4.6800e-003	0.2137	0.0000	673.8989	673.8989	0.0165	0.0000	674.3122
Total	**0.4824**	**4.6411**	**3.6527**	**0.0180**	**1.0403**	**0.0269**	**1.0672**	**0.2826**	**0.0256**	**0.3081**	**0.0000**	**1,685.2380**	**1,685.2380**	**0.0629**	**0.0000**	**1,686.8108**

3.5 Building Construction - 2021

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	0.0932	0.8542	0.8122	1.3200e-003		0.0470	0.0470		0.0442	0.0442	0.0000	113.5023	113.5023	0.0274	0.0000	114.1868
Total	**0.0932**	**0.8542**	**0.8122**	**1.3200e-003**		**0.0470**	**0.0470**		**0.0442**	**0.0442**	**0.0000**	**113.5023**	**113.5023**	**0.0274**	**0.0000**	**114.1868**

3.5 Building Construction - 2021

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	0.0612	1.9285	0.5134	5.0700e-003	0.1235	4.2800e-003	0.1277	0.0357	4.0900e-003	0.0398	0.0000	486.1205	486.1205	0.0212	0.0000	486.6501
Worker	0.1481	0.1025	1.0996	3.4900e-003	0.3812	2.4000e-003	0.3836	0.1014	2.2100e-003	0.1036	0.0000	315.5931	315.5931	7.1800e-003	0.0000	315.7725
Total	**0.2093**	**2.0310**	**1.6130**	**8.5600e-003**	**0.5047**	**6.6800e-003**	**0.5114**	**0.1371**	**6.3000e-003**	**0.1434**	**0.0000**	**801.7136**	**801.7136**	**0.0284**	**0.0000**	**802.4226**

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	0.0932	0.8542	0.8122	1.3200e-003		0.0470	0.0470		0.0442	0.0442	0.0000	113.5021	113.5021	0.0274	0.0000	114.1867
Total	**0.0932**	**0.8542**	**0.8122**	**1.3200e-003**		**0.0470**	**0.0470**		**0.0442**	**0.0442**	**0.0000**	**113.5021**	**113.5021**	**0.0274**	**0.0000**	**114.1867**

3.5 Building Construction - 2021

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	0.0612	1.9285	0.5134	5.0700e-003	0.1235	4.2800e-003	0.1277	0.0357	4.0900e-003	0.0398	0.0000	486.1205	486.1205	0.0212	0.0000	486.6501
Worker	0.1481	0.1025	1.0996	3.4900e-003	0.3812	2.4000e-003	0.3836	0.1014	2.2100e-003	0.1036	0.0000	315.5931	315.5931	7.1800e-003	0.0000	315.7725
Total	**0.2093**	**2.0310**	**1.6130**	**8.5600e-003**	**0.5047**	**6.6800e-003**	**0.5114**	**0.1371**	**6.3000e-003**	**0.1434**	**0.0000**	**801.7136**	**801.7136**	**0.0284**	**0.0000**	**802.4226**

3.6 Paving - 2021

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

3.6 Paving - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

3.6 Paving - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

3.7 Architectural Coating - 2021

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	0.4870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.4892**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.7 Architectural Coating - 2021

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	6.0400e-003	4.1800e-003	0.0448	1.4000e-004	0.0156	1.0000e-004	0.0156	4.1300e-003	9.0000e-005	4.2200e-003	0.0000	12.8682	12.8682	2.9000e-004	0.0000	12.8755
Total	**6.0400e-003**	**4.1800e-003**	**0.0448**	**1.4000e-004**	**0.0156**	**1.0000e-004**	**0.0156**	**4.1300e-003**	**9.0000e-005**	**4.2200e-003**	**0.0000**	**12.8682**	**12.8682**	**2.9000e-004**	**0.0000**	**12.8755**

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	0.4870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.4892**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.7 Architectural Coating - 2021

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	6.0400e-003	4.1800e-003	0.0448	1.4000e-004	0.0156	1.0000e-004	0.0156	4.1300e-003	9.0000e-005	4.2200e-003	0.0000	12.8682	12.8682	2.9000e-004	0.0000	12.8755
Total	**6.0400e-003**	**4.1800e-003**	**0.0448**	**1.4000e-004**	**0.0156**	**1.0000e-004**	**0.0156**	**4.1300e-003**	**9.0000e-005**	**4.2200e-003**	**0.0000**	**12.8682**	**12.8682**	**2.9000e-004**	**0.0000**	**12.8755**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project T-13 (Run 4a)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	375.00	1000sqft	4.60	375,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - (Gates 29-40)

Land Use - SJC Modeling Basis

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	187500	0
tblAreaCoating	Area_Nonresidential_Interior	562500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	8.61	4.60
tblSolidWaste	SolidWasteGenerationRate	352.50	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.2662	2.4204	2.6382	6.6700e-003	0.2628	0.0873	0.3501	0.0903	0.0818	0.1721	0.0000	598.4614	598.4614	0.0866	0.0000	600.6271
2025	1.9664	0.0873	0.1437	2.5000e-004	4.5400e-003	3.9300e-003	8.4700e-003	1.2100e-003	3.6700e-003	4.8800e-003	0.0000	22.0174	22.0174	5.1100e-003	0.0000	22.1452
Maximum	**1.9664**	**2.4204**	**2.6382**	**6.6700e-003**	**0.2628**	**0.0873**	**0.3501**	**0.0903**	**0.0818**	**0.1721**	**0.0000**	**598.4614**	**598.4614**	**0.0866**	**0.0000**	**600.6271**

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					
2024	0.2662	2.4204	2.6382	6.6700e-003	0.2628	0.0873	0.3501	0.0903	0.0818	0.1721	0.0000	598.4611	598.4611	0.0866	0.0000	600.6267
2025	1.9664	0.0873	0.1437	2.5000e-004	4.5400e-003	3.9300e-003	8.4700e-003	1.2100e-003	3.6700e-003	4.8800e-003	0.0000	22.0174	22.0174	5.1100e-003	0.0000	22.1452
Maximum	**1.9664**	**2.4204**	**2.6382**	**6.6700e-003**	**0.2628**	**0.0873**	**0.3501**	**0.0903**	**0.0818**	**0.1721**	**0.0000**	**598.4611**	**598.4611**	**0.0866**	**0.0000**	**600.6267**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2024**	**3-31-2024**	0.7023	0.7023
2	**4-1-2024**	**6-30-2024**	0.6527	0.6527
3	**7-1-2024**	**9-30-2024**	0.6599	0.6599
4	**10-1-2024**	**12-31-2024**	0.6635	0.6635
5	**1-1-2025**	**3-31-2025**	1.9598	1.9598
		Highest	1.9598	1.9598

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	27.5119	0.0000	27.5119	2.8257	0.0667	118.0382
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**27.5119**	**0.0000**	**27.5119**	**2.8257**	**0.0667**	**118.0382**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	27.5119	0.0000	27.5119	2.8257	0.0667	118.0382
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**27.5119**	**0.0000**	**27.5119**	**2.8257**	**0.0667**	**118.0382**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	1/26/2024	5	20	
2	Site Preparation	Site Preparation	1/27/2024	2/2/2024	5	5	
3	Grading	Grading	2/3/2024	2/14/2024	5	8	
4	Building Construction	Building Construction	2/15/2024	1/1/2025	5	230	
5	Paving	Paving	1/2/2025	1/27/2025	5	18	
6	Architectural Coating	Architectural Coating	1/28/2025	2/20/2025	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 562,500; Non-Residential Outdoor: 187,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	61.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2024

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	0.0224	0.2088	0.1971	3.9000e-004		9.6000e-003	9.6000e-003		8.9200e-003	8.9200e-003	0.0000	33.9961	33.9961	9.5100e-003	0.0000	34.2338
Total	**0.0224**	**0.2088**	**0.1971**	**3.9000e-004**		**9.6000e-003**	**9.6000e-003**		**8.9200e-003**	**8.9200e-003**	**0.0000**	**33.9961**	**33.9961**	**9.5100e-003**	**0.0000**	**34.2338**

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

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	0.0224	0.2088	0.1971	3.9000e-004		9.6000e-003	9.6000e-003		8.9200e-003	8.9200e-003	0.0000	33.9960	33.9960	9.5100e-003	0.0000	34.2338
Total	**0.0224**	**0.2088**	**0.1971**	**3.9000e-004**		**9.6000e-003**	**9.6000e-003**		**8.9200e-003**	**8.9200e-003**	**0.0000**	**33.9960**	**33.9960**	**9.5100e-003**	**0.0000**	**34.2338**

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

3.3 Site Preparation - 2024

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0452**	**3.0700e-003**	**0.0482**	**0.0248**	**2.8300e-003**	**0.0277**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.3 Site Preparation - 2024

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	1.1000e-004	7.0000e-005	8.1000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2631	0.2631	0.0000	0.0000	0.2633
Total	**1.1000e-004**	**7.0000e-005**	**8.1000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2631**	**0.2631**	**0.0000**	**0.0000**	**0.2633**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0452**	**3.0700e-003**	**0.0482**	**0.0248**	**2.8300e-003**	**0.0277**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.3 Site Preparation - 2024

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	1.1000e-004	7.0000e-005	8.1000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2631	0.2631	0.0000	0.0000	0.2633
Total	**1.1000e-004**	**7.0000e-005**	**8.1000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2631**	**0.2631**	**0.0000**	**0.0000**	**0.2633**

3.4 Grading - 2024

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0681	0.0590	1.2000e-004		2.9000e-003	2.9000e-003		2.6700e-003	2.6700e-003	0.0000	10.4256	10.4256	3.3700e-003	0.0000	10.5099
Total	**6.6500e-003**	**0.0681**	**0.0590**	**1.2000e-004**	**0.0262**	**2.9000e-003**	**0.0291**	**0.0135**	**2.6700e-003**	**0.0161**	**0.0000**	**10.4256**	**10.4256**	**3.3700e-003**	**0.0000**	**10.5099**

3.4 Grading - 2024

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	1.5000e-004	9.0000e-005	1.0800e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3509	0.3509	1.0000e-005	0.0000	0.3510
Total	**1.5000e-004**	**9.0000e-005**	**1.0800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3509**	**0.3509**	**1.0000e-005**	**0.0000**	**0.3510**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0681	0.0590	1.2000e-004		2.9000e-003	2.9000e-003		2.6700e-003	2.6700e-003	0.0000	10.4256	10.4256	3.3700e-003	0.0000	10.5099
Total	**6.6500e-003**	**0.0681**	**0.0590**	**1.2000e-004**	**0.0262**	**2.9000e-003**	**0.0291**	**0.0135**	**2.6700e-003**	**0.0161**	**0.0000**	**10.4256**	**10.4256**	**3.3700e-003**	**0.0000**	**10.5099**

3.4 Grading - 2024

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	1.5000e-004	9.0000e-005	1.0800e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3509	0.3509	1.0000e-005	0.0000	0.3510
Total	**1.5000e-004**	**9.0000e-005**	**1.0800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3509**	**0.3509**	**1.0000e-005**	**0.0000**	**0.3510**

3.5 Building Construction - 2024

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	0.1685	1.5393	1.8511	3.0900e-003		0.0702	0.0702		0.0661	0.0661	0.0000	265.4672	265.4672	0.0628	0.0000	267.0366
Total	**0.1685**	**1.5393**	**1.8511**	**3.0900e-003**		**0.0702**	**0.0702**		**0.0661**	**0.0661**	**0.0000**	**265.4672**	**265.4672**	**0.0628**	**0.0000**	**267.0366**

3.5 Building Construction - 2024

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	0.0155	0.5077	0.1561	1.8000e-003	0.0460	5.9000e-004	0.0466	0.0133	5.7000e-004	0.0139	0.0000	172.9296	172.9296	6.2800e-003	0.0000	173.0865
Worker	0.0458	0.0281	0.3245	1.1700e-003	0.1435	8.5000e-004	0.1443	0.0382	7.8000e-004	0.0389	0.0000	105.7877	105.7877	1.9600e-003	0.0000	105.8366
Total	**0.0613**	**0.5358**	**0.4806**	**2.9700e-003**	**0.1894**	**1.4400e-003**	**0.1909**	**0.0515**	**1.3500e-003**	**0.0528**	**0.0000**	**278.7172**	**278.7172**	**8.2400e-003**	**0.0000**	**278.9231**

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	0.1685	1.5393	1.8511	3.0900e-003		0.0702	0.0702		0.0661	0.0661	0.0000	265.4669	265.4669	0.0628	0.0000	267.0363
Total	**0.1685**	**1.5393**	**1.8511**	**3.0900e-003**		**0.0702**	**0.0702**		**0.0661**	**0.0661**	**0.0000**	**265.4669**	**265.4669**	**0.0628**	**0.0000**	**267.0363**

3.5 Building Construction - 2024

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	0.0155	0.5077	0.1561	1.8000e-003	0.0460	5.9000e-004	0.0466	0.0133	5.7000e-004	0.0139	0.0000	172.9296	172.9296	6.2800e-003	0.0000	173.0865
Worker	0.0458	0.0281	0.3245	1.1700e-003	0.1435	8.5000e-004	0.1443	0.0382	7.8000e-004	0.0389	0.0000	105.7877	105.7877	1.9600e-003	0.0000	105.8366
Total	**0.0613**	**0.5358**	**0.4806**	**2.9700e-003**	**0.1894**	**1.4400e-003**	**0.1909**	**0.0515**	**1.3500e-003**	**0.0528**	**0.0000**	**278.7172**	**278.7172**	**8.2400e-003**	**0.0000**	**278.9231**

3.5 Building Construction - 2025

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	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004	0.0000	1.1596	1.1596	2.7000e-004	0.0000	1.1664
Total	**6.8000e-004**	**6.2300e-003**	**8.0400e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.1596**	**1.1596**	**2.7000e-004**	**0.0000**	**1.1664**

3.5 Building Construction - 2025

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	7.0000e-005	2.1900e-003	6.6000e-004	1.0000e-005	2.0000e-004	0.0000	2.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.7503	0.7503	3.0000e-005	0.0000	0.7509
Worker	1.9000e-004	1.1000e-004	1.3100e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4433	0.4433	1.0000e-005	0.0000	0.4435
Total	**2.6000e-004**	**2.3000e-003**	**1.9700e-003**	**1.0000e-005**	**8.3000e-004**	**0.0000**	**8.3000e-004**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**1.1935**	**1.1935**	**4.0000e-005**	**0.0000**	**1.1944**

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	6.8000e-004	6.2300e-003	8.0400e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.5000e-004	2.5000e-004	0.0000	1.1596	1.1596	2.7000e-004	0.0000	1.1664
Total	**6.8000e-004**	**6.2300e-003**	**8.0400e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.1596**	**1.1596**	**2.7000e-004**	**0.0000**	**1.1664**

3.5 Building Construction - 2025

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	7.0000e-005	2.1900e-003	6.6000e-004	1.0000e-005	2.0000e-004	0.0000	2.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.7503	0.7503	3.0000e-005	0.0000	0.7509
Worker	1.9000e-004	1.1000e-004	1.3100e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4433	0.4433	1.0000e-005	0.0000	0.4435
Total	**2.6000e-004**	**2.3000e-003**	**1.9700e-003**	**1.0000e-005**	**8.3000e-004**	**0.0000**	**8.3000e-004**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**1.1935**	**1.1935**	**4.0000e-005**	**0.0000**	**1.1944**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2025

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	4.3000e-004	2.5000e-004	2.9900e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0100	1.0100	2.0000e-005	0.0000	1.0104
Total	**4.3000e-004**	**2.5000e-004**	**2.9900e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0100**	**1.0100**	**2.0000e-005**	**0.0000**	**1.0104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2025

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	4.3000e-004	2.5000e-004	2.9900e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0100	1.0100	2.0000e-005	0.0000	1.0104
Total	**4.3000e-004**	**2.5000e-004**	**2.9900e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0100**	**1.0100**	**2.0000e-005**	**0.0000**	**1.0104**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**1.9569**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2025

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	6.9000e-004	4.1000e-004	4.7900e-003	2.0000e-005	2.2800e-003	1.0000e-005	2.3000e-003	6.1000e-004	1.0000e-005	6.2000e-004	0.0000	1.6160	1.6160	3.0000e-005	0.0000	1.6167
Total	**6.9000e-004**	**4.1000e-004**	**4.7900e-003**	**2.0000e-005**	**2.2800e-003**	**1.0000e-005**	**2.3000e-003**	**6.1000e-004**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**1.6160**	**1.6160**	**3.0000e-005**	**0.0000**	**1.6167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**1.9569**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2025

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	6.9000e-004	4.1000e-004	4.7900e-003	2.0000e-005	2.2800e-003	1.0000e-005	2.3000e-003	6.1000e-004	1.0000e-005	6.2000e-004	0.0000	1.6160	1.6160	3.0000e-005	0.0000	1.6167
Total	**6.9000e-004**	**4.1000e-004**	**4.7900e-003**	**2.0000e-005**	**2.2800e-003**	**1.0000e-005**	**2.3000e-003**	**6.1000e-004**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**1.6160**	**1.6160**	**3.0000e-005**	**0.0000**	**1.6167**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.5119	2.8257	0.0667	118.0382
Unmitigated	27.5119	2.8257	0.0667	118.0382

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	86.7188 / 0	27.5119	2.8257	0.0667	118.0382
Total		**27.5119**	**2.8257**	**0.0667**	**118.0382**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	86.7188 / 0	27.5119	2.8257	0.0667	118.0382
Total		**27.5119**	**2.8257**	**0.0667**	**118.0382**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project T-13 (Run 4b)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	375.00	1000sqft	4.60	375,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Gates 41-42

Land Use - SJC Modeling Basis

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	187500	0
tblAreaCoating	Area_Nonresidential_Interior	562500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	8.61	4.60
tblSolidWaste	SolidWasteGenerationRate	352.50	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2033	0.2219	1.5321	2.4460	6.8500e-003	0.2612	0.0234	0.2846	0.0898	0.0233	0.1132	0.0000	607.1566	607.1566	0.0211	0.0000	607.6838
2034	1.9701	0.0822	0.1669	3.4000e-004	6.1900e-003	2.7100e-003	8.9000e-003	1.6600e-003	2.7000e-003	4.3600e-003	0.0000	29.1253	29.1253	1.2000e-003	0.0000	29.1553
Maximum	**1.9701**	**1.5321**	**2.4460**	**6.8500e-003**	**0.2612**	**0.0234**	**0.2846**	**0.0898**	**0.0233**	**0.1132**	**0.0000**	**607.1566**	**607.1566**	**0.0211**	**0.0000**	**607.6838**

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					
2033	0.2219	1.5321	2.4460	6.8500e-003	0.2612	0.0234	0.2846	0.0898	0.0233	0.1132	0.0000	607.1562	607.1562	0.0211	0.0000	607.6834
2034	1.9701	0.0822	0.1669	3.4000e-004	6.1900e-003	2.7100e-003	8.9000e-003	1.6600e-003	2.7000e-003	4.3600e-003	0.0000	29.1252	29.1252	1.2000e-003	0.0000	29.1553
Maximum	**1.9701**	**1.5321**	**2.4460**	**6.8500e-003**	**0.2612**	**0.0234**	**0.2846**	**0.0898**	**0.0233**	**0.1132**	**0.0000**	**607.1562**	**607.1562**	**0.0211**	**0.0000**	**607.6834**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2033**	**3-31-2033**	0.4108	0.4108
2	**4-1-2033**	**6-30-2033**	0.4448	0.4448
3	**7-1-2033**	**9-30-2033**	0.4496	0.4496
4	**10-1-2033**	**12-31-2033**	0.4519	0.4519
5	**1-1-2034**	**3-31-2034**	1.9600	1.9600
		Highest	1.9600	1.9600

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	27.5119	0.0000	27.5119	2.8257	0.0667	118.0382
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**27.5119**	**0.0000**	**27.5119**	**2.8257**	**0.0667**	**118.0382**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	27.5119	0.0000	27.5119	2.8257	0.0667	118.0382
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**27.5119**	**0.0000**	**27.5119**	**2.8257**	**0.0667**	**118.0382**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2033	1/28/2033	5	20	
2	Site Preparation	Site Preparation	1/29/2033	2/4/2033	5	5	
3	Grading	Grading	2/5/2033	2/16/2033	5	8	
4	Building Construction	Building Construction	2/17/2033	1/4/2034	5	230	
5	Paving	Paving	1/5/2034	1/30/2034	5	18	
6	Architectural Coating	Architectural Coating	1/31/2034	2/23/2034	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 562,500; Non-Residential Outdoor: 187,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	61.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2033

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	0.0208	0.0978	0.1892	4.6000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	39.7218	39.7218	1.6800e-003	0.0000	39.7637
Total	**0.0208**	**0.0978**	**0.1892**	**4.6000e-004**		**3.5100e-003**	**3.5100e-003**		**3.5100e-003**	**3.5100e-003**	**0.0000**	**39.7218**	**39.7218**	**1.6800e-003**	**0.0000**	**39.7637**

3.2 Demolition - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.1000e-004	1.5300e-003	1.0000e-005	1.1900e-003	0.0000	1.1900e-003	3.2000e-004	0.0000	3.2000e-004	0.0000	0.6747	0.6747	1.0000e-005	0.0000	0.6749
Total	**2.2000e-004**	**1.1000e-004**	**1.5300e-003**	**1.0000e-005**	**1.1900e-003**	**0.0000**	**1.1900e-003**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**0.6747**	**0.6747**	**1.0000e-005**	**0.0000**	**0.6749**

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	0.0208	0.0978	0.1892	4.6000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	39.7218	39.7218	1.6800e-003	0.0000	39.7637
Total	**0.0208**	**0.0978**	**0.1892**	**4.6000e-004**		**3.5100e-003**	**3.5100e-003**		**3.5100e-003**	**3.5100e-003**	**0.0000**	**39.7218**	**39.7218**	**1.6800e-003**	**0.0000**	**39.7637**

3.2 Demolition - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.1000e-004	1.5300e-003	1.0000e-005	1.1900e-003	0.0000	1.1900e-003	3.2000e-004	0.0000	3.2000e-004	0.0000	0.6747	0.6747	1.0000e-005	0.0000	0.6749
Total	**2.2000e-004**	**1.1000e-004**	**1.5300e-003**	**1.0000e-005**	**1.1900e-003**	**0.0000**	**1.1900e-003**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**0.6747**	**0.6747**	**1.0000e-005**	**0.0000**	**0.6749**

3.3 Site Preparation - 2033

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0342	0.0407	1.2000e-004		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	10.0012	10.0012	4.9000e-004	0.0000	10.0135
Total	**6.1000e-003**	**0.0342**	**0.0407**	**1.2000e-004**	**0.0452**	**1.0900e-003**	**0.0463**	**0.0248**	**1.0900e-003**	**0.0259**	**0.0000**	**10.0012**	**10.0012**	**4.9000e-004**	**0.0000**	**10.0135**

3.3 Site Preparation - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	3.0000e-005	4.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2024	0.2024	0.0000	0.0000	0.2025
Total	**7.0000e-005**	**3.0000e-005**	**4.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2024**	**0.2024**	**0.0000**	**0.0000**	**0.2025**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0342	0.0407	1.2000e-004		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	10.0011	10.0011	4.9000e-004	0.0000	10.0135
Total	**6.1000e-003**	**0.0342**	**0.0407**	**1.2000e-004**	**0.0452**	**1.0900e-003**	**0.0463**	**0.0248**	**1.0900e-003**	**0.0259**	**0.0000**	**10.0011**	**10.0011**	**4.9000e-004**	**0.0000**	**10.0135**

3.3 Site Preparation - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	3.0000e-005	4.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2024	0.2024	0.0000	0.0000	0.2025
Total	**7.0000e-005**	**3.0000e-005**	**4.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2024**	**0.2024**	**0.0000**	**0.0000**	**0.2025**

3.4 Grading - 2033

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4700e-003	0.0310	0.0578	1.5000e-004		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	12.4819	12.4819	5.2000e-004	0.0000	12.4949
Total	**6.4700e-003**	**0.0310**	**0.0578**	**1.5000e-004**	**0.0262**	**9.4000e-004**	**0.0272**	**0.0135**	**9.4000e-004**	**0.0144**	**0.0000**	**12.4819**	**12.4819**	**5.2000e-004**	**0.0000**	**12.4949**

3.4 Grading - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	4.0000e-005	6.1000e-004	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.2699	0.2699	0.0000	0.0000	0.2700
Total	**9.0000e-005**	**4.0000e-005**	**6.1000e-004**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.2699**	**0.2699**	**0.0000**	**0.0000**	**0.2700**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4700e-003	0.0310	0.0578	1.5000e-004		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	12.4818	12.4818	5.2000e-004	0.0000	12.4949
Total	**6.4700e-003**	**0.0310**	**0.0578**	**1.5000e-004**	**0.0262**	**9.4000e-004**	**0.0272**	**0.0135**	**9.4000e-004**	**0.0144**	**0.0000**	**12.4818**	**12.4818**	**5.2000e-004**	**0.0000**	**12.4949**

3.4 Grading - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	4.0000e-005	6.1000e-004	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.2699	0.2699	0.0000	0.0000	0.2700
Total	**9.0000e-005**	**4.0000e-005**	**6.1000e-004**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.2699**	**0.2699**	**0.0000**	**0.0000**	**0.2700**

3.5 Building Construction - 2033

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	0.1486	0.9006	1.8338	3.5100e-003		0.0168	0.0168		0.0168	0.0168	0.0000	298.3473	298.3473	0.0120	0.0000	298.6465
Total	**0.1486**	**0.9006**	**1.8338**	**3.5100e-003**		**0.0168**	**0.0168**		**0.0168**	**0.0168**	**0.0000**	**298.3473**	**298.3473**	**0.0120**	**0.0000**	**298.6465**

3.5 Building Construction - 2033

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	0.0133	0.4550	0.1387	1.7100e-003	0.0456	5.1000e-004	0.0461	0.0132	4.8000e-004	0.0137	0.0000	164.7931	164.7931	5.5300e-003	0.0000	164.9313
Worker	0.0263	0.0133	0.1832	8.9000e-004	0.1422	5.1000e-004	0.1427	0.0378	4.7000e-004	0.0383	0.0000	80.6644	80.6644	8.9000e-004	0.0000	80.6866
Total	**0.0396**	**0.4684**	**0.3219**	**2.6000e-003**	**0.1878**	**1.0200e-003**	**0.1888**	**0.0510**	**9.5000e-004**	**0.0520**	**0.0000**	**245.4575**	**245.4575**	**6.4200e-003**	**0.0000**	**245.6179**

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	0.1486	0.9006	1.8338	3.5100e-003		0.0168	0.0168		0.0168	0.0168	0.0000	298.3469	298.3469	0.0120	0.0000	298.6461
Total	**0.1486**	**0.9006**	**1.8338**	**3.5100e-003**		**0.0168**	**0.0168**		**0.0168**	**0.0168**	**0.0000**	**298.3469**	**298.3469**	**0.0120**	**0.0000**	**298.6461**

3.5 Building Construction - 2033

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	0.0133	0.4550	0.1387	1.7100e-003	0.0456	5.1000e-004	0.0461	0.0132	4.8000e-004	0.0137	0.0000	164.7931	164.7931	5.5300e-003	0.0000	164.9313
Worker	0.0263	0.0133	0.1832	8.9000e-004	0.1422	5.1000e-004	0.1427	0.0378	4.7000e-004	0.0383	0.0000	80.6644	80.6644	8.9000e-004	0.0000	80.6866
Total	**0.0396**	**0.4684**	**0.3219**	**2.6000e-003**	**0.1878**	**1.0200e-003**	**0.1888**	**0.0510**	**9.5000e-004**	**0.0520**	**0.0000**	**245.4575**	**245.4575**	**6.4200e-003**	**0.0000**	**245.6179**

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9600e-003	0.0119	0.0242	5.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.9429	3.9429	1.6000e-004	0.0000	3.9469
Total	**1.9600e-003**	**0.0119**	**0.0242**	**5.0000e-005**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**3.9429**	**3.9429**	**1.6000e-004**	**0.0000**	**3.9469**

3.5 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	5.9700e-003	1.8300e-003	2.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	2.1749	2.1749	7.0000e-005	0.0000	2.1767
Worker	3.3000e-004	1.7000e-004	2.3000e-003	1.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.0491	1.0491	1.0000e-005	0.0000	1.0494
Total	**5.0000e-004**	**6.1400e-003**	**4.1300e-003**	**3.0000e-005**	**2.4800e-003**	**2.0000e-005**	**2.5000e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**3.2240**	**3.2240**	**8.0000e-005**	**0.0000**	**3.2261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9600e-003	0.0119	0.0242	5.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.9429	3.9429	1.6000e-004	0.0000	3.9469
Total	**1.9600e-003**	**0.0119**	**0.0242**	**5.0000e-005**		**2.2000e-004**	**2.2000e-004**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**3.9429**	**3.9429**	**1.6000e-004**	**0.0000**	**3.9469**

3.5 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	5.9700e-003	1.8300e-003	2.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	2.1749	2.1749	7.0000e-005	0.0000	2.1767
Worker	3.3000e-004	1.7000e-004	2.3000e-003	1.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.0491	1.0491	1.0000e-005	0.0000	1.0494
Total	**5.0000e-004**	**6.1400e-003**	**4.1300e-003**	**3.0000e-005**	**2.4800e-003**	**2.0000e-005**	**2.5000e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**3.2240**	**3.2240**	**8.0000e-005**	**0.0000**	**3.2261**

3.6 Paving - 2034

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	0.0104	0.0561	0.1178	2.1000e-004		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	17.5888	17.5888	8.4000e-004	0.0000	17.6099
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0104**	**0.0561**	**0.1178**	**2.1000e-004**		**2.2800e-003**	**2.2800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**17.5888**	**17.5888**	**8.4000e-004**	**0.0000**	**17.6099**

3.6 Paving - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.3000e-004	1.7500e-003	1.0000e-005	1.4300e-003	0.0000	1.4300e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.7968	0.7968	1.0000e-005	0.0000	0.7970
Total	**2.5000e-004**	**1.3000e-004**	**1.7500e-003**	**1.0000e-005**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**0.7968**	**0.7968**	**1.0000e-005**	**0.0000**	**0.7970**

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	0.0104	0.0561	0.1178	2.1000e-004		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	17.5888	17.5888	8.4000e-004	0.0000	17.6099
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0104**	**0.0561**	**0.1178**	**2.1000e-004**		**2.2800e-003**	**2.2800e-003**		**2.2800e-003**	**2.2800e-003**	**0.0000**	**17.5888**	**17.5888**	**8.4000e-004**	**0.0000**	**17.6099**

3.6 Paving - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.3000e-004	1.7500e-003	1.0000e-005	1.4300e-003	0.0000	1.4300e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.7968	0.7968	1.0000e-005	0.0000	0.7970
Total	**2.5000e-004**	**1.3000e-004**	**1.7500e-003**	**1.0000e-005**	**1.4300e-003**	**0.0000**	**1.4300e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**0.7968**	**0.7968**	**1.0000e-005**	**0.0000**	**0.7970**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	7.7100e-003	0.0162	3.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.2979	2.2979	9.0000e-005	0.0000	2.3003
Total	**1.9566**	**7.7100e-003**	**0.0162**	**3.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**2.2979**	**2.2979**	**9.0000e-005**	**0.0000**	**2.3003**

3.7 Architectural Coating - 2034

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	4.0000e-004	2.0000e-004	2.8000e-003	1.0000e-005	2.2800e-003	1.0000e-005	2.2900e-003	6.1000e-004	1.0000e-005	6.1000e-004	0.0000	1.2749	1.2749	1.0000e-005	0.0000	1.2752
Total	**4.0000e-004**	**2.0000e-004**	**2.8000e-003**	**1.0000e-005**	**2.2800e-003**	**1.0000e-005**	**2.2900e-003**	**6.1000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.2749**	**1.2749**	**1.0000e-005**	**0.0000**	**1.2752**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9554					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1800e-003	7.7100e-003	0.0162	3.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.2979	2.2979	9.0000e-005	0.0000	2.3003
Total	**1.9566**	**7.7100e-003**	**0.0162**	**3.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**2.2979**	**2.2979**	**9.0000e-005**	**0.0000**	**2.3003**

3.7 Architectural Coating - 2034

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	4.0000e-004	2.0000e-004	2.8000e-003	1.0000e-005	2.2800e-003	1.0000e-005	2.2900e-003	6.1000e-004	1.0000e-005	6.1000e-004	0.0000	1.2749	1.2749	1.0000e-005	0.0000	1.2752
Total	**4.0000e-004**	**2.0000e-004**	**2.8000e-003**	**1.0000e-005**	**2.2800e-003**	**1.0000e-005**	**2.2900e-003**	**6.1000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.2749**	**1.2749**	**1.0000e-005**	**0.0000**	**1.2752**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.622396	0.033528	0.179509	0.100966	0.011303	0.005106	0.013389	0.023725	0.002255	0.001445	0.005085	0.000651	0.000641

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.5119	2.8257	0.0667	118.0382
Unmitigated	27.5119	2.8257	0.0667	118.0382

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	86.7188 / 0	27.5119	2.8257	0.0667	118.0382
Total		**27.5119**	**2.8257**	**0.0667**	**118.0382**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	86.7188 / 0	27.5119	2.8257	0.0667	118.0382
Total		**27.5119**	**2.8257**	**0.0667**	**118.0382**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project T-16 (Run 5)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	300.00	Space	2.30	150,000.00	0
Hotel	330.00	Room	2.30	150,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2028
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Modeling Basis

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	75000	0
tblAreaCoating	Area_Nonresidential_Interior	225000	0
tblAreaCoating	Area_Parking	9000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.75	0.00
tblEnergyUse	LightingElect	2.35	0.00

tblEnergyUse	NT24E	3.22	0.00
tblEnergyUse	NT24NG	4.75	0.00
tblEnergyUse	T24E	3.92	0.00
tblEnergyUse	T24E	2.05	0.00
tblEnergyUse	T24NG	39.56	0.00
tblLandUse	LandUseSquareFeet	120,000.00	150,000.00
tblLandUse	LandUseSquareFeet	479,160.00	150,000.00
tblLandUse	LotAcreage	2.70	2.30
tblLandUse	LotAcreage	11.00	2.30
tblSolidWaste	SolidWasteGenerationRate	180.67	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.17	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00

tblWater	IndoorWaterUseRate	8,371,034.10	0.00
tblWater	OutdoorWaterUseRate	930,114.90	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2026	0.2342	2.1521	2.4767	5.9700e-003	0.2241	0.0750	0.2991	0.0798	0.0703	0.1501	0.0000	532.7636	532.7636	0.0839	0.0000	534.8601
2027	0.8250	0.0946	0.1507	2.7000e-004	4.5300e-003	4.1900e-003	8.7200e-003	1.2100e-003	3.9200e-003	5.1300e-003	0.0000	23.3203	23.3203	5.3900e-003	0.0000	23.4550
Maximum	**0.8250**	**2.1521**	**2.4767**	**5.9700e-003**	**0.2241**	**0.0750**	**0.2991**	**0.0798**	**0.0703**	**0.1501**	**0.0000**	**532.7636**	**532.7636**	**0.0839**	**0.0000**	**534.8601**

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					
2026	0.2342	2.1521	2.4767	5.9700e-003	0.2241	0.0750	0.2991	0.0798	0.0703	0.1501	0.0000	532.7632	532.7632	0.0839	0.0000	534.8598
2027	0.8250	0.0946	0.1507	2.7000e-004	4.5300e-003	4.1900e-003	8.7200e-003	1.2100e-003	3.9200e-003	5.1300e-003	0.0000	23.3203	23.3203	5.3900e-003	0.0000	23.4550
Maximum	**0.8250**	**2.1521**	**2.4767**	**5.9700e-003**	**0.2241**	**0.0750**	**0.2991**	**0.0798**	**0.0703**	**0.1501**	**0.0000**	**532.7632**	**532.7632**	**0.0839**	**0.0000**	**534.8598**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2026**	**3-31-2026**	0.6303	0.6303
2	**4-1-2026**	**6-30-2026**	0.5793	0.5793
3	**7-1-2026**	**9-30-2026**	0.5857	0.5857
4	**10-1-2026**	**12-31-2026**	0.5883	0.5883
5	**1-1-2027**	**3-31-2027**	0.9500	0.9500
		Highest	0.9500	0.9500

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2026	1/28/2026	5	20	
2	Site Preparation	Site Preparation	1/29/2026	2/4/2026	5	5	
3	Grading	Grading	2/5/2026	2/16/2026	5	8	
4	Building Construction	Building Construction	2/17/2026	1/4/2027	5	230	
5	Paving	Paving	1/5/2027	1/28/2027	5	18	
6	Architectural Coating	Architectural Coating	1/29/2027	2/23/2027	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 225,000; Non-Residential Outdoor: 75,000; Striped Parking Area: 9,000 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	126.00	49.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2026

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	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9977	33.9977	9.4900e-003	0.0000	34.2350
Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**		**8.5300e-003**	**8.5300e-003**		**7.9200e-003**	**7.9200e-003**	**0.0000**	**33.9977**	**33.9977**	**9.4900e-003**	**0.0000**	**34.2350**

3.2 Demolition - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	1.9000e-004	2.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8105	0.8105	1.0000e-005	0.0000	0.8108
Total	**3.4000e-004**	**1.9000e-004**	**2.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8105**	**0.8105**	**1.0000e-005**	**0.0000**	**0.8108**

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	0.0209	0.1920	0.1942	3.9000e-004		8.5300e-003	8.5300e-003		7.9200e-003	7.9200e-003	0.0000	33.9976	33.9976	9.4900e-003	0.0000	34.2349
Total	**0.0209**	**0.1920**	**0.1942**	**3.9000e-004**		**8.5300e-003**	**8.5300e-003**		**7.9200e-003**	**7.9200e-003**	**0.0000**	**33.9976**	**33.9976**	**9.4900e-003**	**0.0000**	**34.2349**

3.2 Demolition - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	1.9000e-004	2.3300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8105	0.8105	1.0000e-005	0.0000	0.8108
Total	**3.4000e-004**	**1.9000e-004**	**2.3300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8105**	**0.8105**	**1.0000e-005**	**0.0000**	**0.8108**

3.3 Site Preparation - 2026

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3668	8.3668	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3668**	**8.3668**	**2.7100e-003**	**0.0000**	**8.4344**

3.3 Site Preparation - 2026

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	1.0000e-004	6.0000e-005	7.0000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2432	0.2432	0.0000	0.0000	0.2433
Total	**1.0000e-004**	**6.0000e-005**	**7.0000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2432**	**0.2432**	**0.0000**	**0.0000**	**0.2433**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3667	8.3667	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3667**	**8.3667**	**2.7100e-003**	**0.0000**	**8.4344**

3.3 Site Preparation - 2026

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	1.0000e-004	6.0000e-005	7.0000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2432	0.2432	0.0000	0.0000	0.2433
Total	**1.0000e-004**	**6.0000e-005**	**7.0000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2432**	**0.2432**	**0.0000**	**0.0000**	**0.2433**

3.4 Grading - 2026

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0613	0.0582	1.2000e-004		2.4900e-003	2.4900e-003		2.2900e-003	2.2900e-003	0.0000	10.4279	10.4279	3.3700e-003	0.0000	10.5122
Total	**6.0900e-003**	**0.0613**	**0.0582**	**1.2000e-004**	**0.0262**	**2.4900e-003**	**0.0287**	**0.0135**	**2.2900e-003**	**0.0158**	**0.0000**	**10.4279**	**10.4279**	**3.3700e-003**	**0.0000**	**10.5122**

3.4 Grading - 2026

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	1.4000e-004	8.0000e-005	9.3000e-004	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3242	0.3242	1.0000e-005	0.0000	0.3243
Total	**1.4000e-004**	**8.0000e-005**	**9.3000e-004**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3242**	**0.3242**	**1.0000e-005**	**0.0000**	**0.3243**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0613	0.0582	1.2000e-004		2.4900e-003	2.4900e-003		2.2900e-003	2.2900e-003	0.0000	10.4279	10.4279	3.3700e-003	0.0000	10.5122
Total	**6.0900e-003**	**0.0613**	**0.0582**	**1.2000e-004**	**0.0262**	**2.4900e-003**	**0.0287**	**0.0135**	**2.2900e-003**	**0.0158**	**0.0000**	**10.4279**	**10.4279**	**3.3700e-003**	**0.0000**	**10.5122**

3.4 Grading - 2026

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	1.4000e-004	8.0000e-005	9.3000e-004	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3242	0.3242	1.0000e-005	0.0000	0.3243
Total	**1.4000e-004**	**8.0000e-005**	**9.3000e-004**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3242**	**0.3242**	**1.0000e-005**	**0.0000**	**0.3243**

3.5 Building Construction - 2026

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	0.1559	1.4215	1.8337	3.0700e-003		0.0601	0.0601		0.0566	0.0566	0.0000	264.3882	264.3882	0.0622	0.0000	265.9419
Total	**0.1559**	**1.4215**	**1.8337**	**3.0700e-003**		**0.0601**	**0.0601**		**0.0566**	**0.0566**	**0.0000**	**264.3882**	**264.3882**	**0.0622**	**0.0000**	**265.9419**

3.5 Building Construction - 2026

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	0.0118	0.3953	0.1191	1.4200e-003	0.0368	4.6000e-004	0.0372	0.0106	4.4000e-004	0.0111	0.0000	136.5914	136.5914	4.8400e-003	0.0000	136.7123
Worker	0.0328	0.0186	0.2228	8.6000e-004	0.1139	6.5000e-004	0.1146	0.0303	6.0000e-004	0.0309	0.0000	77.6139	77.6139	1.2800e-003	0.0000	77.6459
Total	**0.0445**	**0.4139**	**0.3419**	**2.2800e-003**	**0.1507**	**1.1100e-003**	**0.1518**	**0.0409**	**1.0400e-003**	**0.0420**	**0.0000**	**214.2053**	**214.2053**	**6.1200e-003**	**0.0000**	**214.3582**

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	0.1559	1.4215	1.8337	3.0700e-003		0.0601	0.0601		0.0566	0.0566	0.0000	264.3879	264.3879	0.0622	0.0000	265.9416
Total	**0.1559**	**1.4215**	**1.8337**	**3.0700e-003**		**0.0601**	**0.0601**		**0.0566**	**0.0566**	**0.0000**	**264.3879**	**264.3879**	**0.0622**	**0.0000**	**265.9416**

3.5 Building Construction - 2026

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	0.0118	0.3953	0.1191	1.4200e-003	0.0368	4.6000e-004	0.0372	0.0106	4.4000e-004	0.0111	0.0000	136.5914	136.5914	4.8400e-003	0.0000	136.7123
Worker	0.0328	0.0186	0.2228	8.6000e-004	0.1139	6.5000e-004	0.1146	0.0303	6.0000e-004	0.0309	0.0000	77.6139	77.6139	1.2800e-003	0.0000	77.6459
Total	**0.0445**	**0.4139**	**0.3419**	**2.2800e-003**	**0.1507**	**1.1100e-003**	**0.1518**	**0.0409**	**1.0400e-003**	**0.0420**	**0.0000**	**214.2053**	**214.2053**	**6.1200e-003**	**0.0000**	**214.3582**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3700e-003	0.0125	0.0161	3.0000e-005		5.3000e-004	5.3000e-004		5.0000e-004	5.0000e-004	0.0000	2.3192	2.3192	5.5000e-004	0.0000	2.3328
Total	**1.3700e-003**	**0.0125**	**0.0161**	**3.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**2.3192**	**2.3192**	**5.5000e-004**	**0.0000**	**2.3328**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.4200e-003	1.0300e-003	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1915	1.1915	4.0000e-005	0.0000	1.1925
Worker	2.7000e-004	1.5000e-004	1.8300e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.6576	0.6576	1.0000e-005	0.0000	0.6579
Total	**3.7000e-004**	**3.5700e-003**	**2.8600e-003**	**2.0000e-005**	**1.3200e-003**	**1.0000e-005**	**1.3300e-003**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**0.0000**	**1.8491**	**1.8491**	**5.0000e-005**	**0.0000**	**1.8504**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3700e-003	0.0125	0.0161	3.0000e-005		5.3000e-004	5.3000e-004		5.0000e-004	5.0000e-004	0.0000	2.3192	2.3192	5.5000e-004	0.0000	2.3328
Total	**1.3700e-003**	**0.0125**	**0.0161**	**3.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.0000e-004**	**5.0000e-004**	**0.0000**	**2.3192**	**2.3192**	**5.5000e-004**	**0.0000**	**2.3328**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.4200e-003	1.0300e-003	1.0000e-005	3.2000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	1.1915	1.1915	4.0000e-005	0.0000	1.1925
Worker	2.7000e-004	1.5000e-004	1.8300e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.6576	0.6576	1.0000e-005	0.0000	0.6579
Total	**3.7000e-004**	**3.5700e-003**	**2.8600e-003**	**2.0000e-005**	**1.3200e-003**	**1.0000e-005**	**1.3300e-003**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**0.0000**	**1.8491**	**1.8491**	**5.0000e-005**	**0.0000**	**1.8504**

3.6 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.1000e-004	2.6100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	0.9394	0.9394	1.0000e-005	0.0000	0.9398
Total	**3.9000e-004**	**2.1000e-004**	**2.6100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**0.9394**	**0.9394**	**1.0000e-005**	**0.0000**	**0.9398**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3800e-003	0.0678	0.1096	1.7000e-004		3.1700e-003	3.1700e-003		2.9300e-003	2.9300e-003	0.0000	14.7404	14.7404	4.6300e-003	0.0000	14.8562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.3800e-003**	**0.0678**	**0.1096**	**1.7000e-004**		**3.1700e-003**	**3.1700e-003**		**2.9300e-003**	**2.9300e-003**	**0.0000**	**14.7404**	**14.7404**	**4.6300e-003**	**0.0000**	**14.8562**

3.6 Paving - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	2.1000e-004	2.6100e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	0.9394	0.9394	1.0000e-005	0.0000	0.9398
Total	**3.9000e-004**	**2.1000e-004**	**2.6100e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**0.9394**	**0.9394**	**1.0000e-005**	**0.0000**	**0.9398**

3.7 Architectural Coating - 2027

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	0.8134					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.8150**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2027

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	4.9000e-004	2.7000e-004	3.2700e-003	1.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.1743	1.1743	2.0000e-005	0.0000	1.1747
Total	**4.9000e-004**	**2.7000e-004**	**3.2700e-003**	**1.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.1743**	**1.1743**	**2.0000e-005**	**0.0000**	**1.1747**

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	0.8134					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5400e-003	0.0103	0.0163	3.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	2.2979	2.2979	1.3000e-004	0.0000	2.3011
Total	**0.8150**	**0.0103**	**0.0163**	**3.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.3000e-004**	**0.0000**	**2.3011**

3.7 Architectural Coating - 2027

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	4.9000e-004	2.7000e-004	3.2700e-003	1.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.1743	1.1743	2.0000e-005	0.0000	1.1747
Total	**4.9000e-004**	**2.7000e-004**	**3.2700e-003**	**1.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.1743**	**1.1743**	**2.0000e-005**	**0.0000**	**1.1747**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Hotel	0.00	0.00	0.00	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.620274	0.034449	0.180536	0.101790	0.012258	0.005041	0.012989	0.022505	0.002207	0.001488	0.005157	0.000643	0.000663
Hotel	0.620274	0.034449	0.180536	0.101790	0.012258	0.005041	0.012989	0.022505	0.002207	0.001488	0.005157	0.000643	0.000663

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project C-2 (Run 6)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	35.00	1000sqft	4.60	35,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Expand cargo airline facilities

Land Use - SJC Modeling Basis

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	17500	0
tblAreaCoating	Area_Nonresidential_Interior	52500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	0.80	4.60
tblSolidWaste	SolidWasteGenerationRate	32.90	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	8,093,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3050	2.8233	2.3349	4.0200e-003	0.0915	0.1556	0.2471	0.0438	0.1459	0.1897	0.0000	349.3503	349.3503	0.0815	0.0000	351.3883
2021	0.1959	0.1208	0.1400	2.3000e-004	1.7200e-003	6.5500e-003	8.2700e-003	4.6000e-004	6.1200e-003	6.5700e-003	0.0000	19.6757	19.6757	5.1000e-003	0.0000	19.8032
Maximum	**0.3050**	**2.8233**	**2.3349**	**4.0200e-003**	**0.0915**	**0.1556**	**0.2471**	**0.0438**	**0.1459**	**0.1897**	**0.0000**	**349.3503**	**349.3503**	**0.0815**	**0.0000**	**351.3883**

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					
2020	0.3050	2.8233	2.3349	4.0200e-003	0.0915	0.1556	0.2471	0.0438	0.1459	0.1897	0.0000	349.3499	349.3499	0.0815	0.0000	351.3880
2021	0.1959	0.1208	0.1400	2.3000e-004	1.7200e-003	6.5500e-003	8.2700e-003	4.6000e-004	6.1200e-003	6.5700e-003	0.0000	19.6756	19.6756	5.1000e-003	0.0000	19.8032
Maximum	**0.3050**	**2.8233**	**2.3349**	**4.0200e-003**	**0.0915**	**0.1556**	**0.2471**	**0.0438**	**0.1459**	**0.1897**	**0.0000**	**349.3499**	**349.3499**	**0.0815**	**0.0000**	**351.3880**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.9490	0.9490
2	**4-1-2020**	**6-30-2020**	0.7179	0.7179
3	**7-1-2020**	**9-30-2020**	0.7258	0.7258
4	**10-1-2020**	**12-31-2020**	0.7264	0.7264
5	**1-1-2021**	**3-31-2021**	0.3237	0.3237
		Highest	0.9490	0.9490

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/4/2020	5	5	
3	Grading	Grading	2/5/2020	2/14/2020	5	8	
4	Building Construction	Building Construction	2/15/2020	1/1/2021	5	230	
5	Paving	Paving	1/2/2021	1/27/2021	5	18	
6	Architectural Coating	Architectural Coating	1/28/2021	2/22/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 52,500; Non-Residential Outdoor: 17,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	15.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.3 Site Preparation - 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					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

3.3 Site Preparation - 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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

3.3 Site Preparation - 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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

3.4 Grading - 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					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

3.5 Building Construction - 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	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1934	265.1934	0.0647	0.0000	266.8109
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1934**	**265.1934**	**0.0647**	**0.0000**	**266.8109**

3.5 Building Construction - 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	2.7200e-003	0.0782	0.0208	1.9000e-004	4.5200e-003	3.9000e-004	4.9100e-003	1.3100e-003	3.7000e-004	1.6800e-003	0.0000	17.9611	17.9611	8.2000e-004	0.0000	17.9817
Worker	5.7000e-003	4.1000e-003	0.0430	1.3000e-004	0.0136	9.0000e-005	0.0137	3.6200e-003	8.0000e-005	3.7000e-003	0.0000	11.6816	11.6816	2.9000e-004	0.0000	11.6887
Total	**8.4200e-003**	**0.0823**	**0.0638**	**3.2000e-004**	**0.0181**	**4.8000e-004**	**0.0186**	**4.9300e-003**	**4.5000e-004**	**5.3800e-003**	**0.0000**	**29.6427**	**29.6427**	**1.1100e-003**	**0.0000**	**29.6704**

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	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1931	265.1931	0.0647	0.0000	266.8106
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1931**	**265.1931**	**0.0647**	**0.0000**	**266.8106**

3.5 Building Construction - 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	2.7200e-003	0.0782	0.0208	1.9000e-004	4.5200e-003	3.9000e-004	4.9100e-003	1.3100e-003	3.7000e-004	1.6800e-003	0.0000	17.9611	17.9611	8.2000e-004	0.0000	17.9817
Worker	5.7000e-003	4.1000e-003	0.0430	1.3000e-004	0.0136	9.0000e-005	0.0137	3.6200e-003	8.0000e-005	3.7000e-003	0.0000	11.6816	11.6816	2.9000e-004	0.0000	11.6887
Total	**8.4200e-003**	**0.0823**	**0.0638**	**3.2000e-004**	**0.0181**	**4.8000e-004**	**0.0186**	**4.9300e-003**	**4.5000e-004**	**5.3800e-003**	**0.0000**	**29.6427**	**29.6427**	**1.1100e-003**	**0.0000**	**29.6704**

3.5 Building Construction - 2021

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	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0777	0.0777	0.0000	0.0000	0.0778
Worker	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0492	0.0492	0.0000	0.0000	0.0493
Total	**3.0000e-005**	**3.3000e-004**	**2.5000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1270**	**0.1270**	**0.0000**	**0.0000**	**0.1271**

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	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0777	0.0777	0.0000	0.0000	0.0778
Worker	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0492	0.0492	0.0000	0.0000	0.0493
Total	**3.0000e-005**	**3.3000e-004**	**2.5000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1270**	**0.1270**	**0.0000**	**0.0000**	**0.1271**

3.6 Paving - 2021

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	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

3.6 Paving - 2021

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

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	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

3.6 Paving - 2021

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

3.7 Architectural Coating - 2021

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	0.1825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.1845**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.7 Architectural Coating - 2021

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	8.0000e-005	6.0000e-005	6.2000e-004	0.0000	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1773	0.1773	0.0000	0.0000	0.1774
Total	**8.0000e-005**	**6.0000e-005**	**6.2000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1773**	**0.1773**	**0.0000**	**0.0000**	**0.1774**

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	0.1825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.1845**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.7 Architectural Coating - 2021

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	8.0000e-005	6.0000e-005	6.2000e-004	0.0000	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1773	0.1773	0.0000	0.0000	0.1774
Total	**8.0000e-005**	**6.0000e-005**	**6.2000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1773**	**0.1773**	**0.0000**	**0.0000**	**0.1774**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project C-3 (Run 7)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	35.00	1000sqft	3.40	35,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Modeling Basis

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	17500	0
tblAreaCoating	Area_Nonresidential_Interior	52500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	0.80	3.40
tblSolidWaste	SolidWasteGenerationRate	32.90	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	8,093,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2755	2.5763	2.2852	4.0000e-003	0.0915	0.1348	0.2263	0.0437	0.1264	0.1701	0.0000	347.4664	347.4664	0.0804	0.0000	349.4768
2022	0.1955	0.1150	0.1473	2.4000e-004	1.8000e-003	5.9500e-003	7.7500e-003	4.8000e-004	5.5600e-003	6.0400e-003	0.0000	20.9120	20.9120	5.3700e-003	0.0000	21.0463
Maximum	**0.2755**	**2.5763**	**2.2852**	**4.0000e-003**	**0.0915**	**0.1348**	**0.2263**	**0.0437**	**0.1264**	**0.1701**	**0.0000**	**347.4664**	**347.4664**	**0.0804**	**0.0000**	**349.4768**

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					
2021	0.2755	2.5763	2.2852	4.0000e-003	0.0915	0.1348	0.2263	0.0437	0.1264	0.1701	0.0000	347.4660	347.4660	0.0804	0.0000	349.4764
2022	0.1955	0.1150	0.1473	2.4000e-004	1.8000e-003	5.9500e-003	7.7500e-003	4.8000e-004	5.5600e-003	6.0400e-003	0.0000	20.9119	20.9119	5.3700e-003	0.0000	21.0462
Maximum	**0.2755**	**2.5763**	**2.2852**	**4.0000e-003**	**0.0915**	**0.1348**	**0.2263**	**0.0437**	**0.1264**	**0.1701**	**0.0000**	**347.4660**	**347.4660**	**0.0804**	**0.0000**	**349.4764**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2021**	**3-31-2021**	0.8823	0.8823
2	**4-1-2021**	**6-30-2021**	0.6513	0.6513
3	**7-1-2021**	**9-30-2021**	0.6584	0.6584
4	**10-1-2021**	**12-31-2021**	0.6590	0.6590
5	**1-1-2022**	**3-31-2022**	0.3200	0.3200
		Highest	0.8823	0.8823

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2021	1/28/2021	5	20	
2	Site Preparation	Site Preparation	1/29/2021	2/4/2021	5	5	
3	Grading	Grading	2/5/2021	2/16/2021	5	8	
4	Building Construction	Building Construction	2/17/2021	1/4/2022	5	230	
5	Paving	Paving	1/5/2022	1/28/2022	5	18	
6	Architectural Coating	Architectural Coating	1/29/2022	2/23/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 52,500; Non-Residential Outdoor: 17,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	15.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

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	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

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	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**		**0.0155**	**0.0155**		**0.0144**	**0.0144**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Demolition - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

3.3 Site Preparation - 2021

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

3.3 Site Preparation - 2021

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

3.3 Site Preparation - 2021

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

3.4 Grading - 2021

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0262**	**4.6400e-003**	**0.0309**	**0.0135**	**4.2700e-003**	**0.0177**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.4 Grading - 2021

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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**1.8000e-004**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3939**	**0.3939**	**1.0000e-005**	**0.0000**	**0.3942**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0262**	**4.6400e-003**	**0.0309**	**0.0135**	**4.2700e-003**	**0.0177**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.4 Grading - 2021

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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**1.8000e-004**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3939**	**0.3939**	**1.0000e-005**	**0.0000**	**0.3942**

3.5 Building Construction - 2021

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	0.2167	1.9873	1.8896	3.0700e-003		0.1093	0.1093		0.1028	0.1028	0.0000	264.0665	264.0665	0.0637	0.0000	265.6592
Total	**0.2167**	**1.9873**	**1.8896**	**3.0700e-003**		**0.1093**	**0.1093**		**0.1028**	**0.1028**	**0.0000**	**264.0665**	**264.0665**	**0.0637**	**0.0000**	**265.6592**

3.5 Building Construction - 2021

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	2.2300e-003	0.0703	0.0187	1.8000e-004	4.5000e-003	1.6000e-004	4.6600e-003	1.3000e-003	1.5000e-004	1.4500e-003	0.0000	17.7176	17.7176	7.7000e-004	0.0000	17.7369
Worker	5.2700e-003	3.6500e-003	0.0391	1.2000e-004	0.0136	9.0000e-005	0.0137	3.6100e-003	8.0000e-005	3.6900e-003	0.0000	11.2269	11.2269	2.6000e-004	0.0000	11.2333
Total	**7.5000e-003**	**0.0739**	**0.0578**	**3.0000e-004**	**0.0181**	**2.5000e-004**	**0.0183**	**4.9100e-003**	**2.3000e-004**	**5.1400e-003**	**0.0000**	**28.9445**	**28.9445**	**1.0300e-003**	**0.0000**	**28.9702**

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	0.2167	1.9873	1.8896	3.0700e-003		0.1093	0.1093		0.1028	0.1028	0.0000	264.0662	264.0662	0.0637	0.0000	265.6589
Total	**0.2167**	**1.9873**	**1.8896**	**3.0700e-003**		**0.1093**	**0.1093**		**0.1028**	**0.1028**	**0.0000**	**264.0662**	**264.0662**	**0.0637**	**0.0000**	**265.6589**

3.5 Building Construction - 2021

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	2.2300e-003	0.0703	0.0187	1.8000e-004	4.5000e-003	1.6000e-004	4.6600e-003	1.3000e-003	1.5000e-004	1.4500e-003	0.0000	17.7176	17.7176	7.7000e-004	0.0000	17.7369
Worker	5.2700e-003	3.6500e-003	0.0391	1.2000e-004	0.0136	9.0000e-005	0.0137	3.6100e-003	8.0000e-005	3.6900e-003	0.0000	11.2269	11.2269	2.6000e-004	0.0000	11.2333
Total	**7.5000e-003**	**0.0739**	**0.0578**	**3.0000e-004**	**0.0181**	**2.5000e-004**	**0.0183**	**4.9100e-003**	**2.3000e-004**	**5.1400e-003**	**0.0000**	**28.9445**	**28.9445**	**1.0300e-003**	**0.0000**	**28.9702**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**1.7100e-003**	**0.0156**	**0.0164**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

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	2.0000e-005	5.8000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1539	0.1539	1.0000e-005	0.0000	0.1541
Worker	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0949	0.0949	0.0000	0.0000	0.0950
Total	**6.0000e-005**	**6.1000e-004**	**4.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2488**	**0.2488**	**1.0000e-005**	**0.0000**	**0.2490**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**1.7100e-003**	**0.0156**	**0.0164**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

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	2.0000e-005	5.8000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1539	0.1539	1.0000e-005	0.0000	0.1541
Worker	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0949	0.0949	0.0000	0.0000	0.0950
Total	**6.0000e-005**	**6.1000e-004**	**4.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.2488**	**0.2488**	**1.0000e-005**	**0.0000**	**0.2490**

3.6 Paving - 2022

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	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7900e-003**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.6 Paving - 2022

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	5.2000e-004	3.4000e-004	3.7800e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1389	1.1389	2.0000e-005	0.0000	1.1395
Total	**5.2000e-004**	**3.4000e-004**	**3.7800e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1389**	**1.1389**	**2.0000e-005**	**0.0000**	**1.1395**

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	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7900e-003**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.6 Paving - 2022

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	5.2000e-004	3.4000e-004	3.7800e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1389	1.1389	2.0000e-005	0.0000	1.1395
Total	**5.2000e-004**	**3.4000e-004**	**3.7800e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1389**	**1.1389**	**2.0000e-005**	**0.0000**	**1.1395**

3.7 Architectural Coating - 2022

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	0.1825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.1843**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.7 Architectural Coating - 2022

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	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1708	0.1708	0.0000	0.0000	0.1709
Total	**8.0000e-005**	**5.0000e-005**	**5.7000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1708**	**0.1708**	**0.0000**	**0.0000**	**0.1709**

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	0.1825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.1843**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.7 Architectural Coating - 2022

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	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1708	0.1708	0.0000	0.0000	0.1709
Total	**8.0000e-005**	**5.0000e-005**	**5.7000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1708**	**0.1708**	**0.0000**	**0.0000**	**0.1709**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project C-4 (Run 8)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	150.00	1000sqft	3.40	150,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - (demolition activity only)

Land Use - SJC Modeling Basis

Construction Phase -

Vehicle Trips - Construction only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction only

Energy Use - construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	75000	0
tblAreaCoating	Area_Nonresidential_Interior	225000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00

tblEnergyUse	NT24E	7.99	0.00
tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	3.44	3.40
tblSolidWaste	SolidWasteGenerationRate	141.00	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	34,687,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0336	0.3324	0.2213	4.0000e-004	1.1900e-003	0.0166	0.0178	3.2000e-004	0.0154	0.0157	0.0000	35.0188	35.0188	9.6200e-003	0.0000	35.2594
Maximum	**0.0336**	**0.3324**	**0.2213**	**4.0000e-004**	**1.1900e-003**	**0.0166**	**0.0178**	**3.2000e-004**	**0.0154**	**0.0157**	**0.0000**	**35.0188**	**35.0188**	**9.6200e-003**	**0.0000**	**35.2594**

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					
2020	0.0336	0.3324	0.2213	4.0000e-004	1.1900e-003	0.0166	0.0178	3.2000e-004	0.0154	0.0157	0.0000	35.0188	35.0188	9.6200e-003	0.0000	35.2594
Maximum	**0.0336**	**0.3324**	**0.2213**	**4.0000e-004**	**1.1900e-003**	**0.0166**	**0.0178**	**3.2000e-004**	**0.0154**	**0.0157**	**0.0000**	**35.0188**	**35.0188**	**9.6200e-003**	**0.0000**	**35.2594**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.3661	0.3661
		Highest	0.3661	0.3661

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (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	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

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	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 - 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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.2 Demolition - 2020

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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project G-5 (Run9)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	50.00	1000sqft	3.50	50,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Modeling Basis

Vehicle Trips - Construction Only

Consumer Products - Construction only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	25000	0
tblAreaCoating	Area_Nonresidential_Interior	75000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	1.15	3.50
tblSolidWaste	SolidWasteGenerationRate	47.00	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	11,562,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3082	2.8510	2.3590	4.1300e-003	0.0985	0.1557	0.2542	0.0457	0.1460	0.1917	0.0000	360.0099	360.0099	0.0819	0.0000	362.0577
2021	0.2742	0.1209	0.1403	2.3000e-004	1.8200e-003	6.5500e-003	8.3700e-003	4.9000e-004	6.1200e-003	6.6000e-003	0.0000	19.7804	19.7804	5.1000e-003	0.0000	19.9080
Maximum	**0.3082**	**2.8510**	**2.3590**	**4.1300e-003**	**0.0985**	**0.1557**	**0.2542**	**0.0457**	**0.1460**	**0.1917**	**0.0000**	**360.0099**	**360.0099**	**0.0819**	**0.0000**	**362.0577**

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					
2020	0.3082	2.8510	2.3590	4.1300e-003	0.0985	0.1557	0.2542	0.0457	0.1460	0.1917	0.0000	360.0096	360.0096	0.0819	0.0000	362.0574
2021	0.2742	0.1209	0.1403	2.3000e-004	1.8200e-003	6.5500e-003	8.3700e-003	4.9000e-004	6.1200e-003	6.6000e-003	0.0000	19.7803	19.7803	5.1000e-003	0.0000	19.9080
Maximum	**0.3082**	**2.8510**	**2.3590**	**4.1300e-003**	**0.0985**	**0.1557**	**0.2542**	**0.0457**	**0.1460**	**0.1917**	**0.0000**	**360.0096**	**360.0096**	**0.0819**	**0.0000**	**362.0574**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.9535	0.9535
2	**4-1-2020**	**6-30-2020**	0.7265	0.7265
3	**7-1-2020**	**9-30-2020**	0.7345	0.7345
4	**10-1-2020**	**12-31-2020**	0.7354	0.7354
5	**1-1-2021**	**3-31-2021**	0.4046	0.4046
		Highest	0.9535	0.9535

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/4/2020	5	5	
3	Grading	Grading	2/5/2020	2/14/2020	5	8	
4	Building Construction	Building Construction	2/15/2020	1/1/2021	5	230	
5	Paving	Paving	1/2/2021	1/27/2021	5	18	
6	Architectural Coating	Architectural Coating	1/28/2021	2/22/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 75,000; Non-Residential Outdoor: 25,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.3 Site Preparation - 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					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

3.3 Site Preparation - 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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

3.3 Site Preparation - 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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

3.4 Grading - 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					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

3.4 Grading - 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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**2.0000e-004**	**1.4000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4083**

3.5 Building Construction - 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	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1934	265.1934	0.0647	0.0000	266.8109
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1934**	**265.1934**	**0.0647**	**0.0000**	**266.8109**

3.5 Building Construction - 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	3.6300e-003	0.1043	0.0278	2.5000e-004	6.0300e-003	5.2000e-004	6.5400e-003	1.7400e-003	4.9000e-004	2.2400e-003	0.0000	23.9482	23.9482	1.1000e-003	0.0000	23.9756
Worker	7.9900e-003	5.7400e-003	0.0602	1.8000e-004	0.0191	1.2000e-004	0.0192	5.0700e-003	1.1000e-004	5.1900e-003	0.0000	16.3542	16.3542	4.0000e-004	0.0000	16.3642
Total	**0.0116**	**0.1100**	**0.0880**	**4.3000e-004**	**0.0251**	**6.4000e-004**	**0.0257**	**6.8100e-003**	**6.0000e-004**	**7.4300e-003**	**0.0000**	**40.3024**	**40.3024**	**1.5000e-003**	**0.0000**	**40.3398**

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	0.2427	2.1968	1.9292	3.0800e-003		0.1279	0.1279		0.1203	0.1203	0.0000	265.1931	265.1931	0.0647	0.0000	266.8106
Total	**0.2427**	**2.1968**	**1.9292**	**3.0800e-003**		**0.1279**	**0.1279**		**0.1203**	**0.1203**	**0.0000**	**265.1931**	**265.1931**	**0.0647**	**0.0000**	**266.8106**

3.5 Building Construction - 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	3.6300e-003	0.1043	0.0278	2.5000e-004	6.0300e-003	5.2000e-004	6.5400e-003	1.7400e-003	4.9000e-004	2.2400e-003	0.0000	23.9482	23.9482	1.1000e-003	0.0000	23.9756
Worker	7.9900e-003	5.7400e-003	0.0602	1.8000e-004	0.0191	1.2000e-004	0.0192	5.0700e-003	1.1000e-004	5.1900e-003	0.0000	16.3542	16.3542	4.0000e-004	0.0000	16.3642
Total	**0.0116**	**0.1100**	**0.0880**	**4.3000e-004**	**0.0251**	**6.4000e-004**	**0.0257**	**6.8100e-003**	**6.0000e-004**	**7.4300e-003**	**0.0000**	**40.3024**	**40.3024**	**1.5000e-003**	**0.0000**	**40.3398**

3.5 Building Construction - 2021

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	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.1000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1036	0.1036	0.0000	0.0000	0.1037
Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0689	0.0689	0.0000	0.0000	0.0690
Total	**4.0000e-005**	**4.3000e-004**	**3.5000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1726**	**0.1726**	**0.0000**	**0.0000**	**0.1727**

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	9.5000e-004	8.7200e-003	8.2900e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.5000e-004	4.5000e-004	0.0000	1.1582	1.1582	2.8000e-004	0.0000	1.1652
Total	**9.5000e-004**	**8.7200e-003**	**8.2900e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**1.1582**	**1.1582**	**2.8000e-004**	**0.0000**	**1.1652**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.1000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1036	0.1036	0.0000	0.0000	0.1037
Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0689	0.0689	0.0000	0.0000	0.0690
Total	**4.0000e-005**	**4.3000e-004**	**3.5000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1726**	**0.1726**	**0.0000**	**0.0000**	**0.1727**

3.6 Paving - 2021

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	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

3.6 Paving - 2021

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

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	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

3.6 Paving - 2021

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

3.7 Architectural Coating - 2021

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.2627**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.7 Architectural Coating - 2021

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	1.1000e-004	8.0000e-005	8.2000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2364	0.2364	1.0000e-005	0.0000	0.2365
Total	**1.1000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2364**	**0.2364**	**1.0000e-005**	**0.0000**	**0.2365**

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.2627**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

3.7 Architectural Coating - 2021

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	1.1000e-004	8.0000e-005	8.2000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2364	0.2364	1.0000e-005	0.0000	0.2365
Total	**1.1000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2364**	**0.2364**	**1.0000e-005**	**0.0000**	**0.2365**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project G-8 (Run 10)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	150.00	1000sqft	10.00	150,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Modeling Basis

Vehicle Trips - Construction Only

Consumer Products - Construction only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	75000	0
tblAreaCoating	Area_Nonresidential_Interior	225000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	3.44	10.00
tblSolidWaste	SolidWasteGenerationRate	141.00	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	34,687,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2594	2.4134	2.4710	5.1800e-003	0.2503	0.1046	0.3549	0.1055	0.0979	0.2034	0.0000	457.0186	457.0186	0.0937	0.0000	459.3617
2024	0.8114	0.2615	0.3479	6.5000e-004	8.8600e-003	0.0115	0.0204	2.4000e-003	0.0108	0.0131	0.0000	57.2757	57.2757	0.0124	0.0000	57.5864
Maximum	**0.8114**	**2.4134**	**2.4710**	**5.1800e-003**	**0.2503**	**0.1046**	**0.3549**	**0.1055**	**0.0979**	**0.2034**	**0.0000**	**457.0186**	**457.0186**	**0.0937**	**0.0000**	**459.3617**

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					
2023	0.2594	2.4134	2.4710	5.1800e-003	0.2503	0.1046	0.3549	0.1055	0.0979	0.2034	0.0000	457.0182	457.0182	0.0937	0.0000	459.3613
2024	0.8114	0.2615	0.3479	6.5000e-004	8.8600e-003	0.0115	0.0204	2.4000e-003	0.0108	0.0131	0.0000	57.2757	57.2757	0.0124	0.0000	57.5863
Maximum	**0.8114**	**2.4134**	**2.4710**	**5.1800e-003**	**0.2503**	**0.1046**	**0.3549**	**0.1055**	**0.0979**	**0.2034**	**0.0000**	**457.0182**	**457.0182**	**0.0937**	**0.0000**	**459.3613**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.8967	0.8967
2	**4-1-2023**	**6-30-2023**	0.5887	0.5887
3	**7-1-2023**	**9-30-2023**	0.5952	0.5952
4	**10-1-2023**	**12-31-2023**	0.5967	0.5967
5	**1-1-2024**	**3-31-2024**	1.0611	1.0611
		Highest	1.0611	1.0611

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	1/27/2023	5	20	
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
3	Grading	Grading	2/11/2023	3/10/2023	5	20	
4	Building Construction	Building Construction	3/11/2023	1/26/2024	5	230	
5	Paving	Paving	1/27/2024	2/23/2024	5	20	
6	Architectural Coating	Architectural Coating	2/24/2024	3/22/2024	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 50

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 225,000; Non-Residential Outdoor: 75,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	25.00	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
Architectural Coating	1	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2023

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	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9921	33.9921	9.5200e-003	0.0000	34.2301
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**		**9.9800e-003**	**9.9800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**33.9921**	**33.9921**	**9.5200e-003**	**0.0000**	**34.2301**

3.2 Demolition - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

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	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9920	33.9920	9.5200e-003	0.0000	34.2300
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**		**9.9800e-003**	**9.9800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**33.9920**	**33.9920**	**9.5200e-003**	**0.0000**	**34.2300**

3.2 Demolition - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

3.3 Site Preparation - 2023

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0903**	**6.3300e-003**	**0.0967**	**0.0497**	**5.8200e-003**	**0.0555**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5478	0.5478	1.0000e-005	0.0000	0.5481
Total	**2.4000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5478**	**0.5478**	**1.0000e-005**	**0.0000**	**0.5481**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0903**	**6.3300e-003**	**0.0967**	**0.0497**	**5.8200e-003**	**0.0555**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5478	0.5478	1.0000e-005	0.0000	0.5481
Total	**2.4000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5478**	**0.5478**	**1.0000e-005**	**0.0000**	**0.5481**

3.4 Grading - 2023

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					0.0867	0.0000	0.0867	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3452	0.2805	6.2000e-004		0.0142	0.0142		0.0131	0.0131	0.0000	54.5352	54.5352	0.0176	0.0000	54.9762
Total	**0.0332**	**0.3452**	**0.2805**	**6.2000e-004**	**0.0867**	**0.0142**	**0.1010**	**0.0360**	**0.0131**	**0.0491**	**0.0000**	**54.5352**	**54.5352**	**0.0176**	**0.0000**	**54.9762**

3.4 Grading - 2023

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	5.4000e-004	3.4000e-004	3.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2173	1.2173	2.0000e-005	0.0000	1.2179
Total	**5.4000e-004**	**3.4000e-004**	**3.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2173**	**1.2173**	**2.0000e-005**	**0.0000**	**1.2179**

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					0.0867	0.0000	0.0867	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3452	0.2805	6.2000e-004		0.0142	0.0142		0.0131	0.0131	0.0000	54.5351	54.5351	0.0176	0.0000	54.9761
Total	**0.0332**	**0.3452**	**0.2805**	**6.2000e-004**	**0.0867**	**0.0142**	**0.1010**	**0.0360**	**0.0131**	**0.0491**	**0.0000**	**54.5351**	**54.5351**	**0.0176**	**0.0000**	**54.9761**

3.4 Grading - 2023

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	5.4000e-004	3.4000e-004	3.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2173	1.2173	2.0000e-005	0.0000	1.2179
Total	**5.4000e-004**	**3.4000e-004**	**3.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2173**	**1.2173**	**2.0000e-005**	**0.0000**	**1.2179**

3.5 Building Construction - 2023

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	0.1651	1.5104	1.7056	2.8300e-003		0.0735	0.0735		0.0691	0.0691	0.0000	243.3950	243.3950	0.0579	0.0000	244.8425
Total	**0.1651**	**1.5104**	**1.7056**	**2.8300e-003**		**0.0735**	**0.0735**		**0.0691**	**0.0691**	**0.0000**	**243.3950**	**243.3950**	**0.0579**	**0.0000**	**244.8425**

3.5 Building Construction - 2023

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	6.0200e-003	0.1932	0.0607	6.8000e-004	0.0173	2.3000e-004	0.0175	4.9900e-003	2.2000e-004	5.2100e-003	0.0000	65.4300	65.4300	2.4100e-003	0.0000	65.4902
Worker	0.0178	0.0114	0.1280	4.5000e-004	0.0525	3.2000e-004	0.0528	0.0140	2.9000e-004	0.0142	0.0000	40.2629	40.2629	7.9000e-004	0.0000	40.2828
Total	**0.0238**	**0.2046**	**0.1887**	**1.1300e-003**	**0.0697**	**5.5000e-004**	**0.0703**	**0.0189**	**5.1000e-004**	**0.0195**	**0.0000**	**105.6929**	**105.6929**	**3.2000e-003**	**0.0000**	**105.7730**

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	0.1651	1.5104	1.7056	2.8300e-003		0.0735	0.0735		0.0691	0.0691	0.0000	243.3947	243.3947	0.0579	0.0000	244.8422
Total	**0.1651**	**1.5104**	**1.7056**	**2.8300e-003**		**0.0735**	**0.0735**		**0.0691**	**0.0691**	**0.0000**	**243.3947**	**243.3947**	**0.0579**	**0.0000**	**244.8422**

3.5 Building Construction - 2023

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	6.0200e-003	0.1932	0.0607	6.8000e-004	0.0173	2.3000e-004	0.0175	4.9900e-003	2.2000e-004	5.2100e-003	0.0000	65.4300	65.4300	2.4100e-003	0.0000	65.4902
Worker	0.0178	0.0114	0.1280	4.5000e-004	0.0525	3.2000e-004	0.0528	0.0140	2.9000e-004	0.0142	0.0000	40.2629	40.2629	7.9000e-004	0.0000	40.2828
Total	**0.0238**	**0.2046**	**0.1887**	**1.1300e-003**	**0.0697**	**5.5000e-004**	**0.0703**	**0.0189**	**5.1000e-004**	**0.0195**	**0.0000**	**105.6929**	**105.6929**	**3.2000e-003**	**0.0000**	**105.7730**

3.5 Building Construction - 2024

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	0.0147	0.1344	0.1617	2.7000e-004		6.1300e-003	6.1300e-003		5.7700e-003	5.7700e-003	0.0000	23.1849	23.1849	5.4800e-003	0.0000	23.3220
Total	**0.0147**	**0.1344**	**0.1617**	**2.7000e-004**		**6.1300e-003**	**6.1300e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**23.1849**	**23.1849**	**5.4800e-003**	**0.0000**	**23.3220**

3.5 Building Construction - 2024

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	5.5000e-004	0.0182	5.5900e-003	6.0000e-005	1.6500e-003	2.0000e-005	1.6700e-003	4.8000e-004	2.0000e-005	5.0000e-004	0.0000	6.1898	6.1898	2.2000e-004	0.0000	6.1954
Worker	1.6000e-003	9.8000e-004	0.0113	4.0000e-005	5.0000e-003	3.0000e-005	5.0300e-003	1.3300e-003	3.0000e-005	1.3600e-003	0.0000	3.6839	3.6839	7.0000e-005	0.0000	3.6857
Total	**2.1500e-003**	**0.0192**	**0.0169**	**1.0000e-004**	**6.6500e-003**	**5.0000e-005**	**6.7000e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**9.8737**	**9.8737**	**2.9000e-004**	**0.0000**	**9.8810**

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	0.0147	0.1344	0.1617	2.7000e-004		6.1300e-003	6.1300e-003		5.7700e-003	5.7700e-003	0.0000	23.1849	23.1849	5.4800e-003	0.0000	23.3220
Total	**0.0147**	**0.1344**	**0.1617**	**2.7000e-004**		**6.1300e-003**	**6.1300e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**23.1849**	**23.1849**	**5.4800e-003**	**0.0000**	**23.3220**

3.5 Building Construction - 2024

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	5.5000e-004	0.0182	5.5900e-003	6.0000e-005	1.6500e-003	2.0000e-005	1.6700e-003	4.8000e-004	2.0000e-005	5.0000e-004	0.0000	6.1898	6.1898	2.2000e-004	0.0000	6.1954
Worker	1.6000e-003	9.8000e-004	0.0113	4.0000e-005	5.0000e-003	3.0000e-005	5.0300e-003	1.3300e-003	3.0000e-005	1.3600e-003	0.0000	3.6839	3.6839	7.0000e-005	0.0000	3.6857
Total	**2.1500e-003**	**0.0192**	**0.0169**	**1.0000e-004**	**6.6500e-003**	**5.0000e-005**	**6.7000e-003**	**1.8100e-003**	**5.0000e-005**	**1.8600e-003**	**0.0000**	**9.8737**	**9.8737**	**2.9000e-004**	**0.0000**	**9.8810**

3.6 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

3.7 Architectural Coating - 2024

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	0.7822					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**0.7840**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.0000e-004	2.3300e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.7602	0.7602	1.0000e-005	0.0000	0.7605
Total	**3.3000e-004**	**2.0000e-004**	**2.3300e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0400e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.7602**	**0.7602**	**1.0000e-005**	**0.0000**	**0.7605**

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	0.7822					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**0.7840**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.0000e-004	2.3300e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.7602	0.7602	1.0000e-005	0.0000	0.7605
Total	**3.3000e-004**	**2.0000e-004**	**2.3300e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0400e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**0.7602**	**0.7602**	**1.0000e-005**	**0.0000**	**0.7605**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.616749	0.035330	0.181430	0.103378	0.013121	0.005016	0.012828	0.021913	0.002183	0.001508	0.005219	0.000634	0.000691

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project G-9 (Run11)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	496.30	1000sqft	11.39	496,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 2023 (north), 2024 (south)

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	248150	0
tblAreaCoating	Area_Nonresidential_Interior	744450	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00

tblEnergyUse	NT24E	7.99	0.00
tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblSolidWaste	SolidWasteGenerationRate	466.52	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	114,769,375.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3191	2.9417	2.9331	7.7400e-003	0.4430	0.1094	0.5523	0.1640	0.1022	0.2662	0.0000	696.1115	696.1115	0.1065	0.0000	698.7746
2024	2.7100	1.0911	1.2600	3.3600e-003	0.1137	0.0368	0.1505	0.0308	0.0346	0.0654	0.0000	302.9259	302.9259	0.0389	0.0000	303.8974
Maximum	**2.7100**	**2.9417**	**2.9331**	**7.7400e-003**	**0.4430**	**0.1094**	**0.5523**	**0.1640**	**0.1022**	**0.2662**	**0.0000**	**696.1115**	**696.1115**	**0.1065**	**0.0000**	**698.7746**

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					
2023	0.3191	2.9417	2.9331	7.7400e-003	0.4430	0.1094	0.5523	0.1640	0.1022	0.2662	0.0000	696.1111	696.1111	0.1065	0.0000	698.7741
2024	2.7100	1.0911	1.2600	3.3600e-003	0.1137	0.0368	0.1505	0.0308	0.0346	0.0654	0.0000	302.9257	302.9257	0.0389	0.0000	303.8972
Maximum	**2.7100**	**2.9417**	**2.9331**	**7.7400e-003**	**0.4430**	**0.1094**	**0.5523**	**0.1640**	**0.1022**	**0.2662**	**0.0000**	**696.1111**	**696.1111**	**0.1065**	**0.0000**	**698.7741**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	1.0079	1.0079
2	4-1-2023	6-30-2023	0.7462	0.7462
3	7-1-2023	9-30-2023	0.7544	0.7544
4	10-1-2023	12-31-2023	0.7595	0.7595
5	1-1-2024	3-31-2024	0.7123	0.7123
6	4-1-2024	6-30-2024	1.9590	1.9590
7	7-1-2024	9-30-2024	1.1158	1.1158
		Highest	1.9590	1.9590

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	1/27/2023	5	20	
2	Site Preparation	Site Preparation	1/28/2023	2/10/2023	5	10	
3	Grading	Grading	2/11/2023	3/24/2023	5	30	
4	Building Construction	Building Construction	3/25/2023	5/17/2024	5	300	
5	Paving	Paving	5/18/2024	6/14/2024	5	20	
6	Architectural Coating	Architectural Coating	6/15/2024	7/12/2024	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 744,450; Non-Residential Outdoor: 248,150; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	208.00	81.00	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
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2023

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	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9921	33.9921	9.5200e-003	0.0000	34.2301
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**		**9.9800e-003**	**9.9800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**33.9921**	**33.9921**	**9.5200e-003**	**0.0000**	**34.2301**

3.2 Demolition - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

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	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9920	33.9920	9.5200e-003	0.0000	34.2300
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**		**9.9800e-003**	**9.9800e-003**		**9.2800e-003**	**9.2800e-003**	**0.0000**	**33.9920**	**33.9920**	**9.5200e-003**	**0.0000**	**34.2300**

3.2 Demolition - 2023

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	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9130**	**0.9130**	**2.0000e-005**	**0.0000**	**0.9134**

3.3 Site Preparation - 2023

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0903**	**6.3300e-003**	**0.0967**	**0.0497**	**5.8200e-003**	**0.0555**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5478	0.5478	1.0000e-005	0.0000	0.5481
Total	**2.4000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5478**	**0.5478**	**1.0000e-005**	**0.0000**	**0.5481**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0903**	**6.3300e-003**	**0.0967**	**0.0497**	**5.8200e-003**	**0.0555**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.5000e-004	1.7400e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5478	0.5478	1.0000e-005	0.0000	0.5481
Total	**2.4000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5478**	**0.5478**	**1.0000e-005**	**0.0000**	**0.5481**

3.4 Grading - 2023

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5177	0.4208	9.3000e-004		0.0214	0.0214		0.0197	0.0197	0.0000	81.8028	81.8028	0.0265	0.0000	82.4642
Total	**0.0498**	**0.5177**	**0.4208**	**9.3000e-004**	**0.1301**	**0.0214**	**0.1515**	**0.0540**	**0.0197**	**0.0736**	**0.0000**	**81.8028**	**81.8028**	**0.0265**	**0.0000**	**82.4642**

3.4 Grading - 2023

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	8.1000e-004	5.2000e-004	5.8000e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.8260	1.8260	4.0000e-005	0.0000	1.8269
Total	**8.1000e-004**	**5.2000e-004**	**5.8000e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8260**	**1.8260**	**4.0000e-005**	**0.0000**	**1.8269**

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5177	0.4208	9.3000e-004		0.0214	0.0214		0.0197	0.0197	0.0000	81.8027	81.8027	0.0265	0.0000	82.4641
Total	**0.0498**	**0.5177**	**0.4208**	**9.3000e-004**	**0.1301**	**0.0214**	**0.1515**	**0.0540**	**0.0197**	**0.0736**	**0.0000**	**81.8027**	**81.8027**	**0.0265**	**0.0000**	**82.4641**

3.4 Grading - 2023

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	8.1000e-004	5.2000e-004	5.8000e-003	2.0000e-005	2.3800e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	1.8260	1.8260	4.0000e-005	0.0000	1.8269
Total	**8.1000e-004**	**5.2000e-004**	**5.8000e-003**	**2.0000e-005**	**2.3800e-003**	**1.0000e-005**	**2.3900e-003**	**6.3000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8260**	**1.8260**	**4.0000e-005**	**0.0000**	**1.8269**

3.5 Building Construction - 2023

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	0.1573	1.4385	1.6244	2.6900e-003		0.0700	0.0700		0.0658	0.0658	0.0000	231.8048	231.8048	0.0551	0.0000	233.1833
Total	**0.1573**	**1.4385**	**1.6244**	**2.6900e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**231.8048**	**231.8048**	**0.0551**	**0.0000**	**233.1833**

3.5 Building Construction - 2023

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	0.0186	0.5963	0.1874	2.1000e-003	0.0533	7.0000e-004	0.0540	0.0154	6.7000e-004	0.0161	0.0000	201.8983	201.8983	7.4300e-003	0.0000	202.0842
Worker	0.0560	0.0358	0.4024	1.4000e-003	0.1650	1.0000e-003	0.1660	0.0439	9.2000e-004	0.0448	0.0000	126.6014	126.6014	2.5000e-003	0.0000	126.6638
Total	**0.0746**	**0.6321**	**0.5898**	**3.5000e-003**	**0.2183**	**1.7000e-003**	**0.2200**	**0.0593**	**1.5900e-003**	**0.0609**	**0.0000**	**328.4997**	**328.4997**	**9.9300e-003**	**0.0000**	**328.7480**

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	0.1573	1.4385	1.6244	2.6900e-003		0.0700	0.0700		0.0658	0.0658	0.0000	231.8045	231.8045	0.0551	0.0000	233.1830
Total	**0.1573**	**1.4385**	**1.6244**	**2.6900e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**231.8045**	**231.8045**	**0.0551**	**0.0000**	**233.1830**

3.5 Building Construction - 2023

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	0.0186	0.5963	0.1874	2.1000e-003	0.0533	7.0000e-004	0.0540	0.0154	6.7000e-004	0.0161	0.0000	201.8983	201.8983	7.4300e-003	0.0000	202.0842
Worker	0.0560	0.0358	0.4024	1.4000e-003	0.1650	1.0000e-003	0.1660	0.0439	9.2000e-004	0.0448	0.0000	126.6014	126.6014	2.5000e-003	0.0000	126.6638
Total	**0.0746**	**0.6321**	**0.5898**	**3.5000e-003**	**0.2183**	**1.7000e-003**	**0.2200**	**0.0593**	**1.5900e-003**	**0.0609**	**0.0000**	**328.4997**	**328.4997**	**9.9300e-003**	**0.0000**	**328.7480**

3.5 Building Construction - 2024

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	0.0736	0.6722	0.8083	1.3500e-003		0.0307	0.0307		0.0288	0.0288	0.0000	115.9246	115.9246	0.0274	0.0000	116.6099
Total	**0.0736**	**0.6722**	**0.8083**	**1.3500e-003**		**0.0307**	**0.0307**		**0.0288**	**0.0288**	**0.0000**	**115.9246**	**115.9246**	**0.0274**	**0.0000**	**116.6099**

3.5 Building Construction - 2024

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	8.9900e-003	0.2944	0.0905	1.0400e-003	0.0267	3.4000e-004	0.0270	7.7100e-003	3.3000e-004	8.0300e-003	0.0000	100.2741	100.2741	3.6400e-003	0.0000	100.3652
Worker	0.0264	0.0162	0.1866	6.7000e-004	0.0825	4.9000e-004	0.0830	0.0219	4.5000e-004	0.0224	0.0000	60.8143	60.8143	1.1200e-003	0.0000	60.8424
Total	**0.0353**	**0.3106**	**0.2770**	**1.7100e-003**	**0.1091**	**8.3000e-004**	**0.1100**	**0.0297**	**7.8000e-004**	**0.0304**	**0.0000**	**161.0884**	**161.0884**	**4.7600e-003**	**0.0000**	**161.2076**

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	0.0736	0.6722	0.8083	1.3500e-003		0.0307	0.0307		0.0288	0.0288	0.0000	115.9244	115.9244	0.0274	0.0000	116.6097
Total	**0.0736**	**0.6722**	**0.8083**	**1.3500e-003**		**0.0307**	**0.0307**		**0.0288**	**0.0288**	**0.0000**	**115.9244**	**115.9244**	**0.0274**	**0.0000**	**116.6097**

3.5 Building Construction - 2024

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	8.9900e-003	0.2944	0.0905	1.0400e-003	0.0267	3.4000e-004	0.0270	7.7100e-003	3.3000e-004	8.0300e-003	0.0000	100.2741	100.2741	3.6400e-003	0.0000	100.3652
Worker	0.0264	0.0162	0.1866	6.7000e-004	0.0825	4.9000e-004	0.0830	0.0219	4.5000e-004	0.0224	0.0000	60.8143	60.8143	1.1200e-003	0.0000	60.8424
Total	**0.0353**	**0.3106**	**0.2770**	**1.7100e-003**	**0.1091**	**8.3000e-004**	**0.1100**	**0.0297**	**7.8000e-004**	**0.0304**	**0.0000**	**161.0884**	**161.0884**	**4.7600e-003**	**0.0000**	**161.2076**

3.6 Paving - 2024

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

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	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.3000e-004	2.6900e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.8771	0.8771	2.0000e-005	0.0000	0.8775
Total	**3.8000e-004**	**2.3000e-004**	**2.6900e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.8771**	**0.8771**	**2.0000e-005**	**0.0000**	**0.8775**

3.7 Architectural Coating - 2024

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	2.5879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**2.5897**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

3.7 Architectural Coating - 2024

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	1.0600e-003	6.5000e-004	7.5300e-003	3.0000e-005	3.3300e-003	2.0000e-005	3.3500e-003	8.9000e-004	2.0000e-005	9.0000e-004	0.0000	2.4560	2.4560	5.0000e-005	0.0000	2.4571
Total	**1.0600e-003**	**6.5000e-004**	**7.5300e-003**	**3.0000e-005**	**3.3300e-003**	**2.0000e-005**	**3.3500e-003**	**8.9000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4560**	**2.4560**	**5.0000e-005**	**0.0000**	**2.4571**

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	2.5879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**2.5897**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

3.7 Architectural Coating - 2024

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	1.0600e-003	6.5000e-004	7.5300e-003	3.0000e-005	3.3300e-003	2.0000e-005	3.3500e-003	8.9000e-004	2.0000e-005	9.0000e-004	0.0000	2.4560	2.4560	5.0000e-005	0.0000	2.4571
Total	**1.0600e-003**	**6.5000e-004**	**7.5300e-003**	**3.0000e-005**	**3.3300e-003**	**2.0000e-005**	**3.3500e-003**	**8.9000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4560**	**2.4560**	**5.0000e-005**	**0.0000**	**2.4571**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project S-1 (Run12)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	4.80	1000sqft	2.30	4,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Emission Modeling Basis

Construction Phase -

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	2400	0
tblAreaCoating	Area_Nonresidential_Interior	7200	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	0.11	2.30
tblSolidWaste	SolidWasteGenerationRate	4.51	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,110,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2035	0.1516	0.9003	1.7275	3.5800e-003	0.0265	0.0113	0.0378	0.0116	0.0113	0.0229	0.0000	298.0697	298.0697	0.0118	0.0000	298.3655
2036	0.0205	3.0300e-003	7.1800e-003	1.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	1.0213	1.0213	4.0000e-005	0.0000	1.0222
Maximum	**0.1516**	**0.9003**	**1.7275**	**3.5800e-003**	**0.0265**	**0.0113**	**0.0378**	**0.0116**	**0.0113**	**0.0229**	**0.0000**	**298.0697**	**298.0697**	**0.0118**	**0.0000**	**298.3655**

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					
2035	0.1516	0.9003	1.7275	3.5800e-003	0.0265	0.0113	0.0378	0.0116	0.0113	0.0229	0.0000	298.0693	298.0693	0.0118	0.0000	298.3651
2036	0.0205	3.0300e-003	7.1800e-003	1.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	4.0000e-005	4.0000e-005	0.0000	1.0213	1.0213	4.0000e-005	0.0000	1.0222
Maximum	**0.1516**	**0.9003**	**1.7275**	**3.5800e-003**	**0.0265**	**0.0113**	**0.0378**	**0.0116**	**0.0113**	**0.0229**	**0.0000**	**298.0693**	**298.0693**	**0.0118**	**0.0000**	**298.3651**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2035**	**3-31-2035**	0.2479	0.2479
2	**4-1-2035**	**6-30-2035**	0.2709	0.2709
3	**7-1-2035**	**9-30-2035**	0.2739	0.2739
4	**10-1-2035**	**12-31-2035**	0.2568	0.2568
5	**1-1-2036**	**3-31-2036**	0.0210	0.0210
		Highest	0.2739	0.2739

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2035	1/26/2035	5	20	
2	Site Preparation	Site Preparation	1/27/2035	1/31/2035	5	3	
3	Grading	Grading	2/1/2035	2/8/2035	5	6	
4	Building Construction	Building Construction	2/9/2035	12/13/2035	5	220	
5	Paving	Paving	12/14/2035	12/27/2035	5	10	
6	Architectural Coating	Architectural Coating	12/28/2035	1/10/2036	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,200; Non-Residential Outdoor: 2,400; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	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
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	0.00	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	2.00	1.00	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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2035

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	0.0120	0.0654	0.1286	2.8000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	24.1504	24.1504	9.6000e-004	0.0000	24.1745
Total	**0.0120**	**0.0654**	**0.1286**	**2.8000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**24.1504**	**24.1504**	**9.6000e-004**	**0.0000**	**24.1745**

3.2 Demolition - 2035

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	1.7000e-004	9.0000e-005	1.2100e-003	1.0000e-005	1.0300e-003	0.0000	1.0300e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.5676	0.5676	1.0000e-005	0.0000	0.5677
Total	**1.7000e-004**	**9.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**1.0300e-003**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.5676**	**0.5676**	**1.0000e-005**	**0.0000**	**0.5677**

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	0.0120	0.0654	0.1286	2.8000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	24.1504	24.1504	9.6000e-004	0.0000	24.1745
Total	**0.0120**	**0.0654**	**0.1286**	**2.8000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**24.1504**	**24.1504**	**9.6000e-004**	**0.0000**	**24.1745**

3.2 Demolition - 2035

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	1.7000e-004	9.0000e-005	1.2100e-003	1.0000e-005	1.0300e-003	0.0000	1.0300e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.5676	0.5676	1.0000e-005	0.0000	0.5677
Total	**1.7000e-004**	**9.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**1.0300e-003**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**0.5676**	**0.5676**	**1.0000e-005**	**0.0000**	**0.5677**

3.3 Site Preparation - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6700e-003	5.3200e-003	0.0106	4.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	3.8767	3.8767	1.3000e-004	0.0000	3.8801
Total	**1.6700e-003**	**5.3200e-003**	**0.0106**	**4.0000e-005**	**2.3900e-003**	**1.7000e-004**	**2.5600e-003**	**2.6000e-004**	**1.7000e-004**	**4.3000e-004**	**0.0000**	**3.8767**	**3.8767**	**1.3000e-004**	**0.0000**	**3.8801**

3.3 Site Preparation - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0524	0.0524	0.0000	0.0000	0.0524
Total	**2.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0524**	**0.0524**	**0.0000**	**0.0000**	**0.0524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6700e-003	5.3200e-003	0.0106	4.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	3.8767	3.8767	1.3000e-004	0.0000	3.8800
Total	**1.6700e-003**	**5.3200e-003**	**0.0106**	**4.0000e-005**	**2.3900e-003**	**1.7000e-004**	**2.5600e-003**	**2.6000e-004**	**1.7000e-004**	**4.3000e-004**	**0.0000**	**3.8767**	**3.8767**	**1.3000e-004**	**0.0000**	**3.8800**

3.3 Site Preparation - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0524	0.0524	0.0000	0.0000	0.0524
Total	**2.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0524**	**0.0524**	**0.0000**	**0.0000**	**0.0524**

3.4 Grading - 2035

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1500e-003	0.0132	0.0235	8.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	6.4998	6.4998	2.5000e-004	0.0000	6.5061
Total	**3.1500e-003**	**0.0132**	**0.0235**	**8.0000e-005**	**0.0197**	**3.7000e-004**	**0.0200**	**0.0101**	**3.7000e-004**	**0.0105**	**0.0000**	**6.4998**	**6.4998**	**2.5000e-004**	**0.0000**	**6.5061**

3.4 Grading - 2035

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	4.0000e-005	2.0000e-005	2.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1310
Total	**4.0000e-005**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1310**

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1500e-003	0.0132	0.0235	8.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	6.4998	6.4998	2.5000e-004	0.0000	6.5061
Total	**3.1500e-003**	**0.0132**	**0.0235**	**8.0000e-005**	**0.0197**	**3.7000e-004**	**0.0200**	**0.0101**	**3.7000e-004**	**0.0105**	**0.0000**	**6.4998**	**6.4998**	**2.5000e-004**	**0.0000**	**6.5061**

3.4 Grading - 2035

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	4.0000e-005	2.0000e-005	2.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1310
Total	**4.0000e-005**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1310**

3.5 Building Construction - 2035

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	0.1242	0.7849	1.4939	3.0200e-003		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	249.3689	249.3689	9.9900e-003	0.0000	249.6188
Total	**0.1242**	**0.7849**	**1.4939**	**3.0200e-003**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**249.3689**	**249.3689**	**9.9900e-003**	**0.0000**	**249.6188**

3.5 Building Construction - 2035

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	2.1000e-004	7.1400e-003	2.2000e-003	3.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	2.6118	2.6118	9.0000e-005	0.0000	2.6139
Worker	2.9000e-004	1.5000e-004	2.0400e-003	1.0000e-005	1.7400e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	0.9605	0.9605	1.0000e-005	0.0000	0.9607
Total	**5.0000e-004**	**7.2900e-003**	**4.2400e-003**	**4.0000e-005**	**2.4600e-003**	**2.0000e-005**	**2.4800e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**3.5723**	**3.5723**	**1.0000e-004**	**0.0000**	**3.5747**

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	0.1242	0.7849	1.4939	3.0200e-003		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	249.3686	249.3686	9.9900e-003	0.0000	249.6185
Total	**0.1242**	**0.7849**	**1.4939**	**3.0200e-003**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**249.3686**	**249.3686**	**9.9900e-003**	**0.0000**	**249.6185**

3.5 Building Construction - 2035

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	2.1000e-004	7.1400e-003	2.2000e-003	3.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	2.6118	2.6118	9.0000e-005	0.0000	2.6139
Worker	2.9000e-004	1.5000e-004	2.0400e-003	1.0000e-005	1.7400e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	0.9605	0.9605	1.0000e-005	0.0000	0.9607
Total	**5.0000e-004**	**7.2900e-003**	**4.2400e-003**	**4.0000e-005**	**2.4600e-003**	**2.0000e-005**	**2.4800e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**3.5723**	**3.5723**	**1.0000e-004**	**0.0000**	**3.5747**

3.6 Paving - 2035

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	4.6500e-003	0.0233	0.0625	1.1000e-004		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	9.2678	9.2678	3.8000e-004	0.0000	9.2773
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6500e-003**	**0.0233**	**0.0625**	**1.1000e-004**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**9.2678**	**9.2678**	**3.8000e-004**	**0.0000**	**9.2773**

3.6 Paving - 2035

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	1.0000e-004	5.0000e-005	7.0000e-004	0.0000	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.3274	0.3274	0.0000	0.0000	0.3275
Total	**1.0000e-004**	**5.0000e-005**	**7.0000e-004**	**0.0000**	**5.9000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.3274**	**0.3274**	**0.0000**	**0.0000**	**0.3275**

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	4.6500e-003	0.0233	0.0625	1.1000e-004		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	9.2678	9.2678	3.8000e-004	0.0000	9.2773
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.6500e-003**	**0.0233**	**0.0625**	**1.1000e-004**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**9.2678**	**9.2678**	**3.8000e-004**	**0.0000**	**9.2773**

3.6 Paving - 2035

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	1.0000e-004	5.0000e-005	7.0000e-004	0.0000	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.3274	0.3274	0.0000	0.0000	0.3275
Total	**1.0000e-004**	**5.0000e-005**	**7.0000e-004**	**0.0000**	**5.9000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.3274**	**0.3274**	**0.0000**	**0.0000**	**0.3275**

3.7 Architectural Coating - 2035

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	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-004	7.6000e-004	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2556
Total	**5.1300e-003**	**7.6000e-004**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.2553**	**0.2553**	**1.0000e-005**	**0.0000**	**0.2556**

3.7 Architectural Coating - 2035

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	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
Total	**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**

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	5.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-004	7.6000e-004	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2556
Total	**5.1300e-003**	**7.6000e-004**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.2553**	**0.2553**	**1.0000e-005**	**0.0000**	**0.2556**

3.7 Architectural Coating - 2035

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	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
Total	**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**

3.7 Architectural Coating - 2036

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	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	3.0300e-003	7.1800e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	1.0213	1.0213	4.0000e-005	0.0000	1.0222
Total	**0.0205**	**3.0300e-003**	**7.1800e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**1.0213**	**1.0213**	**4.0000e-005**	**0.0000**	**1.0222**

3.7 Architectural Coating - 2036

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	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
Total	**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**

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	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	3.0300e-003	7.1800e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	1.0213	1.0213	4.0000e-005	0.0000	1.0222
Total	**0.0205**	**3.0300e-003**	**7.1800e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**1.0213**	**1.0213**	**4.0000e-005**	**0.0000**	**1.0222**

3.7 Architectural Coating - 2036

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	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
Total	**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**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.621663	0.033362	0.179130	0.101130	0.011078	0.005126	0.013709	0.024709	0.002299	0.001422	0.005077	0.000653	0.000642

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project S-4, S-5 and S-6 (Run13)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-Rail	125.00	1000sqft	8.60	125,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SJC Emission Modeling Basis

Construction Phase -

Vehicle Trips - Construction Only

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Nonresidential_Exterior	62500	0
tblAreaCoating	Area_Nonresidential_Interior	187500	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintParkingValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	100	0
tblEnergyUse	LightingElect	1.62	0.00
tblEnergyUse	NT24E	7.99	0.00

tblEnergyUse	NT24NG	3.06	0.00
tblEnergyUse	T24E	0.14	0.00
tblEnergyUse	T24NG	0.73	0.00
tblLandUse	LotAcreage	2.87	8.60
tblSolidWaste	SolidWasteGenerationRate	117.50	0.00
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	28,906,250.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3309	3.0974	2.4862	4.7600e-003	0.2175	0.1602	0.3777	0.1000	0.1500	0.2500	0.0000	418.5685	418.5685	0.0869	0.0000	420.7403
2021	0.6865	0.3214	0.3357	6.0000e-004	7.0300e-003	0.0164	0.0235	1.9000e-003	0.0154	0.0173	0.0000	52.9253	52.9253	0.0120	0.0000	53.2252
Maximum	**0.6865**	**3.0974**	**2.4862**	**4.7600e-003**	**0.2175**	**0.1602**	**0.3777**	**0.1000**	**0.1500**	**0.2500**	**0.0000**	**418.5685**	**418.5685**	**0.0869**	**0.0000**	**420.7403**

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					
2020	0.3309	3.0974	2.4862	4.7600e-003	0.2175	0.1602	0.3777	0.1000	0.1500	0.2500	0.0000	418.5681	418.5681	0.0869	0.0000	420.7399
2021	0.6865	0.3214	0.3357	6.0000e-004	7.0300e-003	0.0164	0.0235	1.9000e-003	0.0154	0.0173	0.0000	52.9253	52.9253	0.0120	0.0000	53.2251
Maximum	**0.6865**	**3.0974**	**2.4862**	**4.7600e-003**	**0.2175**	**0.1602**	**0.3777**	**0.1000**	**0.1500**	**0.2500**	**0.0000**	**418.5681**	**418.5681**	**0.0869**	**0.0000**	**420.7399**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.0682	1.0682
2	**4-1-2020**	**6-30-2020**	0.7777	0.7777
3	**7-1-2020**	**9-30-2020**	0.7863	0.7863
4	**10-1-2020**	**12-31-2020**	0.7885	0.7885
5	**1-1-2021**	**3-31-2021**	1.0145	1.0145
		Highest	1.0682	1.0682

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**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**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	2/11/2020	5	10	
3	Grading	Grading	2/12/2020	3/10/2020	5	20	
4	Building Construction	Building Construction	3/11/2020	1/26/2021	5	230	
5	Paving	Paving	1/27/2021	2/23/2021	5	20	
6	Architectural Coating	Architectural Coating	2/24/2021	3/23/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 187,500; Non-Residential Outdoor: 62,500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	53.00	20.00	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
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**		**0.0166**	**0.0166**		**0.0154**	**0.0154**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.3 Site Preparation - 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					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 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	3.0000e-004	2.1000e-004	2.2500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6121	0.6121	2.0000e-005	0.0000	0.6125
Total	**3.0000e-004**	**2.1000e-004**	**2.2500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6121**	**0.6121**	**2.0000e-005**	**0.0000**	**0.6125**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 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	3.0000e-004	2.1000e-004	2.2500e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6121	0.6121	2.0000e-005	0.0000	0.6125
Total	**3.0000e-004**	**2.1000e-004**	**2.2500e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6121**	**0.6121**	**2.0000e-005**	**0.0000**	**0.6125**

3.4 Grading - 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					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2639	0.1605	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.0588	26.0588	8.4300e-003	0.0000	26.2694
Total	**0.0243**	**0.2639**	**0.1605**	**3.0000e-004**	**0.0655**	**0.0127**	**0.0783**	**0.0337**	**0.0117**	**0.0454**	**0.0000**	**26.0588**	**26.0588**	**8.4300e-003**	**0.0000**	**26.2694**

3.4 Grading - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

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					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2639	0.1605	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.0587	26.0587	8.4300e-003	0.0000	26.2694
Total	**0.0243**	**0.2639**	**0.1605**	**3.0000e-004**	**0.0655**	**0.0127**	**0.0783**	**0.0337**	**0.0117**	**0.0454**	**0.0000**	**26.0587**	**26.0587**	**8.4300e-003**	**0.0000**	**26.2694**

3.4 Grading - 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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**5.0000e-004**	**3.6000e-004**	**3.7500e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0202**	**1.0202**	**3.0000e-005**	**0.0000**	**1.0209**

3.5 Building Construction - 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	0.2247	2.0337	1.7859	2.8500e-003		0.1184	0.1184		0.1113	0.1113	0.0000	245.5066	245.5066	0.0599	0.0000	247.0040
Total	**0.2247**	**2.0337**	**1.7859**	**2.8500e-003**		**0.1184**	**0.1184**		**0.1113**	**0.1113**	**0.0000**	**245.5066**	**245.5066**	**0.0599**	**0.0000**	**247.0040**

3.5 Building Construction - 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	8.4000e-003	0.2414	0.0643	5.8000e-004	0.0140	1.2000e-003	0.0151	4.0300e-003	1.1400e-003	5.1800e-003	0.0000	55.4259	55.4259	2.5400e-003	0.0000	55.4894
Worker	0.0187	0.0134	0.1406	4.2000e-004	0.0446	2.9000e-004	0.0449	0.0119	2.7000e-004	0.0121	0.0000	38.2108	38.2108	9.4000e-004	0.0000	38.2342
Total	**0.0271**	**0.2548**	**0.2049**	**1.0000e-003**	**0.0585**	**1.4900e-003**	**0.0600**	**0.0159**	**1.4100e-003**	**0.0173**	**0.0000**	**93.6367**	**93.6367**	**3.4800e-003**	**0.0000**	**93.7236**

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	0.2247	2.0337	1.7859	2.8500e-003		0.1184	0.1184		0.1113	0.1113	0.0000	245.5063	245.5063	0.0599	0.0000	247.0037
Total	**0.2247**	**2.0337**	**1.7859**	**2.8500e-003**		**0.1184**	**0.1184**		**0.1113**	**0.1113**	**0.0000**	**245.5063**	**245.5063**	**0.0599**	**0.0000**	**247.0037**

3.5 Building Construction - 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	8.4000e-003	0.2414	0.0643	5.8000e-004	0.0140	1.2000e-003	0.0151	4.0300e-003	1.1400e-003	5.1800e-003	0.0000	55.4259	55.4259	2.5400e-003	0.0000	55.4894
Worker	0.0187	0.0134	0.1406	4.2000e-004	0.0446	2.9000e-004	0.0449	0.0119	2.7000e-004	0.0121	0.0000	38.2108	38.2108	9.4000e-004	0.0000	38.2342
Total	**0.0271**	**0.2548**	**0.2049**	**1.0000e-003**	**0.0585**	**1.4900e-003**	**0.0600**	**0.0159**	**1.4100e-003**	**0.0173**	**0.0000**	**93.6367**	**93.6367**	**3.4800e-003**	**0.0000**	**93.7236**

3.5 Building Construction - 2021

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	0.0171	0.1569	0.1492	2.4000e-004		8.6300e-003	8.6300e-003		8.1100e-003	8.1100e-003	0.0000	20.8474	20.8474	5.0300e-003	0.0000	20.9731
Total	**0.0171**	**0.1569**	**0.1492**	**2.4000e-004**		**8.6300e-003**	**8.6300e-003**		**8.1100e-003**	**8.1100e-003**	**0.0000**	**20.8474**	**20.8474**	**5.0300e-003**	**0.0000**	**20.9731**

3.5 Building Construction - 2021

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	5.9000e-004	0.0185	4.9200e-003	5.0000e-005	1.1800e-003	4.0000e-005	1.2300e-003	3.4000e-004	4.0000e-005	3.8000e-004	0.0000	4.6625	4.6625	2.0000e-004	0.0000	4.6676
Worker	1.4700e-003	1.0200e-003	0.0109	3.0000e-005	3.7800e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	3.1317	3.1317	7.0000e-005	0.0000	3.1335
Total	**2.0600e-003**	**0.0195**	**0.0158**	**8.0000e-005**	**4.9600e-003**	**6.0000e-005**	**5.0400e-003**	**1.3500e-003**	**6.0000e-005**	**1.4100e-003**	**0.0000**	**7.7942**	**7.7942**	**2.7000e-004**	**0.0000**	**7.8011**

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	0.0171	0.1569	0.1492	2.4000e-004		8.6300e-003	8.6300e-003		8.1100e-003	8.1100e-003	0.0000	20.8473	20.8473	5.0300e-003	0.0000	20.9731
Total	**0.0171**	**0.1569**	**0.1492**	**2.4000e-004**		**8.6300e-003**	**8.6300e-003**		**8.1100e-003**	**8.1100e-003**	**0.0000**	**20.8473**	**20.8473**	**5.0300e-003**	**0.0000**	**20.9731**

3.5 Building Construction - 2021

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	5.9000e-004	0.0185	4.9200e-003	5.0000e-005	1.1800e-003	4.0000e-005	1.2300e-003	3.4000e-004	4.0000e-005	3.8000e-004	0.0000	4.6625	4.6625	2.0000e-004	0.0000	4.6676
Worker	1.4700e-003	1.0200e-003	0.0109	3.0000e-005	3.7800e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	3.1317	3.1317	7.0000e-005	0.0000	3.1335
Total	**2.0600e-003**	**0.0195**	**0.0158**	**8.0000e-005**	**4.9600e-003**	**6.0000e-005**	**5.0400e-003**	**1.3500e-003**	**6.0000e-005**	**1.4100e-003**	**0.0000**	**7.7942**	**7.7942**	**2.7000e-004**	**0.0000**	**7.8011**

3.6 Paving - 2021

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

3.6 Paving - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

3.6 Paving - 2021

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**4.6000e-004**	**3.2000e-004**	**3.4300e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9848**	**0.9848**	**2.0000e-005**	**0.0000**	**0.9854**

3.7 Architectural Coating - 2021

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	0.6518					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.6540**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.3000e-004	2.5200e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7222	0.7222	2.0000e-005	0.0000	0.7226
Total	**3.4000e-004**	**2.3000e-004**	**2.5200e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7222**	**0.7222**	**2.0000e-005**	**0.0000**	**0.7226**

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	0.6518					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.6540**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.3000e-004	2.5200e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7222	0.7222	2.0000e-005	0.0000	0.7226
Total	**3.4000e-004**	**2.3000e-004**	**2.5200e-003**	**1.0000e-005**	**8.7000e-004**	**1.0000e-005**	**8.8000e-004**	**2.3000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7222**	**0.7222**	**2.0000e-005**	**0.0000**	**0.7226**

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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Refrigerated Warehouse-Rail	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-Rail	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

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					
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX A-2
ACEIT OUTPUTS

FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 2:44:28 PM

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STUDY

Study Name

A-17 (part)

Study Description

Extend parallel Taxiway W south from Taxiway B to Runway 12R-30L (for ADG-III aircraft).

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EMISSION
S
INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.111648	0.6932	0.003237	0.123595	0.029368	0.194146	553.7244	0.017611	0.002173

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.2555	0.604069	0.002422	0.028551	0.026267	0.143408	439.7672	--	--
2020	OnRoad	0.856148	0.089131	0.000815	0.003294	0.003101	0.050738	113.9572	0.017611	0.002173
2020	Fugitive	0	0	0	0.09175	--	0	--	--	--
2020	TOTAL	1.111648	0.6932	0.003237	0.123595	0.029368	0.194146	553.7244	0.017611	0.002173

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	14.4	0.035877	0.000162	1.71E-05	0.001191	0.001096	0.011387	0.076063	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	14.4	0.001159	0.002057	2.37E-06	0.000201	0.000185	0.000268	0.3649	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	19.2	0.001646	0.004708	1.98E-05	0.00019	0.000175	0.001091	3.645812	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	17.5728	0.00092	0.001495	2.70E-06	0.000132	0.000121	0.000202	0.445621	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	17.5728	0.000239	0.001515	1.40E-06	3.27E-05	3.01E-05	7.70E-05	0.247026	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	73.22	0.006278	0.017953	7.57E-05	0.000724	0.000666	0.004078	13.90346	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	35.1456	0.001119	0.004084	8.42E-06	0.000269	0.000248	0.000544	1.403044	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	52.7184	0.00452	0.012926	5.45E-05	0.000521	0.00048	0.002944	10.01049	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	17.5728	0.000956	0.002233	5.69E-06	0.000211	0.000194	0.000355	0.973115	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	17.5728	0.000874	0.002008	5.62E-06	0.000189	0.000174	0.000343	0.97314	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	17.5728	0.00068	0.001274	1.15E-06	0.000101	9.28E-05	0.000135	0.154152	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	13.536	0.000571	0.001318	4.25E-06	0.000118	0.000108	0.000257	0.749618	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	13.536	0.001161	0.003319	1.40E-05	0.000134	0.000123	0.000778	2.570298	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	13.536	0.00045	0.00108	4.16E-06	8.34E-05	7.67E-05	0.000242	0.749644	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	13.536	0.000737	0.00172	4.38E-06	0.000162	0.000149	0.000279	0.749573	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	13.536	0.000431	0.001573	3.24E-06	0.000104	9.54E-05	0.000229	0.540369	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	13.536	0.001161	0.003319	1.40E-05	0.000134	0.000123	0.000778	2.570298
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	13.536	0.001148	0.00115	2.78E-06	0.000138	0.000127	0.000174	0.475678
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	7.52	0.000645	0.001844	7.77E-06	7.43E-05	6.84E-05	0.000445	1.427943
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	7.52	0.000409	0.000956	2.43E-06	9.02E-05	8.30E-05	0.000166	0.416429
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	7.52	0.000239	0.000874	1.80E-06	5.76E-05	5.30E-05	0.000141	0.300205
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	7.52	0.000645	0.001844	7.77E-06	7.43E-05	6.84E-05	0.000445	1.427943
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	7.52	0.000691	0.000535	7.03E-07	9.54E-05	8.78E-05	0.000186	0.109616
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	29.288	0.001236	0.002851	9.20E-06	0.000254	0.000234	0.000533	1.621958
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	29.288	0.002511	0.007181	3.03E-05	0.00029	0.000266	0.001649	5.561383
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	29.288	0.002511	0.007181	3.03E-05	0.00029	0.000266	0.001649	5.561383
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	13.51754	0.001146	0.001149	2.78E-06	0.000138	0.000127	0.000174	0.475029
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	21.966	0.000927	0.002138	6.90E-06	0.000191	0.000175	0.000404	1.216468
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	58.576	0.005022	0.014362	6.05E-05	0.000579	0.000533	0.003268	11.12277
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	17.5728	0.000585	0.001402	5.40E-06	0.000108	9.96E-05	0.00031	0.973208
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	17.5728	0.001507	0.004309	1.82E-05	0.000174	0.00016	0.001001	3.33683

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	17.5728	0.00149	0.001493	3.61E-06	0.000179	0.000165	0.000221	0.617538
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	21.966	0.004672	0.011608	2.47E-05	0.00069	0.000635	0.001409	4.170739
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	8.269647	0.000349	0.000805	2.60E-06	7.18E-05	6.60E-05	0.000165	0.45797
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	4.588889	0.000393	0.001125	4.74E-06	4.54E-05	4.17E-05	0.000283	0.871366
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	18.35556	0.001574	0.004501	1.90E-05	0.000181	0.000167	0.001045	3.485464
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	18.35556	0.000584	0.002133	4.40E-06	0.000141	0.000129	0.000299	0.73277
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	18.35556	0.001574	0.004501	1.90E-05	0.000181	0.000167	0.001045	3.485464
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	18.35556	0.001372	0.001489	1.34E-06	0.0002	0.000184	0.000318	0.20048
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	18.35556	0.001687	0.001306	1.72E-06	0.000233	0.000214	0.000342	0.267561
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	5.8691	0.000248	0.000571	1.84E-06	5.10E-05	4.69E-05	0.000122	0.325028
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	5.8691	0.000278	0.000864	3.09E-06	4.31E-05	3.96E-05	0.00019	0.557211
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	5.8691	0.000498	0.000499	1.21E-06	5.98E-05	5.50E-05	8.62E-05	0.20625
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	5.2875	0.000453	0.001296	5.46E-06	5.23E-05	4.81E-05	0.000322	1.004022
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	5.2875	0.000453	0.001296	5.46E-06	5.23E-05	4.81E-05	0.000322	1.004022
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	7.04	0.000604	0.001726	7.28E-06	6.96E-05	6.40E-05	0.000419	1.336798
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	7.04	0.000383	0.000895	2.28E-06	8.45E-05	7.77E-05	0.000157	0.389849
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	7.04	0.000224	0.000818	1.69E-06	5.39E-05	4.96E-05	0.000134	0.281043
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	7.04	0.000604	0.001726	7.28E-06	6.96E-05	6.40E-05	0.000419	1.336798
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	7.04	0.000526	0.000571	5.13E-07	7.68E-05	7.07E-05	0.000153	0.076891
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	7.04	0.000647	0.000501	6.58E-07	8.93E-05	8.22E-05	0.00018	0.102619
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	108.56	0.009308	0.026618	0.000112	0.001073	0.000987	0.006031	20.61403
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	108.56	0.003455	0.012615	2.60E-05	0.000832	0.000765	0.001614	4.333814
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	108.56	0.009308	0.026618	0.000112	0.001073	0.000987	0.006031	20.61403
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	4.8	0.000153	0.000558	1.15E-06	3.68E-05	3.38E-05	0.000102	0.19162

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	9.6	0.000823	0.002354	9.92E-06	9.49E-05	8.73E-05	0.00056	1.822906													
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.8	0.000112	0.000115	9.93E-08	1.04E-05	9.61E-06	1.80E-05	0.01336													
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	4.8	0.000441	0.000342	4.49E-07	6.09E-05	5.60E-05	0.000147	0.069967													
1	2020	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	11.09874	0.000468	0.001081	3.49E-06	9.64E-05	8.86E-05	0.000214	0.614644													
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	78.10222	0.006697	0.01915	8.07E-05	0.000772	0.00071	0.004348	14.83052													
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	11.09874	0.000952	0.002721	1.15E-05	0.00011	0.000101	0.000643	2.107495													
1	2020	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	10.81415	0.000917	0.000919	2.22E-06	0.00011	0.000101	0.000143	0.380028													
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	13.04267	0.00055	0.00127	4.10E-06	0.000113	0.000104	0.000248	0.722298													
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	13.04267	0.001118	0.003198	1.35E-05	0.000129	0.000119	0.000751	2.47662													
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	13.04267	0.001118	0.003198	1.35E-05	0.000129	0.000119	0.000751	2.47662													
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	2	--	129	413	115	--	--	--	--	--	10983	0.014883	0.024341	0.000106	0.000899	0.000872	0.000269	13.78328	0.00215	0.000764
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	413	115	--	--	--	--	--	5858	0.007762	0.012966	5.66E-05	0.000479	0.000465	0.000136	7.349468	0.001147	0.000408
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.04065	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.009	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.02865	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.01345	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	9.58E-09	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	1.69	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	413	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	115	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	1.2	Acres	
1	Taxiways	Concrete Placement	2196.6	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	423	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	846	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	2196.6	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	2196.6	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	5271.9	Square Yards
1	Taxiways	Fencing	413	Linear Feet
1	Taxiways	Grading	5869.1	Square Yards
1	Taxiways	Hydroseeding	52875	Square Feet
1	Taxiways	Lighting	1056	Linear Feet
1	Taxiways	Markings	47495	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	1.2	Acres
1	Taxiways	Subbase Placement	5271.9	Square Yards
1	Taxiways	Subbase Placement	1757.3	Cubic Yards
1	Taxiways	Topsoil Placement	978.2	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	1.20 Acre	12 Hours per 1.00 Acre	14.4 hours	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	1.20 Acre	12 Hours per 1.00 Acre	14.4 hours	
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	1.20 Acre	16 Hours per 1.00 Acre	19.2 hours	
1 Taxiways	Concrete Placement	Air Compressor	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours	
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours	
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	2196.60 CY	8 Hours per 240.00 CY	73.22 hours	
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	2196.60 CY	16 Hours per 1000.00 CY	35.15 hours	
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	2196.60 CY	24 Hours per 1000.00 CY	52.72 hours	
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours	
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours	
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours	
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours	
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours	
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours	
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours	
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours	

1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	423.00 LF	8 Hours per 250.00 LF	13.54 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	846.00 LF	8 Hours per 900.00 LF	7.52 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	846.00 LF	8 Hours per 900.00 LF	7.52 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	846.00 LF	8 Hours per 900.00 LF	7.52 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	846.00 LF	8 Hours per 900.00 LF	7.52 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	846.00 LF	8 Hours per 900.00 LF	7.52 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	2196.60 CY	8 Hours per 600.00 CY	29.29 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	2196.60 CY	8 Hours per 600.00 CY	29.29 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	2196.60 CY	8 Hours per 600.00 CY	29.29 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	2196.60 CY	8 Hours per 1300.00 CY	13.52 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	2196.60 CY	8 Hours per 800.00 CY	21.97 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	2196.60 CY	8 Hours per 300.00 CY	58.58 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours

1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel	2196.60 CY	8 Hours per 1000.00 CY	17.57 hours
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	2196.60 CY	8 Hours per 800.00 CY	21.97 hours
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	5271.90 SY	8 Hours per 5100.00 SY	8.27 hours
1 Taxiways	Fencing	Concrete Truck	Diesel	413.00 LF	2 Hours per 180.00 LF	4.59 hours
1 Taxiways	Fencing	Dump Truck	Diesel	413.00 LF	8 Hours per 180.00 LF	18.36 hours
1 Taxiways	Fencing	Other General Equipment	Diesel	413.00 LF	8 Hours per 180.00 LF	18.36 hours
1 Taxiways	Fencing	Pickup Truck	Diesel	413.00 LF	8 Hours per 180.00 LF	18.36 hours
1 Taxiways	Fencing	Skid Steer Loader	Diesel	413.00 LF	8 Hours per 180.00 LF	18.36 hours
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	413.00 LF	8 Hours per 180.00 LF	18.36 hours
1 Taxiways	Grading	Dozer	Diesel	5869.10 SY	8 Hours per 8000.00 SY	5.87 hours
1 Taxiways	Grading	Grader	Diesel	5869.10 SY	8 Hours per 8000.00 SY	5.87 hours
1 Taxiways	Grading	Roller	Diesel	5869.10 SY	8 Hours per 8000.00 SY	5.87 hours
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	52875.00 SF	8 Hours per 80000.00 SF	5.29 hours
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	52875.00 SF	8 Hours per 80000.00 SF	5.29 hours
1 Taxiways	Lighting	Dump Truck	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours
1 Taxiways	Lighting	Loader	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	1056.00 LF	8 Hours per 1200.00 LF	7.04 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	47495.00 SF	8 Hours per 3500.00 SF	108.56 hours
1	Taxiways	Markings	Other General Equipment	Diesel	47495.00 SF	8 Hours per 3500.00 SF	108.56 hours
1	Taxiways	Markings	Pickup Truck	Diesel	47495.00 SF	8 Hours per 3500.00 SF	108.56 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	1.20 Acre	4 Hours per 1.00 Acre	4.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	1.20 Acre	8 Hours per 1.00 Acre	9.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	1.20 Acre	4 Hours per 1.00 Acre	4.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	1.20 Acre	4 Hours per 1.00 Acre	4.8 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	5271.90 SY	8 Hours per 3800.00 SY	11.1 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	1757.30 CY	8 Hours per 180.00 CY	78.1 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	5271.90 SY	8 Hours per 3800.00 SY	11.1 hours
1	Taxiways	Subbase Placement	Roller	Diesel	1757.30 CY	8 Hours per 1300.00 CY	10.81 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	978.20 CY	8 Hours per 600.00 CY	13.04 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	978.20 CY	8 Hours per 600.00 CY	13.04	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	978.20 CY	8 Hours per 600.00 CY	13.04	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	413	115	--	--	--	--	--	--	10983	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	413	115	--	--	--	--	--	--	5858	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	2196.6	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x Vs =	81.3	lbs
1 Taxiways	Material Movement (Unpaved Roads)	Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	2092.1	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	57.3	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1935	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	18	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	1.09	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	1306.1 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	26.9 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 2:54:00 PM

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STUDY

Study Name

A-23 (part)

Study Description

Widen cross Taxiway J at Runway 12R-30L for higher-speed arrivals exit to west.

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EMISSIONS INVENTORY - SUMMARY

Total Emissions by Year

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.049115	0.574691	0.002782	0.080439	0.023536	0.170336	476.1755	0.016135	0.001648

Total Emissions by Source Categories

Units for Non-Greenhouse Gases Emission: Short Ton

FINAL

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.2022	0.502169	0.00204	0.022861	0.021033	0.11974	371.6652	--	--
2020	OnRoad	0.846916	0.072522	0.000742	0.002678	0.002503	0.050596	104.5104	0.016135	0.001648
2020	Fugitive	0	0	0	0.0549	--	0	--	--	--
2020	TOTAL	1.049115	0.574691	0.002782	0.080439	0.023536	0.170336	476.1755	0.016135	0.001648

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2

1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	8.4	0.020928	9.43E-05	1.00E-05	0.000695	0.000639	0.008235	0.04437	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	8.4	0.000676	0.0012	1.38E-06	0.000117	0.000108	0.000169	0.212858	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	11.2	0.00096	0.002746	1.16E-05	0.000111	0.000102	0.000649	2.126724	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	9.7088	0.000508	0.000826	1.49E-06	7.27E-05	6.69E-05	0.000124	0.246201	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	9.7088	0.000132	0.000837	7.76E-07	1.81E-05	1.66E-05	4.27E-05	0.13648	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	40.45333	0.003469	0.009919	4.18E-05	0.0004	0.000368	0.002266	7.681524	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	19.4176	0.000618	0.002256	4.65E-06	0.000149	0.000137	0.000315	0.775168	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	29.1264	0.002497	0.007141	3.01E-05	0.000288	0.000265	0.00164	5.530697	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	9.7088	0.000528	0.001234	3.14E-06	0.000116	0.000107	0.000207	0.537637	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	9.7088	0.000483	0.001109	3.11E-06	0.000104	9.59E-05	0.0002	0.537651	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	9.7088	0.000376	0.000704	6.33E-07	5.57E-05	5.13E-05	7.50E-05	0.085168	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	10.816	0.000456	0.001053	3.40E-06	9.39E-05	8.64E-05	0.000209	0.598986	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	10.816	0.000927	0.002652	1.12E-05	0.000107	9.84E-05	0.000628	2.053808	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	10.816	0.00036	0.000863	3.32E-06	6.66E-05	6.13E-05	0.000197	0.599006	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	10.816	0.000589	0.001374	3.50E-06	0.00013	0.000119	0.000228	0.598949	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	10.816	0.000344	0.001257	2.59E-06	8.29E-05	7.62E-05	0.000189	0.431785	
1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	10.816	0.000927	0.002652	1.12E-05	0.000107	9.84E-05	0.000628	2.053808	
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	10.816	0.000917	0.000919	2.22E-06	0.00011	0.000101	0.000143	0.380093	

1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	6.008889	0.000515	0.001473	6.21E-06	5.94E-05	5.47E-05	0.000362	1.141004
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	6.008889	0.000327	0.000764	1.94E-06	7.21E-05	6.63E-05	0.000138	0.33275
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	6.008889	0.000191	0.000698	1.44E-06	4.60E-05	4.24E-05	0.000119	0.23988
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	6.008889	0.000515	0.001473	6.21E-06	5.94E-05	5.47E-05	0.000362	1.141004
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	6.008889	0.000552	0.000428	5.62E-07	7.62E-05	7.01E-05	0.000165	0.087589
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	16.18133	0.000683	0.001575	5.08E-06	0.00014	0.000129	0.000303	0.896116
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	16.18133	0.001387	0.003967	1.67E-05	0.00016	0.000147	0.000924	3.072609
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	16.18133	0.001387	0.003967	1.67E-05	0.00016	0.000147	0.000924	3.072609
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	7.468308	0.000633	0.000635	1.53E-06	7.60E-05	7.00E-05	0.000105	0.262449
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	12.136	0.000512	0.001181	3.81E-06	0.000105	9.69E-05	0.000232	0.672087
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	32.36267	0.002775	0.007935	3.34E-05	0.00032	0.000294	0.001819	6.145219
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	9.7088	0.000323	0.000775	2.98E-06	5.98E-05	5.50E-05	0.000178	0.537688
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	9.7088	0.000832	0.00238	1.00E-05	9.60E-05	8.83E-05	0.000566	1.843566
1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	9.7088	0.000823	0.000825	1.99E-06	9.89E-05	9.10E-05	0.00013	0.341184
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	12.136	0.002581	0.006413	1.36E-05	0.000381	0.000351	0.000817	2.304293

1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	4.568784	0.000193	0.000445	1.44E-06	3.97E-05	3.65E-05	9.97E-05	0.253017
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	3.644444	0.000312	0.000894	3.77E-06	3.60E-05	3.31E-05	0.000231	0.692029
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	14.57778	0.00125	0.003574	1.51E-05	0.000144	0.000133	0.000836	2.768117
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	14.57778	0.000464	0.001694	3.49E-06	0.000112	0.000103	0.000244	0.581958
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	14.57778	0.00125	0.003574	1.51E-05	0.000144	0.000133	0.000836	2.768117
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	14.57778	0.001089	0.001183	1.06E-06	0.000159	0.000146	0.000263	0.159219
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	14.57778	0.00134	0.001037	1.36E-06	0.000185	0.00017	0.000288	0.212494
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	3.3766	0.000142	0.000329	1.06E-06	2.93E-05	2.70E-05	7.88E-05	0.186995
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	3.3766	0.00016	0.000497	1.78E-06	2.48E-05	2.28E-05	0.000118	0.320573
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	3.3766	0.000286	0.000287	6.94E-07	3.44E-05	3.16E-05	5.76E-05	0.118659
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	3.042	0.000261	0.000746	3.14E-06	3.01E-05	2.77E-05	0.000198	0.577633
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	3.042	0.000261	0.000746	3.14E-06	3.01E-05	2.77E-05	0.000198	0.577633
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	5.44	0.000466	0.001334	5.62E-06	5.38E-05	4.95E-05	0.00033	1.03298
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	5.44	0.000296	0.000691	1.76E-06	6.53E-05	6.00E-05	0.000127	0.301247
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	5.44	0.000173	0.000632	1.30E-06	4.17E-05	3.83E-05	0.000111	0.21717
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	5.44	0.000466	0.001334	5.62E-06	5.38E-05	4.95E-05	0.00033	1.03298
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	5.44	0.000407	0.000441	3.96E-07	5.94E-05	5.46E-05	0.00013	0.059416
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	5.44	0.0005	0.000387	5.09E-07	6.90E-05	6.35E-05	0.000157	0.079296
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	59.97714	0.005143	0.014706	6.20E-05	0.000593	0.000546	0.003346	11.38882
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	59.97714	0.001909	0.006969	1.44E-05	0.00046	0.000423	0.000906	2.394342
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	59.97714	0.005143	0.014706	6.20E-05	0.000593	0.000546	0.003346	11.38882
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	2.8	8.91E-05	0.000325	6.71E-07	2.15E-05	1.97E-05	7.27E-05	0.111779
1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	5.6	0.00048	0.001373	5.79E-06	5.54E-05	5.09E-05	0.000339	1.063362
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	2.8	6.51E-05	6.71E-05	5.79E-08	6.10E-06	5.61E-06	1.13E-05	0.007793

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1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	2.8	0.000257	0.000199	2.62E-07	3.55E-05	3.27E-05	0.000119	0.040814												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	6.131789	0.000259	0.000597	1.93E-06	5.32E-05	4.90E-05	0.000127	0.339576												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	43.15111	0.0037	0.01058	4.46E-05	0.000427	0.000392	0.002415	8.193794												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	6.131789	0.000526	0.001503	6.34E-06	6.06E-05	5.58E-05	0.000369	1.164341												
1	2020	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	5.974769	0.000507	0.000508	1.23E-06	6.08E-05	5.60E-05	8.74E-05	0.209964												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	7.504	0.000317	0.000731	2.36E-06	6.51E-05	5.99E-05	0.000151	0.415569												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	7.504	0.000643	0.00184	7.75E-06	7.42E-05	6.83E-05	0.000445	1.424905												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	7.504	0.000643	0.00184	7.75E-06	7.42E-05	6.83E-05	0.000445	1.424905												
On-Road Sources																											
Units for Non-Greenhouse Gases Emission: Short Ton																											
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																											
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	328	80	--	--	--	--	--	6068	0.007946	0.013421	5.87E-05	0.000496	0.000482	0.000137	7.6118	0.001188	0.000422

1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	328	80	--	--	--	--	--	3236	0.005467	0.007278	3.14E-05	0.000266	0.000258	0.000126	4.074077	0.000634	0.000225
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.02245	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.006	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.019	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.00745	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	5.30E-09	0

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INPUT DATA AND SPECIFICATIONS

State/County

California Santa Clara County

Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project Final Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	
1	Taxiways	Concrete Placement	Air Compressor	Diesel	
1	Taxiways	Concrete Placement	Concrete Saws	Diesel	
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	

1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel
1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel

1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel
1 Taxiways	Subbase Placement	Roller	Diesel
1 Taxiways	Topsoil Placement	Dozer	Diesel
1 Taxiways	Topsoil Placement	Dump Truck	Diesel
1 Taxiways	Topsoil Placement	Pickup Truck	Diesel

FINAL

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	0.91	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	328	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	80	Feet

Size Detail (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	0.7	Acres	
1	Taxiways	Concrete Placement	1213.6	Cubic Yards	
1	Taxiways	Drainage - 24 inch SICPP	338	Linear Feet	
1	Taxiways	Drainage - 6 inch Perforated Underdrain	676	Linear Feet	
1	Taxiways	Dust Control	180	Days	
1	Taxiways	Excavation (Borrow)	1213.6	Cubic Yards	

1	Taxiways	Excavation (Cut to Fill)	1213.6	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	2912.6	Square Yards
1	Taxiways	Fencing	328	Linear Feet
1	Taxiways	Grading	3376.6	Square Yards
1	Taxiways	Hydroseeding	30420	Square Feet
1	Taxiways	Lighting	816	Linear Feet
1	Taxiways	Markings	26240	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	0.7	Acres
1	Taxiways	Subbase Placement	2912.6	Square Yards
1	Taxiways	Subbase Placement	970.9	Cubic Yards
1	Taxiways	Topsoil Placement	562.8	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data	
										*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
	1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	0.70 Acre	12 Hours per 1.00 Acre	8.4	hours		
	1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	0.70 Acre	12 Hours per 1.00 Acre	8.4	hours		
	1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	0.70 Acre	16 Hours per 1.00 Acre	11.2	hours		

1	Taxiways	Concrete Placement	Air Compressor	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1	Taxiways	Concrete Placement	Concrete Saws	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	1213.60 CY	8 Hours per 240.00 CY	40.45 hours
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	1213.60 CY	16 Hours per 1000.00 CY	19.42 hours
1	Taxiways	Concrete Placement	Pickup Truck	Diesel	1213.60 CY	24 Hours per 1000.00 CY	29.13 hours
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	338.00 LF	8 Hours per 250.00 LF	10.82 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	676.00 LF	8 Hours per 900.00 LF	6.01 hours

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	676.00 LF	8 Hours per 900.00 LF	6.01 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	676.00 LF	8 Hours per 900.00 LF	6.01 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	676.00 LF	8 Hours per 900.00 LF	6.01 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	676.00 LF	8 Hours per 900.00 LF	6.01 hours
1 Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	1213.60 CY	8 Hours per 600.00 CY	16.18 hours
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	1213.60 CY	8 Hours per 600.00 CY	16.18 hours
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	1213.60 CY	8 Hours per 600.00 CY	16.18 hours
1 Taxiways	Excavation (Borrow)	Roller	Diesel	1213.60 CY	8 Hours per 1300.00 CY	7.47 hours
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	1213.60 CY	8 Hours per 800.00 CY	12.14 hours
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	1213.60 CY	8 Hours per 300.00 CY	32.36 hours
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel	1213.60 CY	8 Hours per 1000.00 CY	9.71 hours
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	1213.60 CY	8 Hours per 800.00 CY	12.14 hours

1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	2912.60 SY	8 Hours per 5100.00 SY	4.57 hours
1 Taxiways	Fencing	Concrete Truck	Diesel	328.00 LF	2 Hours per 180.00 LF	3.64 hours
1 Taxiways	Fencing	Dump Truck	Diesel	328.00 LF	8 Hours per 180.00 LF	14.58 hours
1 Taxiways	Fencing	Other General Equipment	Diesel	328.00 LF	8 Hours per 180.00 LF	14.58 hours
1 Taxiways	Fencing	Pickup Truck	Diesel	328.00 LF	8 Hours per 180.00 LF	14.58 hours
1 Taxiways	Fencing	Skid Steer Loader	Diesel	328.00 LF	8 Hours per 180.00 LF	14.58 hours
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	328.00 LF	8 Hours per 180.00 LF	14.58 hours
1 Taxiways	Grading	Dozer	Diesel	3376.60 SY	8 Hours per 8000.00 SY	3.38 hours
1 Taxiways	Grading	Grader	Diesel	3376.60 SY	8 Hours per 8000.00 SY	3.38 hours
1 Taxiways	Grading	Roller	Diesel	3376.60 SY	8 Hours per 8000.00 SY	3.38 hours
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	30420.00 SF	8 Hours per 80000.00 SF	3.04 hours
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	30420.00 SF	8 Hours per 80000.00 SF	3.04 hours
1 Taxiways	Lighting	Dump Truck	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours
1 Taxiways	Lighting	Loader	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours
1 Taxiways	Lighting	Other General Equipment	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours
1 Taxiways	Lighting	Pickup Truck	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours
1 Taxiways	Lighting	Skid Steer Loader	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours

1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	816.00 LF	8 Hours per 1200.00 LF	5.44 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	26240.00 SF	8 Hours per 3500.00 SF	59.98 hours
1	Taxiways	Markings	Other General Equipment	Diesel	26240.00 SF	8 Hours per 3500.00 SF	59.98 hours
1	Taxiways	Markings	Pickup Truck	Diesel	26240.00 SF	8 Hours per 3500.00 SF	59.98 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	0.70 Acre	4 Hours per 1.00 Acre	2.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	0.70 Acre	8 Hours per 1.00 Acre	5.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	0.70 Acre	4 Hours per 1.00 Acre	2.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	0.70 Acre	4 Hours per 1.00 Acre	2.8 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	2912.60 SY	8 Hours per 3800.00 SY	6.13 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	970.90 CY	8 Hours per 180.00 CY	43.15 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	2912.60 SY	8 Hours per 3800.00 SY	6.13 hours
1	Taxiways	Subbase Placement	Roller	Diesel	970.90 CY	8 Hours per 1300.00 CY	5.97 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	562.80 CY	8 Hours per 600.00 CY	7.5 hours
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	562.80 CY	8 Hours per 600.00 CY	7.5 hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	562.80 CY	8 Hours per 600.00 CY	7.5 hours

FINAL

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	328	80	--	--	--	--	--	--	6068	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	328	80	--	--	--	--	--	--	3236	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896	

1	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012

1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1 Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

	1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234						
	1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234						

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
	1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
	1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
	1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
	1 Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	1213.6	yd3	
	1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	44.9	lbs	
	1 Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction	
	1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons	

1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	1387.7	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	38	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1290	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	12	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	0.602	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years
1 Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
1 Taxiways	Soil Handling	u = Wind speed	5	mph
1 Taxiways	Soil Handling	m = Moisture content	0.25	fraction

1 Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	721.6 tons
1 Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	14.9 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

- Asphalt drying
- Asphalt storage and batching
- Concrete mixing/batching
- Soil handling
- Unstabilized land and wind erosion
- Material movement (unpaved roads)
- Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO_2, CH_4, and N_2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:

- Asphalt Deliveries/Ten Wheelers
- Bulldozer
- Concrete Ready Mix Trucks
- Concrete Ready Trucks Mix for Cores
- Concrete Truck
- Crack Filler (Trailer Mounted)
- Delivery of Tanks (3)
- Distributing Tanker
- Dozer
- Dump Truck
- Dump Truck (12 cy)
- Excavator
- Excavator for U/G Services/Tanks
- Flat Bed or Dump Trucks
- Flatbed Truck
- Grader
- Grout Wheel Truck
- Hoist Equipment with 40 Ton Rig
- Hydralic Hammer
- Hydroseeder
- Line Painting Truck and Sprayer
- Material Deliveries
- Off-Road Truck
- Pickup Truck
- Scraper
- Seed Truck Spreader
- Small Dozer
- Survey Crew Trucks
- Ten Wheelers
- Ten Wheelers- Material Delivery
- Tool Truck
- Tractor Trailer- Equipment Delivery
- Tractor Trailer- Material Delivery
- Tractor Trailer- Steel Deliveries
- Tractor Trailer- Stone Delivery
- Tractor Trailer- Topsoil & Seed
- Tractor Trailer- Truck Delivery
- Tractor Trailer with Boom Hoist- Curbs Del & Place
- Tractor Trailer with Boom Hoist- Delivery
- Tractor Trailers- Rebar Deliveries
- Tractor Trailers Temp Fac.
- Truck for Topsoil & Seed Del&Spread
- Water Truck
- Excavator with Bucket
- Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 3:00:40 PM

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STUDY

Study Name

A-26-1

Study Description

Convert former Runway 11-29 to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.

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EMISSIONS INVENTORY - SUMMARY

Total Emissions by Year

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.55555	1.483331	0.006266	0.381267	0.069001	0.355323	1070.486	0.02725	0.005457

Total Emissions by Source Categories

Units for Non-Greenhouse Gases Emission: Short Ton

FINAL

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.616202	1.289846	0.004977	0.067544	0.06214	0.302078	894.818	--	--
2020	OnRoad	0.939348	0.193485	0.001289	0.007173	0.00686	0.053246	175.6683	0.02725	0.005457
2020	Fugitive	0	0	0	0.30655	--	0	--	--	--
2020	TOTAL	1.55555	1.483331	0.006266	0.381267	0.069001	0.355323	1070.486	0.02725	0.005457

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2

1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	54	0.13454	0.000606	6.43E-05	0.004468	0.004111	0.032189	0.285237	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	54	0.004345	0.007715	8.88E-06	0.000753	0.000692	0.000925	1.368376	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	72	0.006173	0.017654	7.44E-05	0.000712	0.000655	0.00401	13.6718	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	66.276	0.003471	0.005637	1.02E-05	0.000496	0.000457	0.000686	1.680666	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	66.276	0.000901	0.005712	5.30E-06	0.000123	0.000113	0.000289	0.931663	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	276.15	0.023677	0.067709	0.000285	0.00273	0.002512	0.015296	52.43703	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	132.552	0.004219	0.015403	3.18E-05	0.001016	0.000934	0.001963	5.291597	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	198.828	0.017048	0.04875	0.000205	0.001966	0.001808	0.011022	37.75466	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	66.276	0.003607	0.008422	2.15E-05	0.000795	0.000732	0.001268	3.670115	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	66.276	0.003295	0.007573	2.12E-05	0.000711	0.000654	0.001231	3.670209	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	66.276	0.002564	0.004805	4.32E-06	0.000381	0.00035	0.000509	0.581388	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	48.896	0.002063	0.00476	1.54E-05	0.000424	0.000391	0.000876	2.707841	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	48.896	0.004192	0.011989	5.05E-05	0.000483	0.000445	0.002733	9.284668	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	48.896	0.001626	0.003902	1.50E-05	0.000301	0.000277	0.000838	2.707933	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	48.896	0.002661	0.006214	1.58E-05	0.000587	0.00054	0.000942	2.707676	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	48.896	0.001556	0.005682	1.17E-05	0.000375	0.000345	0.000744	1.951973	
1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	48.896	0.004192	0.011989	5.05E-05	0.000483	0.000445	0.002733	9.284668	
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	48.896	0.004146	0.004155	1.00E-05	0.000498	0.000458	0.00058	1.718289	

1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	27.16444	0.002329	0.00666	2.81E-05	0.000269	0.000247	0.001532	5.158149
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	27.16444	0.001478	0.003452	8.79E-06	0.000326	0.0003	0.000535	1.504265
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	27.16444	0.000865	0.003157	6.51E-06	0.000208	0.000191	0.000428	1.084429
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	27.16444	0.002329	0.00666	2.81E-05	0.000269	0.000247	0.001532	5.158149
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	27.16444	0.002497	0.001933	2.54E-06	0.000345	0.000317	0.000468	0.395964
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	110.46	0.004661	0.010754	3.47E-05	0.000959	0.000882	0.001954	6.117231
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	110.46	0.009471	0.027084	0.000114	0.001092	0.001005	0.006136	20.97481
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	110.46	0.009471	0.027084	0.000114	0.001092	0.001005	0.006136	20.97481
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	50.98154	0.004323	0.004332	1.05E-05	0.000519	0.000478	0.000604	1.791578
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	82.845	0.003496	0.008065	2.60E-05	0.000719	0.000662	0.001471	4.587923
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	220.92	0.018942	0.054167	0.000228	0.002184	0.002009	0.012243	41.94963
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	66.276	0.002205	0.005289	2.04E-05	0.000408	0.000376	0.00113	3.670463
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	66.276	0.005683	0.01625	6.85E-05	0.000655	0.000603	0.003694	12.58489
1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	66.276	0.005619	0.005632	1.36E-05	0.000675	0.000621	0.00078	2.329052
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	82.845	0.01762	0.043779	9.32E-05	0.002602	0.002394	0.005076	15.72999

1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	31.18871	0.001316	0.003036	9.80E-06	0.000271	0.000249	0.000566	1.727218
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	16.86667	0.001446	0.004136	1.74E-05	0.000167	0.000153	0.000962	3.202745
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	67.46667	0.005785	0.016542	6.97E-05	0.000667	0.000614	0.00376	12.81098
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	67.46667	0.002147	0.00784	1.62E-05	0.000517	0.000476	0.001015	2.693331
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	67.46667	0.005785	0.016542	6.97E-05	0.000667	0.000614	0.00376	12.81098
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	67.46667	0.005042	0.005475	4.91E-06	0.000736	0.000678	0.001032	0.736872
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	67.46667	0.006201	0.0048	6.31E-06	0.000856	0.000787	0.001046	0.983431
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	21.7098	0.000916	0.002114	6.82E-06	0.000188	0.000173	0.0004	1.20228
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	21.7098	0.00103	0.003195	1.14E-05	0.000159	0.000147	0.000647	2.061122
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	21.7098	0.001841	0.001845	4.46E-06	0.000221	0.000203	0.000268	0.762919
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	19.5584	0.001677	0.004796	2.02E-05	0.000193	0.000178	0.001111	3.713867
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	19.5584	0.001677	0.004796	2.02E-05	0.000193	0.000178	0.001111	3.713867
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	21.81333	0.00187	0.005348	2.25E-05	0.000216	0.000198	0.001236	4.142048
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	21.81333	0.001187	0.002772	7.06E-06	0.000262	0.000241	0.000434	1.20794
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	21.81333	0.000694	0.002535	5.23E-06	0.000167	0.000154	0.00035	0.870808
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	21.81333	0.00187	0.005348	2.25E-05	0.000216	0.000198	0.001236	4.142048
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	21.81333	0.00163	0.00177	1.59E-06	0.000238	0.000219	0.000368	0.238246
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	21.81333	0.002005	0.001552	2.04E-06	0.000277	0.000255	0.000391	0.317963
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	409.4263	0.035105	0.100387	0.000423	0.004048	0.003724	0.022664	77.74434
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	409.4263	0.013031	0.047576	9.81E-05	0.003137	0.002886	0.005998	16.34467
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	409.4263	0.035105	0.100387	0.000423	0.004048	0.003724	0.022664	77.74434
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	18	0.000573	0.002092	4.31E-06	0.000138	0.000127	0.000294	0.718576
1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	36	0.003087	0.008827	3.72E-05	0.000356	0.000327	0.00202	6.835898
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	18	0.000418	0.000431	3.72E-07	3.92E-05	3.61E-05	6.20E-05	0.050099

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1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	18	0.001654	0.001281	1.68E-06	0.000228	0.00021	0.000337	0.262378											
1	2020	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	41.85853	0.001766	0.004075	1.32E-05	0.000363	0.000334	0.000753	2.318109											
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	294.56	0.025256	0.072223	0.000304	0.002912	0.002679	0.016314	55.93283											
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	41.85853	0.003589	0.010263	4.33E-05	0.000414	0.000381	0.002344	7.94835											
1	2020	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	40.78523	0.003458	0.003466	8.38E-06	0.000415	0.000382	0.000487	1.433262											
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	48.244	0.002036	0.004697	1.52E-05	0.000419	0.000385	0.000865	2.671734											
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	48.244	0.004136	0.011829	4.99E-05	0.000477	0.000439	0.002697	9.160863											
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	48.244	0.004136	0.011829	4.99E-05	0.000477	0.000439	0.002697	9.160863											
On-Road Sources																										
Units for Non-Greenhouse Gases Emission: Short Ton																										
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																										
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	5	--	129	1518	118	--	--	--	--	--	41422	0.04943	0.091149	0.0004	0.003384	0.003283	0.000726	51.90258	0.00811	0.002883

1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	3	--	129	1518	118	--	--	--	--	--	22092	0.027241	0.048699	0.000213	0.001806	0.001752	0.000425	27.69227	0.004325	0.001538
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	68.31	68.31	129	--	--	--	--	--	--	--	264360	0.862676	0.053637	0.000675	0.001983	0.001826	0.052095	96.07344	0.014815	0.001036

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.15325	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.02395	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.07865	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.0507	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	3.61E-08	0

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FINAL

INPUT DATA AND SPECIFICATIONS

State/County

California Santa Clara County

Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project Final Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	
1	Taxiways	Concrete Placement	Air Compressor	Diesel	
1	Taxiways	Concrete Placement	Concrete Saws	Diesel	
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	

1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel
1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel

1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel
1 Taxiways	Subbase Placement	Roller	Diesel
1 Taxiways	Topsoil Placement	Dozer	Diesel
1 Taxiways	Topsoil Placement	Dump Truck	Diesel
1 Taxiways	Topsoil Placement	Pickup Truck	Diesel

FINAL

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	6.21	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	1518	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	118	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	4.5	Acres	
1	Taxiways	Concrete Placement	8284.5	Cubic Yards	
1	Taxiways	Drainage - 24 inch SICPP	1528	Linear Feet	
1	Taxiways	Drainage - 6 inch Perforated Underdrain	3056	Linear Feet	
1	Taxiways	Dust Control	180	Days	
1	Taxiways	Excavation (Borrow)	8284.5	Cubic Yards	

1 Taxiways	Excavation (Cut to Fill)	8284.5	Cubic Yards
1 Taxiways	Excavation (Topsoil Stripping)	19882.8	Square Yards
1 Taxiways	Fencing	1518	Linear Feet
1 Taxiways	Grading	21709.8	Square Yards
1 Taxiways	Hydroseeding	195584	Square Feet
1 Taxiways	Lighting	3272	Linear Feet
1 Taxiways	Markings	179124	Square Feet
1 Taxiways	Soil Erosion/Sediment Control	4.5	Acres
1 Taxiways	Subbase Placement	19882.8	Square Yards
1 Taxiways	Subbase Placement	6627.6	Cubic Yards
1 Taxiways	Topsoil Placement	3618.3	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data	
	1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	4.50 Acre	12 Hours per 1.00 Acre	54	hours		*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
	1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	4.50 Acre	12 Hours per 1.00 Acre	54	hours		
	1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	4.50 Acre	16 Hours per 1.00 Acre	72	hours		

1	Taxiways	Concrete Placement	Air Compressor	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Concrete Placement	Concrete Saws	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	8284.50 CY	8 Hours per 240.00 CY	276.15 hours
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	8284.50 CY	16 Hours per 1000.00 CY	132.55 hours
1	Taxiways	Concrete Placement	Pickup Truck	Diesel	8284.50 CY	24 Hours per 1000.00 CY	198.83 hours
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	1528.00 LF	8 Hours per 250.00 LF	48.9 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	3056.00 LF	8 Hours per 900.00 LF	27.16 hours

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	3056.00 LF	8 Hours per 900.00 LF	27.16 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	3056.00 LF	8 Hours per 900.00 LF	27.16 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	3056.00 LF	8 Hours per 900.00 LF	27.16 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	3056.00 LF	8 Hours per 900.00 LF	27.16 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	8284.50 CY	8 Hours per 600.00 CY	110.46 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	8284.50 CY	8 Hours per 600.00 CY	110.46 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	8284.50 CY	8 Hours per 600.00 CY	110.46 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	8284.50 CY	8 Hours per 1300.00 CY	50.98 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	8284.50 CY	8 Hours per 800.00 CY	82.85 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	8284.50 CY	8 Hours per 300.00 CY	220.92 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	8284.50 CY	8 Hours per 1000.00 CY	66.28 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	8284.50 CY	8 Hours per 800.00 CY	82.85 hours

1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	19882.80 SY	8 Hours per 5100.00 SY	31.19 hours
1 Taxiways	Fencing	Concrete Truck	Diesel	1518.00 LF	2 Hours per 180.00 LF	16.87 hours
1 Taxiways	Fencing	Dump Truck	Diesel	1518.00 LF	8 Hours per 180.00 LF	67.47 hours
1 Taxiways	Fencing	Other General Equipment	Diesel	1518.00 LF	8 Hours per 180.00 LF	67.47 hours
1 Taxiways	Fencing	Pickup Truck	Diesel	1518.00 LF	8 Hours per 180.00 LF	67.47 hours
1 Taxiways	Fencing	Skid Steer Loader	Diesel	1518.00 LF	8 Hours per 180.00 LF	67.47 hours
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	1518.00 LF	8 Hours per 180.00 LF	67.47 hours
1 Taxiways	Grading	Dozer	Diesel	21709.80 SY	8 Hours per 8000.00 SY	21.71 hours
1 Taxiways	Grading	Grader	Diesel	21709.80 SY	8 Hours per 8000.00 SY	21.71 hours
1 Taxiways	Grading	Roller	Diesel	21709.80 SY	8 Hours per 8000.00 SY	21.71 hours
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	195584.00 SF	8 Hours per 80000.00 SF	19.56 hours
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	195584.00 SF	8 Hours per 80000.00 SF	19.56 hours
1 Taxiways	Lighting	Dump Truck	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours
1 Taxiways	Lighting	Loader	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours
1 Taxiways	Lighting	Other General Equipment	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours
1 Taxiways	Lighting	Pickup Truck	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours
1 Taxiways	Lighting	Skid Steer Loader	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours

1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	3272.00 LF	8 Hours per 1200.00 LF	21.81 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	179124.00 SF	8 Hours per 3500.00 SF	409.43 hours
1	Taxiways	Markings	Other General Equipment	Diesel	179124.00 SF	8 Hours per 3500.00 SF	409.43 hours
1	Taxiways	Markings	Pickup Truck	Diesel	179124.00 SF	8 Hours per 3500.00 SF	409.43 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	4.50 Acre	8 Hours per 1.00 Acre	36 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	19882.80 SY	8 Hours per 3800.00 SY	41.86 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	6627.60 CY	8 Hours per 180.00 CY	294.56 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	19882.80 SY	8 Hours per 3800.00 SY	41.86 hours
1	Taxiways	Subbase Placement	Roller	Diesel	6627.60 CY	8 Hours per 1300.00 CY	40.79 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	3618.30 CY	8 Hours per 600.00 CY	48.24 hours
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	3618.30 CY	8 Hours per 600.00 CY	48.24 hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	3618.30 CY	8 Hours per 600.00 CY	48.24 hours

FINAL

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1518	118	--	--	--	--	--	--	41422	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1518	118	--	--	--	--	--	--	22092	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	68.31	129	--	--	--	--	--	--	--	--	264360	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896	

1	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012

1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1 Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1 Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234							
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234							

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	8284.5	yd3	
1	Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	306.5	lbs	
1	Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction	
1	Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons	

1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	5742.2	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	157.3	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	5160	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	47.9	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	4.112	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years
1 Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
1 Taxiways	Soil Handling	u = Wind speed	5	mph
1 Taxiways	Soil Handling	m = Moisture content	0.25	fraction

1 Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	4925.9 tons
1 Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	101.4 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

- Asphalt drying
- Asphalt storage and batching
- Concrete mixing/batching
- Soil handling
- Unstabilized land and wind erosion
- Material movement (unpaved roads)
- Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO_2, CH_4, and N_2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:

- Asphalt Deliveries/Ten Wheelers
- Bulldozer
- Concrete Ready Mix Trucks
- Concrete Ready Trucks Mix for Cores
- Concrete Truck
- Crack Filler (Trailer Mounted)
- Delivery of Tanks (3)
- Distributing Tanker
- Dozer
- Dump Truck
- Dump Truck (12 cy)
- Excavator
- Excavator for U/G Services/Tanks
- Flat Bed or Dump Trucks
- Flatbed Truck
- Grader
- Grout Wheel Truck
- Hoist Equipment with 40 Ton Rig
- Hydralic Hammer
- Hydroseeder
- Line Painting Truck and Sprayer
- Material Deliveries
- Off-Road Truck
- Pickup Truck
- Scraper
- Seed Truck Spreader
- Small Dozer
- Survey Crew Trucks
- Ten Wheelers
- Ten Wheelers- Material Delivery
- Tool Truck
- Tractor Trailer- Equipment Delivery
- Tractor Trailer- Material Delivery
- Tractor Trailer- Steel Deliveries
- Tractor Trailer- Stone Delivery
- Tractor Trailer- Topsoil & Seed
- Tractor Trailer- Truck Delivery
- Tractor Trailer with Boom Hoist- Curbs Del & Place
- Tractor Trailer with Boom Hoist- Delivery
- Tractor Trailers- Rebar Deliveries
- Tractor Trailers Temp Fac.
- Truck for Topsoil & Seed Del&Spread
- Water Truck
- Excavator with Bucket
- Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 3:40:07 PM

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STUDY

Study Name

A-26-2

Study Description

Convert former Runway 11-29 to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.

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EMISSIONS INVENTORY - SUMMARY

Total Emissions by Year

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO_2, CH_4, and N_2O) Emission: Metric Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.262624	0.979196	0.004328	0.219316	0.043716	0.251998	740.0255	0.020933	0.003354

Total Emissions by Source Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.386356	0.852745	0.003349	0.042686	0.039271	0.200968	604.811	--	--
2020	OnRoad	0.876268	0.126452	0.000979	0.00468	0.004446	0.05103	135.2144	0.020933	0.003354
2020	Fugitive	0	0	0	0.17195	--	0	--	--	--
2020	TOTAL	1.262624	0.979196	0.004328	0.219316	0.043716	0.251998	740.0255	0.020933	0.003354

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	28.8	0.071755	0.000323	3.43E-05	0.002383	0.002192	0.018951	0.152127	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	28.8	0.002317	0.004114	4.73E-06	0.000401	0.000369	0.000507	0.729801	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	38.4	0.003292	0.009415	3.97E-05	0.00038	0.000349	0.002153	7.291624	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	35.2776	0.001847	0.003	5.43E-06	0.000264	0.000243	0.000378	0.89459	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	35.2776	0.00048	0.003041	2.82E-06	6.56E-05	6.04E-05	0.000154	0.495908	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	146.99	0.012603	0.03604	0.000152	0.001453	0.001337	0.008156	27.91135	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	70.5552	0.002246	0.008199	1.69E-05	0.000541	0.000497	0.00106	2.816628	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	105.8328	0.009074	0.025949	0.000109	0.001046	0.000963	0.005881	20.09617	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	35.2776	0.00192	0.004483	1.14E-05	0.000423	0.000389	0.000687	1.95354	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	35.2776	0.001754	0.004031	1.13E-05	0.000379	0.000348	0.000666	1.953591	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	35.2776	0.001365	0.002558	2.30E-06	0.000203	0.000186	0.000271	0.309463	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	26.176	0.001105	0.002548	8.22E-06	0.000227	0.000209	0.000478	1.449617	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	26.176	0.002244	0.006418	2.71E-05	0.000259	0.000238	0.001477	4.970457	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	26.176	0.000871	0.002089	8.05E-06	0.000161	0.000148	0.000455	1.449666	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	26.176	0.001424	0.003326	8.47E-06	0.000314	0.000289	0.000516	1.449528	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	26.176	0.000833	0.003042	6.27E-06	0.000201	0.000185	0.000413	1.04497	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	26.176	0.002244	0.006418	2.71E-05	0.000259	0.000238	0.001477	4.970457
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	26.176	0.002219	0.002224	5.38E-06	0.000267	0.000245	0.000319	0.919869
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	14.54222	0.001247	0.003566	1.50E-05	0.000144	0.000132	0.000834	2.761365
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	14.54222	0.000791	0.001848	4.71E-06	0.000174	0.000161	0.000298	0.805293
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	14.54222	0.000463	0.00169	3.48E-06	0.000111	0.000103	0.000244	0.580539
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	14.54222	0.001247	0.003566	1.50E-05	0.000144	0.000132	0.000834	2.761365
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	14.54222	0.001337	0.001035	1.36E-06	0.000184	0.00017	0.000287	0.211975
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	58.796	0.002481	0.005724	1.85E-05	0.00051	0.00047	0.00105	3.256099
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	58.796	0.005041	0.014416	6.08E-05	0.000581	0.000535	0.00328	11.16454
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	58.796	0.005041	0.014416	6.08E-05	0.000581	0.000535	0.00328	11.16454
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	27.13662	0.002301	0.002306	5.57E-06	0.000276	0.000254	0.00033	0.953627
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	44.097	0.001861	0.004293	1.39E-05	0.000383	0.000352	0.000792	2.442074
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	117.592	0.010082	0.028832	0.000122	0.001163	0.00107	0.006531	22.32908
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	35.2776	0.001173	0.002815	1.08E-05	0.000217	0.0002	0.000608	1.953726
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	35.2776	0.003025	0.00865	3.65E-05	0.000349	0.000321	0.00198	6.698724

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	35.2776	0.002991	0.002998	7.25E-06	0.000359	0.00033	0.000424	1.239715
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	44.097	0.009379	0.023303	4.96E-05	0.001385	0.001274	0.002742	8.372807
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	16.6011	0.000701	0.001616	5.22E-06	0.000144	0.000133	0.00031	0.919362
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	8.977778	0.00077	0.002201	9.28E-06	8.88E-05	8.17E-05	0.000526	1.704755
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	35.91111	0.003079	0.008805	3.71E-05	0.000355	0.000327	0.002015	6.819019
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	35.91111	0.001143	0.004173	8.60E-06	0.000275	0.000253	0.000555	1.433604
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	35.91111	0.003079	0.008805	3.71E-05	0.000355	0.000327	0.002015	6.819019
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	35.91111	0.002683	0.002914	2.62E-06	0.000392	0.000361	0.000573	0.392222
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	35.91111	0.0033	0.002555	3.36E-06	0.000456	0.000419	0.000594	0.52346
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	11.6221	0.00049	0.001131	3.65E-06	0.000101	9.28E-05	0.000223	0.643627
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	11.6221	0.000551	0.00171	6.11E-06	8.53E-05	7.84E-05	0.000356	1.103399
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	11.6221	0.000985	0.000988	2.39E-06	0.000118	0.000109	0.000152	0.40842
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	10.4704	0.000898	0.002567	1.08E-05	0.000104	9.52E-05	0.000609	1.988183
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	10.4704	0.000898	0.002567	1.08E-05	0.000104	9.52E-05	0.000609	1.988183
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	12.34667	0.001059	0.003027	1.28E-05	0.000122	0.000112	0.000712	2.34446
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	12.34667	0.000672	0.001569	4.00E-06	0.000148	0.000136	0.000257	0.683712
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	12.34667	0.000393	0.001435	2.96E-06	9.46E-05	8.70E-05	0.000212	0.49289
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	12.34667	0.001059	0.003027	1.28E-05	0.000122	0.000112	0.000712	2.34446
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	12.34667	0.000923	0.001002	8.99E-07	0.000135	0.000124	0.00023	0.134851
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	12.34667	0.001135	0.000878	1.15E-06	0.000157	0.000144	0.000256	0.179972
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	217.9291	0.018685	0.053434	0.000225	0.002155	0.001982	0.012078	41.3817
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	217.9291	0.006936	0.025324	5.22E-05	0.00167	0.001536	0.003207	8.69993
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	217.9291	0.018685	0.053434	0.000225	0.002155	0.001982	0.012078	41.3817
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	9.6	0.000306	0.001116	2.30E-06	7.36E-05	6.77E-05	0.000172	0.383241

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	19.2	0.001646	0.004708	1.98E-05	0.00019	0.000175	0.001091	3.645812												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	9.6	0.000223	0.00023	1.99E-07	2.09E-05	1.92E-05	3.40E-05	0.026719												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	9.6	0.000882	0.000683	8.98E-07	0.000122	0.000112	0.000216	0.139935												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	22.28042	0.00094	0.002169	7.00E-06	0.000193	0.000178	0.00041	1.233881												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	156.7867	0.013443	0.038442	0.000162	0.00155	0.001426	0.008698	29.7716												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	22.28042	0.00191	0.005463	2.30E-05	0.00022	0.000203	0.001262	4.230741												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	21.70892	0.001841	0.001845	4.46E-06	0.000221	0.000203	0.000268	0.762889												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	25.82667	0.00109	0.002514	8.11E-06	0.000224	0.000206	0.000472	1.430271												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	25.82667	0.002214	0.006332	2.67E-05	0.000255	0.000235	0.001458	4.904124												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	25.82667	0.002214	0.006332	2.67E-05	0.000255	0.000235	0.001458	4.904124												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	3	--		129	808	118	--	--	--	--	--	22048	0.027203	0.048603	0.000213	0.001802	0.001748	0.000425	27.63731	0.004317	0.001535
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	2	--		129	808	118	--	--	--	--	--	11759	0.015562	0.026025	0.000114	0.000962	0.000933	0.000272	14.75265	0.002302	0.000818
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--		66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.0816	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.01495	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.0484	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.027	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	1.92E-08	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	3.31	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	808	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	118	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	2.4	Acres	
1	Taxiways	Concrete Placement	4409.7	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	818	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	1636	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	4409.7	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	4409.7	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	10583.2	Square Yards
1	Taxiways	Fencing	808	Linear Feet
1	Taxiways	Grading	11622.1	Square Yards
1	Taxiways	Hydroseeding	104704	Square Feet
1	Taxiways	Lighting	1852	Linear Feet
1	Taxiways	Markings	95344	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	2.4	Acres
1	Taxiways	Subbase Placement	10583.2	Square Yards
1	Taxiways	Subbase Placement	3527.7	Cubic Yards
1	Taxiways	Topsoil Placement	1937	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	2.40 Acre	12 Hours per 1.00 Acre	28.8	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	2.40 Acre	12 Hours per 1.00 Acre	28.8	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	2.40 Acre	16 Hours per 1.00 Acre	38.4	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	4409.70 CY	8 Hours per 240.00 CY	146.99	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	4409.70 CY	16 Hours per 1000.00 CY	70.56	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	4409.70 CY	24 Hours per 1000.00 CY	105.83	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18 hours
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	818.00 LF	8 Hours per 250.00 LF	26.18 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	1636.00 LF	8 Hours per 900.00 LF	14.54 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	1636.00 LF	8 Hours per 900.00 LF	14.54 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	1636.00 LF	8 Hours per 900.00 LF	14.54 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	1636.00 LF	8 Hours per 900.00 LF	14.54 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	1636.00 LF	8 Hours per 900.00 LF	14.54 hours
1 Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	4409.70 CY	8 Hours per 600.00 CY	58.8 hours
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	4409.70 CY	8 Hours per 600.00 CY	58.8 hours
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	4409.70 CY	8 Hours per 600.00 CY	58.8 hours
1 Taxiways	Excavation (Borrow)	Roller	Diesel	4409.70 CY	8 Hours per 1300.00 CY	27.14 hours
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	4409.70 CY	8 Hours per 800.00 CY	44.1 hours
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	4409.70 CY	8 Hours per 300.00 CY	117.59 hours
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28 hours

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	4409.70 CY	8 Hours per 1000.00 CY	35.28 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	4409.70 CY	8 Hours per 800.00 CY	44.1 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	10583.20 SY	8 Hours per 5100.00 SY	16.6 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	808.00 LF	2 Hours per 180.00 LF	8.98 hours
1	Taxiways	Fencing	Dump Truck	Diesel	808.00 LF	8 Hours per 180.00 LF	35.91 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	808.00 LF	8 Hours per 180.00 LF	35.91 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	808.00 LF	8 Hours per 180.00 LF	35.91 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	808.00 LF	8 Hours per 180.00 LF	35.91 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	808.00 LF	8 Hours per 180.00 LF	35.91 hours
1	Taxiways	Grading	Dozer	Diesel	11622.10 SY	8 Hours per 8000.00 SY	11.62 hours
1	Taxiways	Grading	Grader	Diesel	11622.10 SY	8 Hours per 8000.00 SY	11.62 hours
1	Taxiways	Grading	Roller	Diesel	11622.10 SY	8 Hours per 8000.00 SY	11.62 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	104704.00 SF	8 Hours per 80000.00 SF	10.47 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	104704.00 SF	8 Hours per 80000.00 SF	10.47 hours
1	Taxiways	Lighting	Dump Truck	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours
1	Taxiways	Lighting	Loader	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	1852.00 LF	8 Hours per 1200.00 LF	12.35 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	95344.00 SF	8 Hours per 3500.00 SF	217.93 hours
1	Taxiways	Markings	Other General Equipment	Diesel	95344.00 SF	8 Hours per 3500.00 SF	217.93 hours
1	Taxiways	Markings	Pickup Truck	Diesel	95344.00 SF	8 Hours per 3500.00 SF	217.93 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	2.40 Acre	4 Hours per 1.00 Acre	9.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	2.40 Acre	8 Hours per 1.00 Acre	19.2 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	2.40 Acre	4 Hours per 1.00 Acre	9.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	2.40 Acre	4 Hours per 1.00 Acre	9.6 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	10583.20 SY	8 Hours per 3800.00 SY	22.28 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	3527.70 CY	8 Hours per 180.00 CY	156.79 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	10583.20 SY	8 Hours per 3800.00 SY	22.28 hours
1	Taxiways	Subbase Placement	Roller	Diesel	3527.70 CY	8 Hours per 1300.00 CY	21.71 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	1937.00 CY	8 Hours per 600.00 CY	25.83 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	1937.00 CY	8 Hours per 600.00 CY	25.83	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	1937.00 CY	8 Hours per 600.00 CY	25.83	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--		129	808	118	--	--	--	--	--	--	22048
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--		129	808	118	--	--	--	--	--	--	11759
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30		66	129	--	--	--	--	--	--	--	--	255420

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	4409.7	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x Vs =	163.2	lbs
1 Taxiways	Material Movement (Unpaved Roads)	Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	3536	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	96.8	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	3225	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	29.9	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	2.189	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	2622 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	54 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 4:08:44 PM

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STUDY

Study Name

A-27

Study Description

Construct new cross Taxiway V7 from north end of new Taxiway V to Taxiway W (for ADG-III aircraft).

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EMISSION
S
INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.012523	0.504427	0.002517	0.064213	0.019877	0.155917	430.7475	0.015426	0.001396

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.168779	0.439764	0.00181	0.019195	0.01766	0.105335	330.7629	--	--
2020	OnRoad	0.843745	0.064663	0.000708	0.002383	0.002217	0.050582	99.98452	0.015426	0.001396
2020	Fugitive	0	0	0	0.042635	--	0	--	--	--
2020	TOTAL	1.012523	0.504427	0.002517	0.064213	0.019877	0.155917	430.7475	0.015426	0.001396

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	4.8	0.011959	5.39E-05	5.71E-06	0.000397	0.000365	0.006344	0.025354	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	4.8	0.000386	0.000686	7.89E-07	6.69E-05	6.16E-05	0.000109	0.121633	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	6.4	0.000549	0.001569	6.61E-06	6.33E-05	5.82E-05	0.000384	1.215271	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	5.9288	0.00031	0.000504	9.12E-07	4.44E-05	4.09E-05	8.67E-05	0.150346	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	5.9288	8.06E-05	0.000511	4.74E-07	1.10E-05	1.01E-05	2.62E-05	0.083343	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	24.70333	0.002118	0.006057	2.55E-05	0.000244	0.000225	0.001395	4.690818	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	11.8576	0.000377	0.001378	2.84E-06	9.09E-05	8.36E-05	0.000205	0.473366	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	17.7864	0.001525	0.004361	1.84E-05	0.000176	0.000162	0.001013	3.377389	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	5.9288	0.000323	0.000753	1.92E-06	7.11E-05	6.54E-05	0.000136	0.328315	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	5.9288	0.000295	0.000677	1.90E-06	6.36E-05	5.85E-05	0.000131	0.328323	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	5.9288	0.000229	0.00043	3.86E-07	3.40E-05	3.13E-05	4.60E-05	0.052009	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	5.024	0.000212	0.000489	1.58E-06	4.36E-05	4.01E-05	0.000108	0.278227	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	5.024	0.000431	0.001232	5.19E-06	4.97E-05	4.57E-05	0.000307	0.953988	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	5.024	0.000167	0.000401	1.54E-06	3.09E-05	2.85E-05	9.92E-05	0.278237	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	5.024	0.000273	0.000638	1.63E-06	6.03E-05	5.55E-05	0.00012	0.27821	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	5.024	0.00016	0.000584	1.20E-06	3.85E-05	3.54E-05	0.000105	0.200563	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	5.024	0.000431	0.001232	5.19E-06	4.97E-05	4.57E-05	0.000307	0.953988
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	5.024	0.000426	0.000427	1.03E-06	5.12E-05	4.71E-05	7.65E-05	0.176552
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	2.791111	0.000239	0.000684	2.88E-06	2.76E-05	2.54E-05	0.000184	0.529993
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	2.791111	0.000152	0.000355	9.03E-07	3.35E-05	3.08E-05	7.77E-05	0.154561
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	2.791111	8.88E-05	0.000324	6.69E-07	2.14E-05	1.97E-05	7.25E-05	0.111424
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	2.791111	0.000239	0.000684	2.88E-06	2.76E-05	2.54E-05	0.000184	0.529993
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	2.791111	0.000257	0.000199	2.61E-07	3.54E-05	3.26E-05	0.000119	0.040685
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	9.881333	0.000417	0.000962	3.10E-06	8.58E-05	7.89E-05	0.000193	0.547224
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	9.881333	0.000847	0.002423	1.02E-05	9.77E-05	8.99E-05	0.000576	1.876327
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	9.881333	0.000847	0.002423	1.02E-05	9.77E-05	8.99E-05	0.000576	1.876327
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	4.560615	0.000387	0.000388	9.37E-07	4.64E-05	4.27E-05	7.12E-05	0.160268
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	7.411	0.000313	0.000721	2.33E-06	6.43E-05	5.92E-05	0.000149	0.410418
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	19.76267	0.001694	0.004846	2.04E-05	0.000195	0.00018	0.001122	3.752655
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	5.9288	0.000197	0.000473	1.82E-06	3.65E-05	3.36E-05	0.000114	0.328346
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	5.9288	0.000508	0.001454	6.13E-06	5.86E-05	5.39E-05	0.000358	1.125796

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	5.9288	0.000503	0.000504	1.22E-06	6.04E-05	5.55E-05	8.69E-05	0.208348
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	7.411	0.001576	0.003916	8.34E-06	0.000233	0.000214	0.000533	1.407145
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	2.789961	0.000118	0.000272	8.77E-07	2.42E-05	2.23E-05	6.86E-05	0.154507
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	1.633333	0.00014	0.0004	1.69E-06	1.61E-05	1.49E-05	0.00012	0.310147
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	6.533333	0.00056	0.001602	6.75E-06	6.46E-05	5.94E-05	0.000391	1.240589
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	6.533333	0.000208	0.000759	1.57E-06	5.01E-05	4.61E-05	0.000127	0.260817
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	6.533333	0.00056	0.001602	6.75E-06	6.46E-05	5.94E-05	0.000391	1.240589
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	6.533333	0.000488	0.00053	4.76E-07	7.13E-05	6.56E-05	0.000146	0.071357
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	6.533333	0.0006	0.000465	6.11E-07	8.29E-05	7.62E-05	0.000172	0.095233
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	2.0738	8.75E-05	0.000202	6.52E-07	1.80E-05	1.66E-05	5.60E-05	0.114846
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	2.0738	9.84E-05	0.000305	1.09E-06	1.52E-05	1.40E-05	8.08E-05	0.196886
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	2.0738	0.000176	0.000176	4.26E-07	2.11E-05	1.94E-05	4.26E-05	0.072877
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	1.8683	0.00016	0.000458	1.93E-06	1.85E-05	1.70E-05	0.000133	0.354764
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	1.8683	0.00016	0.000458	1.93E-06	1.85E-05	1.70E-05	0.000133	0.354764
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	3.413333	0.000293	0.000837	3.53E-06	3.37E-05	3.10E-05	0.000218	0.648144
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	3.413333	0.000186	0.000434	1.10E-06	4.10E-05	3.77E-05	8.93E-05	0.189018
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	3.413333	0.000109	0.000397	8.18E-07	2.62E-05	2.41E-05	8.16E-05	0.136263
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	3.413333	0.000293	0.000837	3.53E-06	3.37E-05	3.10E-05	0.000218	0.648144
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	3.413333	0.000255	0.000277	2.49E-07	3.73E-05	3.43E-05	0.000101	0.037281
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.413333	0.000314	0.000243	3.19E-07	4.33E-05	3.98E-05	0.000128	0.049755
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	36.624	0.00314	0.00898	3.78E-05	0.000362	0.000333	0.002054	6.954387
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	36.624	0.001166	0.004256	8.77E-06	0.000281	0.000258	0.000566	1.462063
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	36.624	0.00314	0.00898	3.78E-05	0.000362	0.000333	0.002054	6.954387
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	1.6	5.09E-05	0.000186	3.83E-07	1.23E-05	1.13E-05	5.52E-05	0.063873

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	3.2	0.000274	0.000785	3.31E-06	3.16E-05	2.91E-05	0.000207	0.607635												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	1.6	3.72E-05	3.83E-05	3.31E-08	3.48E-06	3.20E-06	7.27E-06	0.004453												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	1.6	0.000147	0.000114	1.50E-07	2.03E-05	1.87E-05	0.000102	0.023322												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	3.744421	0.000158	0.000365	1.18E-06	3.25E-05	2.99E-05	8.53E-05	0.207365												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	26.35111	0.002259	0.006461	2.72E-05	0.000261	0.00024	0.001487	5.003708												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	3.744421	0.000321	0.000918	3.87E-06	3.70E-05	3.41E-05	0.000237	0.711013												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	3.648615	0.000309	0.00031	7.50E-07	3.72E-05	3.42E-05	6.07E-05	0.128219												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	4.608	0.000194	0.000449	1.45E-06	4.00E-05	3.68E-05	0.0001	0.255189												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	4.608	0.000395	0.00113	4.76E-06	4.56E-05	4.19E-05	0.000285	0.874995												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	4.608	0.000395	0.00113	4.76E-06	4.56E-05	4.19E-05	0.000285	0.874995												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	147	109	--	--	--	--	--	3705	0.005878	0.008295	3.59E-05	0.000304	0.000295	0.000128	4.65995	0.000725	0.000258
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	147	109	--	--	--	--	--	1976	0.004364	0.004544	1.93E-05	0.000163	0.000159	0.000121	2.500091	0.000387	0.000138
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.0137	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.006	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.0184	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.004535	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	3.23E-09	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	0.56	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	147	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	109	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	0.4	Acres	
1	Taxiways	Concrete Placement	741.1	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	157	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	314	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	741.1	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	741.1	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	1778.6	Square Yards
1	Taxiways	Fencing	147	Linear Feet
1	Taxiways	Grading	2073.8	Square Yards
1	Taxiways	Hydroseeding	18683	Square Feet
1	Taxiways	Lighting	512	Linear Feet
1	Taxiways	Markings	16023	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	0.4	Acres
1	Taxiways	Subbase Placement	1778.6	Square Yards
1	Taxiways	Subbase Placement	592.9	Cubic Yards
1	Taxiways	Topsoil Placement	345.6	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	0.40 Acre	12 Hours per 1.00 Acre	4.8	hours
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	0.40 Acre	12 Hours per 1.00 Acre	4.8	hours
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	0.40 Acre	16 Hours per 1.00 Acre	6.4	hours
1	Taxiways	Concrete Placement	Air Compressor	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93	hours
1	Taxiways	Concrete Placement	Concrete Saws	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93	hours
1	Taxiways	Concrete Placement	Concrete Truck	Diesel	741.10 CY	8 Hours per 240.00 CY	24.7	hours
1	Taxiways	Concrete Placement	Other General Equipment	Diesel	741.10 CY	16 Hours per 1000.00 CY	11.86	hours
1	Taxiways	Concrete Placement	Pickup Truck	Diesel	741.10 CY	24 Hours per 1000.00 CY	17.79	hours
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93	hours
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93	hours
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93	hours
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02	hours
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02	hours
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02	hours
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02	hours
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	157.00 LF	8 Hours per 250.00 LF	5.02 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	314.00 LF	8 Hours per 900.00 LF	2.79 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	314.00 LF	8 Hours per 900.00 LF	2.79 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	314.00 LF	8 Hours per 900.00 LF	2.79 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	314.00 LF	8 Hours per 900.00 LF	2.79 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	314.00 LF	8 Hours per 900.00 LF	2.79 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	741.10 CY	8 Hours per 600.00 CY	9.88 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	741.10 CY	8 Hours per 600.00 CY	9.88 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	741.10 CY	8 Hours per 600.00 CY	9.88 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	741.10 CY	8 Hours per 1300.00 CY	4.56 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	741.10 CY	8 Hours per 800.00 CY	7.41 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	741.10 CY	8 Hours per 300.00 CY	19.76 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93 hours

1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93 hours
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel	741.10 CY	8 Hours per 1000.00 CY	5.93 hours
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	741.10 CY	8 Hours per 800.00 CY	7.41 hours
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	1778.60 SY	8 Hours per 5100.00 SY	2.79 hours
1 Taxiways	Fencing	Concrete Truck	Diesel	147.00 LF	2 Hours per 180.00 LF	1.63 hours
1 Taxiways	Fencing	Dump Truck	Diesel	147.00 LF	8 Hours per 180.00 LF	6.53 hours
1 Taxiways	Fencing	Other General Equipment	Diesel	147.00 LF	8 Hours per 180.00 LF	6.53 hours
1 Taxiways	Fencing	Pickup Truck	Diesel	147.00 LF	8 Hours per 180.00 LF	6.53 hours
1 Taxiways	Fencing	Skid Steer Loader	Diesel	147.00 LF	8 Hours per 180.00 LF	6.53 hours
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	147.00 LF	8 Hours per 180.00 LF	6.53 hours
1 Taxiways	Grading	Dozer	Diesel	2073.80 SY	8 Hours per 8000.00 SY	2.07 hours
1 Taxiways	Grading	Grader	Diesel	2073.80 SY	8 Hours per 8000.00 SY	2.07 hours
1 Taxiways	Grading	Roller	Diesel	2073.80 SY	8 Hours per 8000.00 SY	2.07 hours
1 Taxiways	Hydroseeding	Hydroseeder	Diesel	18683.00 SF	8 Hours per 80000.00 SF	1.87 hours
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel	18683.00 SF	8 Hours per 80000.00 SF	1.87 hours
1 Taxiways	Lighting	Dump Truck	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours
1 Taxiways	Lighting	Loader	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	512.00 LF	8 Hours per 1200.00 LF	3.41 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	16023.00 SF	8 Hours per 3500.00 SF	36.62 hours
1	Taxiways	Markings	Other General Equipment	Diesel	16023.00 SF	8 Hours per 3500.00 SF	36.62 hours
1	Taxiways	Markings	Pickup Truck	Diesel	16023.00 SF	8 Hours per 3500.00 SF	36.62 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	0.40 Acre	4 Hours per 1.00 Acre	1.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	0.40 Acre	8 Hours per 1.00 Acre	3.2 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	0.40 Acre	4 Hours per 1.00 Acre	1.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	0.40 Acre	4 Hours per 1.00 Acre	1.6 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	1778.60 SY	8 Hours per 3800.00 SY	3.74 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	592.90 CY	8 Hours per 180.00 CY	26.35 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	1778.60 SY	8 Hours per 3800.00 SY	3.74 hours
1	Taxiways	Subbase Placement	Roller	Diesel	592.90 CY	8 Hours per 1300.00 CY	3.65 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	345.60 CY	8 Hours per 600.00 CY	4.61 hours

FINAL

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	345.60 CY	8 Hours per 600.00 CY	4.61	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	345.60 CY	8 Hours per 600.00 CY	4.61	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	147	109	--	--	--	--	--	--	3705	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	147	109	--	--	--	--	--	--	1976	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

FINAL

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	741.1	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	27.4	lbs
1 Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	1345.3	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	36.8	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1290	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	12	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	0.368	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	440.6 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	9.07 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 4:49:44 PM

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STUDY

Study Name

A-37-1

Study Description

Close existing Taxiway V and replace with a parallel apron-edge taxilane (for ADG-III aircraft).

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EMISSION
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INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.621754	1.654805	0.006829	0.379322	0.079948	0.390673	1172.307	0.02663	0.005332

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.705769	1.465958	0.00557	0.079616	0.073247	0.338721	1000.663	--	--
2020	OnRoad	0.915985	0.188847	0.001259	0.007006	0.006701	0.051952	171.6443	0.02663	0.005332
2020	Fugitive	0	0	0	0.2927	--	0	--	--	--
2020	TOTAL	1.621754	1.654805	0.006829	0.379322	0.079948	0.390673	1172.307	0.02663	0.005332

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	57.6	0.143509	0.000647	6.85E-05	0.004766	0.004385	0.03408	0.304253	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	57.6	0.004635	0.008229	9.47E-06	0.000803	0.000739	0.000984	1.459601	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	76.8	0.006585	0.01883	7.94E-05	0.000759	0.000699	0.004276	14.58325	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	64.7504	0.003391	0.005507	9.96E-06	0.000485	0.000446	0.00067	1.641979	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	64.7504	0.00088	0.005581	5.18E-06	0.00012	0.000111	0.000283	0.910217	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	269.7933	0.023132	0.06615	0.000279	0.002667	0.002454	0.014945	51.22999	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	129.5008	0.004122	0.015048	3.10E-05	0.000992	0.000913	0.001919	5.16979	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	194.2512	0.016655	0.047628	0.000201	0.00192	0.001767	0.010769	36.88559	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	64.7504	0.003524	0.008228	2.10E-05	0.000777	0.000715	0.001239	3.585633	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	64.7504	0.00322	0.007398	2.07E-05	0.000695	0.000639	0.001203	3.585725	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	64.7504	0.002505	0.004695	4.22E-06	0.000372	0.000342	0.000497	0.568005	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	112.32	0.00474	0.010935	3.53E-05	0.000975	0.000897	0.001987	6.220237	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	112.32	0.00963	0.02754	0.000116	0.00111	0.001022	0.006239	21.328	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	112.32	0.003736	0.008964	3.45E-05	0.000692	0.000637	0.001905	6.220448	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	112.32	0.006112	0.014273	3.64E-05	0.001348	0.00124	0.002131	6.219858	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	112.32	0.003575	0.013052	2.69E-05	0.000861	0.000792	0.001668	4.483917	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	112.32	0.00963	0.02754	0.000116	0.00111	0.001022	0.006239	21.328
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	112.32	0.009523	0.009544	2.31E-05	0.001144	0.001052	0.001308	3.947116
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	62.4	0.00535	0.0153	6.45E-05	0.000617	0.000568	0.003479	11.84889
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	62.4	0.003396	0.00793	2.02E-05	0.000749	0.000689	0.001195	3.455477
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	62.4	0.001986	0.007251	1.49E-05	0.000478	0.00044	0.000941	2.491065
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	62.4	0.00535	0.0153	6.45E-05	0.000617	0.000568	0.003479	11.84889
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	62.4	0.005735	0.00444	5.83E-06	0.000792	0.000728	0.000974	0.909577
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	107.9173	0.004554	0.010506	3.39E-05	0.000937	0.000862	0.00191	5.976419
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	107.9173	0.009253	0.02646	0.000112	0.001067	0.000982	0.005996	20.492
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	107.9173	0.009253	0.02646	0.000112	0.001067	0.000982	0.005996	20.492
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	49.808	0.004223	0.004232	1.02E-05	0.000507	0.000467	0.000591	1.750338
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	80.938	0.003416	0.00788	2.54E-05	0.000703	0.000646	0.001437	4.482314
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	215.8347	0.018506	0.05292	0.000223	0.002134	0.001963	0.011962	40.98399
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	64.7504	0.002154	0.005168	1.99E-05	0.000399	0.000367	0.001105	3.585973
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	64.7504	0.005552	0.015876	6.69E-05	0.00064	0.000589	0.003609	12.2952

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	64.7504	0.00549	0.005502	1.33E-05	0.000659	0.000607	0.000762	2.275439
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	80.938	0.017215	0.042771	9.10E-05	0.002542	0.002339	0.004961	15.3679
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	30.47059	0.001286	0.002966	9.57E-06	0.000265	0.000243	0.000553	1.687449
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	38.88889	0.003334	0.009535	4.02E-05	0.000384	0.000354	0.00218	7.384457
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	155.5556	0.013338	0.03814	0.000161	0.001538	0.001415	0.008629	29.53783
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	155.5556	0.004951	0.018076	3.73E-05	0.001192	0.001097	0.002298	6.209919
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	155.5556	0.013338	0.03814	0.000161	0.001538	0.001415	0.008629	29.53783
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	155.5556	0.011624	0.012623	1.13E-05	0.001698	0.001562	0.002312	1.698981
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	155.5556	0.014297	0.011068	1.45E-05	0.001973	0.001815	0.00231	2.267464
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	23.3766	0.000986	0.002276	7.34E-06	0.000203	0.000187	0.000429	1.294587
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	23.3766	0.001109	0.00344	1.23E-05	0.000171	0.000158	0.000695	2.219368
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	23.3766	0.001982	0.001986	4.80E-06	0.000238	0.000219	0.000287	0.821494
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	21.06	0.001806	0.005164	2.18E-05	0.000208	0.000192	0.001194	3.999
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	21.06	0.001806	0.005164	2.18E-05	0.000208	0.000192	0.001194	3.999
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	47.33333	0.004058	0.011606	4.89E-05	0.000468	0.000431	0.002647	8.98794
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	47.33333	0.002576	0.006015	1.53E-05	0.000568	0.000522	0.000913	2.621142
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	47.33333	0.001506	0.0055	1.13E-05	0.000363	0.000334	0.000722	1.88959
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	47.33333	0.004058	0.011606	4.89E-05	0.000468	0.000431	0.002647	8.98794
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	47.33333	0.003537	0.003841	3.45E-06	0.000517	0.000475	0.000739	0.516976
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	47.33333	0.00435	0.003368	4.43E-06	0.0006	0.000552	0.000757	0.689957
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	400	0.034296	0.098076	0.000413	0.003955	0.003638	0.022143	75.95442
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	400	0.012731	0.04648	9.58E-05	0.003065	0.00282	0.00586	15.96836
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	400	0.034296	0.098076	0.000413	0.003955	0.003638	0.022143	75.95442
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	19.2	0.000611	0.002231	4.60E-06	0.000147	0.000135	0.000312	0.766481

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	38.4	0.003292	0.009415	3.97E-05	0.00038	0.000349	0.002153	7.291624													
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	19.2	0.000446	0.00046	3.97E-07	4.18E-05	3.85E-05	6.60E-05	0.053439													
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	19.2	0.001765	0.001366	1.80E-06	0.000244	0.000224	0.000354	0.27987													
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	40.89474	0.001726	0.003981	1.28E-05	0.000355	0.000327	0.000736	2.264734													
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	287.7778	0.024674	0.07056	0.000297	0.002845	0.002618	0.015939	54.64499													
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	40.89474	0.003506	0.010027	4.23E-05	0.000404	0.000372	0.002291	7.76534													
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	39.84615	0.003378	0.003386	8.19E-06	0.000406	0.000373	0.000476	1.400262													
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	51.948	0.002192	0.005057	1.63E-05	0.000451	0.000415	0.00093	2.87686													
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	51.948	0.004454	0.012737	5.37E-05	0.000514	0.000473	0.002902	9.8642													
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	51.948	0.004454	0.012737	5.37E-05	0.000514	0.000473	0.002902	9.8642													
On-Road Sources																													
Units for Non-Greenhouse Gases Emission: Short Ton																													
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																													
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	4	--	129	3500	50	--	--	--	--	--	40469	0.045962	0.088824	0.00039	0.003304	0.003205	0.000609	50.68042	0.007923	0.002817
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	3	--	129	3500	50	--	--	--	--	--	21583	0.026796	0.047595	0.000208	0.001764	0.001712	0.000423	27.05643	0.004226	0.001502
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66.77	66.77	129	--	--	--	--	--	--	--	258400	0.843227	0.052428	0.00066	0.001938	0.001784	0.05092	93.90747	0.014481	0.001013

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.14975	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.02095	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.07245	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.04955	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	3.53E-08	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	6.07	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	3500	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	50	Feet

Size Detail (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	4.8	Acres	
1	Taxiways	Concrete Placement	8093.8	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	3510	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	7020	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	8093.8	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	8093.8	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	19425	Square Yards
1	Taxiways	Fencing	3500	Linear Feet
1	Taxiways	Grading	23376.6	Square Yards
1	Taxiways	Hydroseeding	210600	Square Feet
1	Taxiways	Lighting	7100	Linear Feet
1	Taxiways	Markings	175000	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	4.8	Acres
1	Taxiways	Subbase Placement	19425	Square Yards
1	Taxiways	Subbase Placement	6475	Cubic Yards
1	Taxiways	Topsoil Placement	3896.1	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	4.80 Acre	12 Hours per 1.00 Acre	57.6	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	4.80 Acre	12 Hours per 1.00 Acre	57.6	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	4.80 Acre	16 Hours per 1.00 Acre	76.8	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	8093.80 CY	8 Hours per 240.00 CY	269.79	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	8093.80 CY	16 Hours per 1000.00 CY	129.5	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	8093.80 CY	24 Hours per 1000.00 CY	194.25	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	3510.00 LF	8 Hours per 250.00 LF	112.32 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	7020.00 LF	8 Hours per 900.00 LF	62.4 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	7020.00 LF	8 Hours per 900.00 LF	62.4 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	7020.00 LF	8 Hours per 900.00 LF	62.4 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	7020.00 LF	8 Hours per 900.00 LF	62.4 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	7020.00 LF	8 Hours per 900.00 LF	62.4 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	8093.80 CY	8 Hours per 600.00 CY	107.92 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	8093.80 CY	8 Hours per 600.00 CY	107.92 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	8093.80 CY	8 Hours per 600.00 CY	107.92 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	8093.80 CY	8 Hours per 1300.00 CY	49.81 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	8093.80 CY	8 Hours per 800.00 CY	80.94 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	8093.80 CY	8 Hours per 300.00 CY	215.83 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75 hours

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	8093.80 CY	8 Hours per 1000.00 CY	64.75 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	8093.80 CY	8 Hours per 800.00 CY	80.94 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	19425.00 SY	8 Hours per 5100.00 SY	30.47 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	3500.00 LF	2 Hours per 180.00 LF	38.89 hours
1	Taxiways	Fencing	Dump Truck	Diesel	3500.00 LF	8 Hours per 180.00 LF	155.56 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	3500.00 LF	8 Hours per 180.00 LF	155.56 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	3500.00 LF	8 Hours per 180.00 LF	155.56 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	3500.00 LF	8 Hours per 180.00 LF	155.56 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	3500.00 LF	8 Hours per 180.00 LF	155.56 hours
1	Taxiways	Grading	Dozer	Diesel	23376.60 SY	8 Hours per 8000.00 SY	23.38 hours
1	Taxiways	Grading	Grader	Diesel	23376.60 SY	8 Hours per 8000.00 SY	23.38 hours
1	Taxiways	Grading	Roller	Diesel	23376.60 SY	8 Hours per 8000.00 SY	23.38 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	210600.00 SF	8 Hours per 80000.00 SF	21.06 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	210600.00 SF	8 Hours per 80000.00 SF	21.06 hours
1	Taxiways	Lighting	Dump Truck	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours
1	Taxiways	Lighting	Loader	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	7100.00 LF	8 Hours per 1200.00 LF	47.33 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	175000.00 SF	8 Hours per 3500.00 SF	400 hours
1	Taxiways	Markings	Other General Equipment	Diesel	175000.00 SF	8 Hours per 3500.00 SF	400 hours
1	Taxiways	Markings	Pickup Truck	Diesel	175000.00 SF	8 Hours per 3500.00 SF	400 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	4.80 Acre	4 Hours per 1.00 Acre	19.2 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	4.80 Acre	8 Hours per 1.00 Acre	38.4 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	4.80 Acre	4 Hours per 1.00 Acre	19.2 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	4.80 Acre	4 Hours per 1.00 Acre	19.2 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	19425.00 SY	8 Hours per 3800.00 SY	40.89 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	6475.00 CY	8 Hours per 180.00 CY	287.78 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	19425.00 SY	8 Hours per 3800.00 SY	40.89 hours
1	Taxiways	Subbase Placement	Roller	Diesel	6475.00 CY	8 Hours per 1300.00 CY	39.85 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	3896.10 CY	8 Hours per 600.00 CY	51.95 hours

FINAL

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	3896.10 CY	8 Hours per 600.00 CY	51.95	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	3896.10 CY	8 Hours per 600.00 CY	51.95	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	3500	50	--	--	--	--	--	--	40469	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	3500	50	--	--	--	--	--	--	21583	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66.77	129	--	--	--	--	--	--	--	--	258400	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	8093.8	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	299.5	lbs
1 Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	5290.9	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	144.9	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	4515	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	41.9	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	4.017	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	4812.5 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	99.1 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 4:52:32 PM

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STUDY

Study Name

A-37-2

Study Description

Close existing Taxiway V and replace with a parallel apron-edge taxilane (for ADG-III aircraft).

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EMISSION
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INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	2.222921	2.082696	0.008703	0.530259	0.1002	0.495335	1481.687	0.038815	0.00777

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.888012	1.807525	0.006868	0.098298	0.090434	0.419613	1231.503	--	--
2020	OnRoad	1.334909	0.27517	0.001835	0.01021	0.009765	0.075722	250.1841	0.038815	0.00777
2020	Fugitive	0	0	0	0.42175	--	0	--	--	--
2020	TOTAL	2.222921	2.082696	0.008703	0.530259	0.1002	0.495335	1481.687	0.038815	0.00777

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	80.4	0.200315	0.000903	9.57E-05	0.006652	0.00612	0.046056	0.424687	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	80.4	0.006469	0.011486	1.32E-05	0.001121	0.001031	0.001362	2.03736	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	107.2	0.009191	0.026284	0.000111	0.00106	0.000975	0.005956	20.35578	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	94.3504	0.004941	0.008025	1.45E-05	0.000707	0.00065	0.000964	2.392593	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	94.3504	0.001283	0.008132	7.54E-06	0.000176	0.000162	0.000412	1.326314	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	393.1267	0.033707	0.09639	0.000406	0.003887	0.003576	0.021763	74.64927	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	188.7008	0.006006	0.021927	4.52E-05	0.001446	0.00133	0.002781	7.533108	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	283.0512	0.024269	0.069401	0.000293	0.002798	0.002575	0.015678	53.74747	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	94.3504	0.005135	0.01199	3.05E-05	0.001132	0.001041	0.001794	5.224769	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	94.3504	0.004691	0.01078	3.02E-05	0.001013	0.000932	0.001743	5.224904	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	94.3504	0.00365	0.006841	6.15E-06	0.000542	0.000498	0.000725	0.827662	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	109.12	0.004605	0.010623	3.43E-05	0.000947	0.000872	0.001931	6.043022	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	109.12	0.009356	0.026755	0.000113	0.001079	0.000993	0.006062	20.72037	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	109.12	0.00363	0.008709	3.35E-05	0.000672	0.000618	0.001852	6.043227	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	109.12	0.005938	0.013867	3.53E-05	0.001309	0.001205	0.002071	6.042654	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	109.12	0.003473	0.01268	2.61E-05	0.000836	0.000769	0.001622	4.35617	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	109.12	0.009356	0.026755	0.000113	0.001079	0.000993	0.006062	20.72037
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	109.12	0.009252	0.009272	2.24E-05	0.001111	0.001022	0.001271	3.834663
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	60.62222	0.005198	0.014864	6.26E-05	0.000599	0.000551	0.003381	11.51131
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	60.62222	0.003299	0.007704	1.96E-05	0.000727	0.000669	0.001162	3.35703
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	60.62222	0.001929	0.007044	1.45E-05	0.000464	0.000427	0.000915	2.420094
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	60.62222	0.005198	0.014864	6.26E-05	0.000599	0.000551	0.003381	11.51131
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	60.62222	0.005572	0.004313	5.67E-06	0.000769	0.000707	0.000948	0.883663
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	157.2507	0.006636	0.015309	4.94E-05	0.001365	0.001256	0.002774	8.70848
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	157.2507	0.013483	0.038556	0.000163	0.001555	0.00143	0.008723	29.85971
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	157.2507	0.013483	0.038556	0.000163	0.001555	0.00143	0.008723	29.85971
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	72.57723	0.006154	0.006167	1.49E-05	0.000739	0.00068	0.000852	2.550488
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	117.938	0.004977	0.011482	3.71E-05	0.001024	0.000942	0.002085	6.53136
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	314.5013	0.026966	0.077112	0.000325	0.003109	0.002861	0.017417	59.71942
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	94.3504	0.003138	0.00753	2.90E-05	0.000581	0.000535	0.001603	5.225265
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	94.3504	0.00809	0.023134	9.75E-05	0.000933	0.000858	0.005246	17.91582

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	94.3504	0.008	0.008017	1.94E-05	0.000961	0.000884	0.001102	3.315634
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	117.938	0.025084	0.062323	0.000133	0.003704	0.003408	0.007189	22.39318
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	44.4	0.001874	0.004323	1.39E-05	0.000385	0.000355	0.000797	2.458854
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	37.77778	0.003239	0.009263	3.90E-05	0.000373	0.000344	0.002118	7.173473
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	151.1111	0.012956	0.037051	0.000156	0.001494	0.001374	0.008384	28.69389
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	151.1111	0.004809	0.017559	3.62E-05	0.001158	0.001065	0.002234	6.032493
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	151.1111	0.012956	0.037051	0.000156	0.001494	0.001374	0.008384	28.69389
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	151.1111	0.011292	0.012262	1.10E-05	0.00165	0.001518	0.002248	1.650439
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	151.1111	0.013888	0.010752	1.41E-05	0.001917	0.001763	0.002246	2.202679
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	32.1734	0.001358	0.003132	1.01E-05	0.000279	0.000257	0.000583	1.78175
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	32.1734	0.001526	0.004735	1.69E-05	0.000236	0.000217	0.000949	3.054534
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	32.1734	0.002728	0.002734	6.61E-06	0.000328	0.000301	0.000388	1.130628
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	28.985	0.002485	0.007107	3.00E-05	0.000287	0.000264	0.001632	5.503847
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	28.985	0.002485	0.007107	3.00E-05	0.000287	0.000264	0.001632	5.503847
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	46.33333	0.003973	0.01136	4.79E-05	0.000458	0.000421	0.002591	8.798054
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	46.33333	0.002521	0.005888	1.50E-05	0.000556	0.000511	0.000894	2.565765
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	46.33333	0.001475	0.005384	1.11E-05	0.000355	0.000327	0.000707	1.849669
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	46.33333	0.003973	0.01136	4.79E-05	0.000458	0.000421	0.002591	8.798054
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	46.33333	0.003462	0.00376	3.37E-06	0.000506	0.000465	0.000725	0.506054
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	46.33333	0.004258	0.003297	4.33E-06	0.000588	0.000541	0.000743	0.67538
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	582.8571	0.049975	0.14291	0.000602	0.005763	0.005302	0.032252	110.6764
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	582.8571	0.018551	0.067728	0.00014	0.004466	0.004109	0.008525	23.26819
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	582.8571	0.049975	0.14291	0.000602	0.005763	0.005302	0.032252	110.6764
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	26.8	0.000853	0.003114	6.42E-06	0.000205	0.000189	0.000422	1.06988

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	53.6	0.004596	0.013142	5.54E-05	0.00053	0.000488	0.002993	10.17789												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	26.8	0.000623	0.000642	5.54E-07	5.83E-05	5.37E-05	9.14E-05	0.074592												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	26.8	0.002463	0.001907	2.51E-06	0.00034	0.000313	0.000463	0.390652												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	59.58947	0.002515	0.005801	1.87E-05	0.000517	0.000476	0.001063	3.300042												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	419.3333	0.035954	0.102816	0.000433	0.004146	0.003814	0.023212	79.62555												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	59.58947	0.005109	0.014611	6.16E-05	0.000589	0.000542	0.003324	11.31521												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	58.06154	0.004923	0.004934	1.19E-05	0.000591	0.000544	0.000685	2.040381												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	71.496	0.003017	0.00696	2.25E-05	0.000621	0.000571	0.001272	3.95942												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	71.496	0.00613	0.01753	7.39E-05	0.000707	0.00065	0.003982	13.57609												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	71.496	0.00613	0.01753	7.39E-05	0.000707	0.00065	0.003982	13.57609												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	6	--	129	3400	75	--	--	--	--	--	58969	0.067424	0.129473	0.000569	0.004815	0.004671	0.000906	73.8539	0.011545	0.004105
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	4	--	129	3400	75	--	--	--	--	--	31450	0.038067	0.069258	0.000304	0.00257	0.002493	0.000574	39.41392	0.006158	0.002189
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	97.35	97.35	129	--	--	--	--	--	--	--	376745	1.229417	0.07644	0.000962	0.002825	0.002602	0.074242	136.9163	0.021112	0.001476

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.2182	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.02995	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.1014	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.0722	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	5.15E-08	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	8.85	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	3400	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	75	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	6.7	Acres	
1	Taxiways	Concrete Placement	11793.8	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	3410	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	6820	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	11793.8	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	11793.8	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	28305	Square Yards
1	Taxiways	Fencing	3400	Linear Feet
1	Taxiways	Grading	32173.4	Square Yards
1	Taxiways	Hydroseeding	289850	Square Feet
1	Taxiways	Lighting	6950	Linear Feet
1	Taxiways	Markings	255000	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	6.7	Acres
1	Taxiways	Subbase Placement	28305	Square Yards
1	Taxiways	Subbase Placement	9435	Cubic Yards
1	Taxiways	Topsoil Placement	5362.2	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	6.70 Acre	12 Hours per 1.00 Acre	80.4	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	6.70 Acre	12 Hours per 1.00 Acre	80.4	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	6.70 Acre	16 Hours per 1.00 Acre	107.2	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	11793.80 CY	8 Hours per 240.00 CY	393.13	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	11793.80 CY	16 Hours per 1000.00 CY	188.7	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	11793.80 CY	24 Hours per 1000.00 CY	283.05	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	3410.00 LF	8 Hours per 250.00 LF	109.12 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	6820.00 LF	8 Hours per 900.00 LF	60.62 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	6820.00 LF	8 Hours per 900.00 LF	60.62 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	6820.00 LF	8 Hours per 900.00 LF	60.62 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	6820.00 LF	8 Hours per 900.00 LF	60.62 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	6820.00 LF	8 Hours per 900.00 LF	60.62 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	11793.80 CY	8 Hours per 600.00 CY	157.25 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	11793.80 CY	8 Hours per 600.00 CY	157.25 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	11793.80 CY	8 Hours per 600.00 CY	157.25 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	11793.80 CY	8 Hours per 1300.00 CY	72.58 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	11793.80 CY	8 Hours per 800.00 CY	117.94 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	11793.80 CY	8 Hours per 300.00 CY	314.5 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35 hours

FINAL

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	11793.80 CY	8 Hours per 1000.00 CY	94.35 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	11793.80 CY	8 Hours per 800.00 CY	117.94 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	28305.00 SY	8 Hours per 5100.00 SY	44.4 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	3400.00 LF	2 Hours per 180.00 LF	37.78 hours
1	Taxiways	Fencing	Dump Truck	Diesel	3400.00 LF	8 Hours per 180.00 LF	151.11 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	3400.00 LF	8 Hours per 180.00 LF	151.11 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	3400.00 LF	8 Hours per 180.00 LF	151.11 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	3400.00 LF	8 Hours per 180.00 LF	151.11 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	3400.00 LF	8 Hours per 180.00 LF	151.11 hours
1	Taxiways	Grading	Dozer	Diesel	32173.40 SY	8 Hours per 8000.00 SY	32.17 hours
1	Taxiways	Grading	Grader	Diesel	32173.40 SY	8 Hours per 8000.00 SY	32.17 hours
1	Taxiways	Grading	Roller	Diesel	32173.40 SY	8 Hours per 8000.00 SY	32.17 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	289850.00 SF	8 Hours per 80000.00 SF	28.99 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	289850.00 SF	8 Hours per 80000.00 SF	28.99 hours
1	Taxiways	Lighting	Dump Truck	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours
1	Taxiways	Lighting	Loader	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	6950.00 LF	8 Hours per 1200.00 LF	46.33 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	255000.00 SF	8 Hours per 3500.00 SF	582.86 hours
1	Taxiways	Markings	Other General Equipment	Diesel	255000.00 SF	8 Hours per 3500.00 SF	582.86 hours
1	Taxiways	Markings	Pickup Truck	Diesel	255000.00 SF	8 Hours per 3500.00 SF	582.86 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	6.70 Acre	4 Hours per 1.00 Acre	26.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	6.70 Acre	8 Hours per 1.00 Acre	53.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	6.70 Acre	4 Hours per 1.00 Acre	26.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	6.70 Acre	4 Hours per 1.00 Acre	26.8 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	28305.00 SY	8 Hours per 3800.00 SY	59.59 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	9435.00 CY	8 Hours per 180.00 CY	419.33 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	28305.00 SY	8 Hours per 3800.00 SY	59.59 hours
1	Taxiways	Subbase Placement	Roller	Diesel	9435.00 CY	8 Hours per 1300.00 CY	58.06 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	5362.20 CY	8 Hours per 600.00 CY	71.5 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	5362.20 CY	8 Hours per 600.00 CY	71.5	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	5362.20 CY	8 Hours per 600.00 CY	71.5	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	3400	75	--	--	--	--	--	--	58969	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	3400	75	--	--	--	--	--	--	31450	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	97.35	129	--	--	--	--	--	--	--	--	376745	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	11793.8	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	436.4	lbs
1 Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	7404.9	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	202.8	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	6450	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	59.9	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	5.854	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1 Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years
1 Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
1 Taxiways	Soil Handling	u = Wind speed	5	mph
1 Taxiways	Soil Handling	m = Moisture content	0.25	fraction
1 Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	7012.5	tons
1 Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	144.4	lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 4:57:56 PM

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STUDY

Study Name

A-38

Study Description

Construct up to seven new taxiway connectors (V1-V7)
between the expanded west side apron (Project G-9) and new Taxiway V (for ADG-III aircraft).

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EMISSIONS INVENTORY - SUMMARY

Total Emissions by Year

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.217601	0.899652	0.004028	0.176758	0.03969	0.23589	688.6624	0.020081	0.003051

Total Emissions by Source Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.35041	0.783152	0.003092	0.038688	0.035593	0.185104	558.9453	--	--
2020	OnRoad	0.867191	0.1165	0.000937	0.004321	0.004097	0.050786	129.7171	0.020081	0.003051
2020	Fugitive	0	0	0	0.13375	--	0	--	--	--
2020	TOTAL	1.217601	0.899652	0.004028	0.176758	0.03969	0.23589	688.6624	0.020081	0.003051

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	25.2	0.062785	0.000283	3.00E-05	0.002085	0.001918	0.01706	0.133111	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	25.2	0.002028	0.0036	4.14E-06	0.000351	0.000323	0.000447	0.638575	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	33.6	0.002881	0.008238	3.47E-05	0.000332	0.000306	0.001887	6.380171	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	30.7384	0.00161	0.002614	4.73E-06	0.00023	0.000212	0.000333	0.779482	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	30.7384	0.000418	0.002649	2.46E-06	5.72E-05	5.26E-05	0.000134	0.432099	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	128.0767	0.010981	0.031403	0.000132	0.001266	0.001165	0.00711	24.31997	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	61.4768	0.001957	0.007144	1.47E-05	0.000471	0.000433	0.000928	2.45421	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	92.2152	0.007907	0.02261	9.53E-05	0.000912	0.000839	0.005128	17.51038	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	30.7384	0.001673	0.003906	9.95E-06	0.000369	0.000339	0.000602	1.702177	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	30.7384	0.001528	0.003512	9.84E-06	0.00033	0.000304	0.000583	1.702221	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	30.7384	0.001189	0.002229	2.00E-06	0.000176	0.000162	0.000236	0.269644	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	20.928	0.000883	0.002037	6.57E-06	0.000182	0.000167	0.000386	1.158984	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	20.928	0.001794	0.005131	2.16E-05	0.000207	0.00019	0.001187	3.973935	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	20.928	0.000696	0.00167	6.43E-06	0.000129	0.000119	0.000367	1.159024	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	20.928	0.001139	0.002659	6.77E-06	0.000251	0.000231	0.000418	1.158914	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	20.928	0.000666	0.002432	5.01E-06	0.00016	0.000148	0.000337	0.835465	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	20.928	0.001794	0.005131	2.16E-05	0.000207	0.00019	0.001187	3.973935
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	20.928	0.001774	0.001778	4.30E-06	0.000213	0.000196	0.000259	0.735446
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	11.62667	0.000997	0.002851	1.20E-05	0.000115	0.000106	0.000673	2.207742
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	11.62667	0.000633	0.001477	3.76E-06	0.00014	0.000128	0.000243	0.643841
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	11.62667	0.00037	0.001351	2.79E-06	8.91E-05	8.20E-05	0.000201	0.464147
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	11.62667	0.000997	0.002851	1.20E-05	0.000115	0.000106	0.000673	2.207742
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	11.62667	0.001069	0.000827	1.09E-06	0.000147	0.000136	0.000245	0.169477
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	51.23067	0.002162	0.004988	1.61E-05	0.000445	0.000409	0.000917	2.837134
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	51.23067	0.004393	0.012561	5.29E-05	0.000507	0.000466	0.002862	9.727989
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	51.23067	0.004393	0.012561	5.29E-05	0.000507	0.000466	0.002862	9.727989
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	23.64492	0.002005	0.002009	4.86E-06	0.000241	0.000222	0.00029	0.830923
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	38.423	0.001621	0.003741	1.21E-05	0.000334	0.000307	0.000693	2.127851
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	102.4613	0.008785	0.025122	0.000106	0.001013	0.000932	0.005694	19.45598
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	30.7384	0.001022	0.002453	9.45E-06	0.000189	0.000174	0.000532	1.702338
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	30.7384	0.002636	0.007537	3.18E-05	0.000304	0.00028	0.001729	5.836793

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	30.7384	0.002606	0.002612	6.31E-06	0.000313	0.000288	0.000372	1.0802
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	38.423	0.008172	0.020304	4.32E-05	0.001207	0.00111	0.0024	7.295471
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	14.46494	0.00061	0.001408	4.54E-06	0.000126	0.000116	0.000273	0.801063
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	7.155556	0.000614	0.001754	7.39E-06	7.07E-05	6.51E-05	0.000425	1.35874
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	28.62222	0.002454	0.007018	2.96E-05	0.000283	0.00026	0.001612	5.434961
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	28.62222	0.000911	0.003326	6.86E-06	0.000219	0.000202	0.000449	1.142625
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	28.62222	0.002454	0.007018	2.96E-05	0.000283	0.00026	0.001612	5.434961
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	28.62222	0.002139	0.002323	2.08E-06	0.000312	0.000287	0.000467	0.312613
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	28.62222	0.002631	0.002037	2.68E-06	0.000363	0.000334	0.000489	0.417213
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	10.0906	0.000426	0.000982	3.17E-06	8.76E-05	8.06E-05	0.000196	0.558813
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	10.0906	0.000479	0.001485	5.31E-06	7.40E-05	6.81E-05	0.000312	0.957999
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	10.0906	0.000856	0.000857	2.07E-06	0.000103	9.45E-05	0.000135	0.354601
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	9.0906	0.000779	0.002229	9.39E-06	8.99E-05	8.27E-05	0.000532	1.726178
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	9.0906	0.000779	0.002229	9.39E-06	8.99E-05	8.27E-05	0.000532	1.726178
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	10.30667	0.000884	0.002527	1.07E-05	0.000102	9.37E-05	0.0006	1.957092
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	10.30667	0.000561	0.00131	3.34E-06	0.000124	0.000114	0.000219	0.570744
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	10.30667	0.000328	0.001198	2.47E-06	7.90E-05	7.27E-05	0.000182	0.411452
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	10.30667	0.000884	0.002527	1.07E-05	0.000102	9.37E-05	0.0006	1.957092
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	10.30667	0.00077	0.000836	7.51E-07	0.000113	0.000104	0.000201	0.11257
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	10.30667	0.000947	0.000733	9.64E-07	0.000131	0.00012	0.000226	0.150236
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	189.888	0.016281	0.046558	0.000196	0.001877	0.001727	0.010528	36.05708
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	189.888	0.006044	0.022065	4.55E-05	0.001455	0.001339	0.002799	7.580502
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	189.888	0.016281	0.046558	0.000196	0.001877	0.001727	0.010528	36.05708
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	8.4	0.000267	0.000976	2.01E-06	6.44E-05	5.92E-05	0.000154	0.335336

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	16.8	0.00144	0.004119	1.74E-05	0.000166	0.000153	0.000959	3.190086												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	8.4	0.000195	0.000201	1.74E-07	1.83E-05	1.68E-05	3.00E-05	0.023379												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	8.4	0.000772	0.000598	7.85E-07	0.000107	9.80E-05	0.000199	0.122443												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	19.41347	0.000819	0.00189	6.10E-06	0.000169	0.000155	0.00036	1.075111												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	136.6133	0.011713	0.033496	0.000141	0.001351	0.001243	0.007582	25.94097												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	19.41347	0.001665	0.00476	2.01E-05	0.000192	0.000177	0.001103	3.686348												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	18.91569	0.001604	0.001607	3.89E-06	0.000193	0.000177	0.000236	0.66473												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	22.424	0.000946	0.002183	7.04E-06	0.000195	0.000179	0.000412	1.241832												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	22.424	0.001923	0.005498	2.32E-05	0.000222	0.000204	0.001269	4.258005												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	22.424	0.001923	0.005498	2.32E-05	0.000222	0.000204	0.001269	4.258005												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	2	--	129	644	129	--	--	--	--	--	19211	0.022085	0.042192	0.000185	0.001569	0.001522	0.0003	24.06166	0.003761	0.001337
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	644	129	--	--	--	--	--	10246	0.011603	0.022485	9.89E-05	0.000836	0.000811	0.000153	12.83094	0.002006	0.000713
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.0711	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.009	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.03015	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.0235	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	1.68E-08	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	2.88	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	644	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	129	Feet

Size Detail (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	2.1	Acres	
1	Taxiways	Concrete Placement	3842.3	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	654	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	1308	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	3842.3	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	3842.3	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	9221.4	Square Yards
1	Taxiways	Fencing	644	Linear Feet
1	Taxiways	Grading	10090.6	Square Yards
1	Taxiways	Hydroseeding	90906	Square Feet
1	Taxiways	Lighting	1546	Linear Feet
1	Taxiways	Markings	83076	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	2.1	Acres
1	Taxiways	Subbase Placement	9221.4	Square Yards
1	Taxiways	Subbase Placement	3073.8	Cubic Yards
1	Taxiways	Topsoil Placement	1681.8	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	2.10 Acre	12 Hours per 1.00 Acre	25.2	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	2.10 Acre	12 Hours per 1.00 Acre	25.2	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	2.10 Acre	16 Hours per 1.00 Acre	33.6	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	3842.30 CY	8 Hours per 240.00 CY	128.08	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	3842.30 CY	16 Hours per 1000.00 CY	61.48	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	3842.30 CY	24 Hours per 1000.00 CY	92.22	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93 hours
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	654.00 LF	8 Hours per 250.00 LF	20.93 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	1308.00 LF	8 Hours per 900.00 LF	11.63 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	1308.00 LF	8 Hours per 900.00 LF	11.63 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	1308.00 LF	8 Hours per 900.00 LF	11.63 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	1308.00 LF	8 Hours per 900.00 LF	11.63 hours
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	1308.00 LF	8 Hours per 900.00 LF	11.63 hours
1	Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	3842.30 CY	8 Hours per 600.00 CY	51.23 hours
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	3842.30 CY	8 Hours per 600.00 CY	51.23 hours
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	3842.30 CY	8 Hours per 600.00 CY	51.23 hours
1	Taxiways	Excavation (Borrow)	Roller	Diesel	3842.30 CY	8 Hours per 1300.00 CY	23.64 hours
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	3842.30 CY	8 Hours per 800.00 CY	38.42 hours
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	3842.30 CY	8 Hours per 300.00 CY	102.46 hours
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74 hours

FINAL

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	3842.30 CY	8 Hours per 1000.00 CY	30.74 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	3842.30 CY	8 Hours per 800.00 CY	38.42 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	9221.40 SY	8 Hours per 5100.00 SY	14.46 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	644.00 LF	2 Hours per 180.00 LF	7.16 hours
1	Taxiways	Fencing	Dump Truck	Diesel	644.00 LF	8 Hours per 180.00 LF	28.62 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	644.00 LF	8 Hours per 180.00 LF	28.62 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	644.00 LF	8 Hours per 180.00 LF	28.62 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	644.00 LF	8 Hours per 180.00 LF	28.62 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	644.00 LF	8 Hours per 180.00 LF	28.62 hours
1	Taxiways	Grading	Dozer	Diesel	10090.60 SY	8 Hours per 8000.00 SY	10.09 hours
1	Taxiways	Grading	Grader	Diesel	10090.60 SY	8 Hours per 8000.00 SY	10.09 hours
1	Taxiways	Grading	Roller	Diesel	10090.60 SY	8 Hours per 8000.00 SY	10.09 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	90906.00 SF	8 Hours per 80000.00 SF	9.09 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	90906.00 SF	8 Hours per 80000.00 SF	9.09 hours
1	Taxiways	Lighting	Dump Truck	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours
1	Taxiways	Lighting	Loader	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	1546.00 LF	8 Hours per 1200.00 LF	10.31 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	83076.00 SF	8 Hours per 3500.00 SF	189.89 hours
1	Taxiways	Markings	Other General Equipment	Diesel	83076.00 SF	8 Hours per 3500.00 SF	189.89 hours
1	Taxiways	Markings	Pickup Truck	Diesel	83076.00 SF	8 Hours per 3500.00 SF	189.89 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	2.10 Acre	4 Hours per 1.00 Acre	8.4 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	2.10 Acre	8 Hours per 1.00 Acre	16.8 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	2.10 Acre	4 Hours per 1.00 Acre	8.4 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	2.10 Acre	4 Hours per 1.00 Acre	8.4 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	9221.40 SY	8 Hours per 3800.00 SY	19.41 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	3073.80 CY	8 Hours per 180.00 CY	136.61 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	9221.40 SY	8 Hours per 3800.00 SY	19.41 hours
1	Taxiways	Subbase Placement	Roller	Diesel	3073.80 CY	8 Hours per 1300.00 CY	18.92 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	1681.80 CY	8 Hours per 600.00 CY	22.42 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	1681.80 CY	8 Hours per 600.00 CY	22.42	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	1681.80 CY	8 Hours per 600.00 CY	22.42	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--		129	644	129	--	--	--	--	--	--	19211
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--		129	644	129	--	--	--	--	--	--	10246
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30		66	129	--	--	--	--	--	--	--	--	255420

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

FINAL

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	3842.3	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x Vs =	142.2	lbs
1 Taxiways	Material Movement (Unpaved Roads)	Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	2200.2	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	60.3	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1935	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	18	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	1.907	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	2284.6 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	47 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/10/2019 1:53:53 PM

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STUDY

Study Name

A-41

Study Description

Relocate existing general aviation run-up pad to southwest apron area. REMOVAL

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EMISSIONS INVENTORY - SUMMARY

Total Emissions by Year

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO_2, CH_4, and N_2O) Emission: Metric Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	0.054901	0.041355	0.000191	0.025585	0.001796	0.009916	32.56124	0.001119	0.000212

Total Emissions by Source Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.012288	0.033557	0.000138	0.001657	0.001524	0.007505	25.32469	--	--
2020	OnRoad	0.042613	0.007798	5.29E-05	0.000284	0.000271	0.002411	7.236552	0.001119	0.000212
2020	Fugitive	0	0	0	0.023644	--	0	--	--	--
2020	TOTAL	0.054901	0.041355	0.000191	0.025585	0.001796	0.009916	32.56124	0.001119	0.000212

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2
1	2020	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel	175	0.59	51.62667	0.001717	0.00412	1.59E-05	0.000318	0.000293	0.000884	2.859161
1	2020	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel	175	0.59	51.62667	0.001717	0.00412	1.59E-05	0.000318	0.000293	0.000884	2.859161
1	2020	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel	600	0.59	103.2533	0.008853	0.025317	0.000107	0.001021	0.000939	0.005738	19.60637

On-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Demolition - Concrete	Dump Truck	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	352	110	--	--	--	--	--	2390	0.004727	0.005442	2.33E-05	0.000197	0.000191	0.000123	3.017258	0.000468	0.000166
1	2020	Demolition - Concrete	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	3	3	129	--	--	--	--	--	--	--	11610	0.037886	0.002356	2.97E-05	8.71E-05	8.02E-05	0.002288	4.219295	0.000651	4.55E-05

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Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Demolition - Concrete	Material Movement (Paved Roads)	6	0	0	0	0.002994	0
1	2020	Demolition - Concrete	Material Movement (Unpaved Roads)	6	0	0	0	0.0097	0
1	2020	Demolition - Concrete	Soil Handling	6	0	0	0	0.01095	0
1	2020	Demolition - Concrete	Unstabilized Land and Wind Erosion	6	0	0	0	7.81E-09	0

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INPUT DATA AND SPECIFICATIONS

State/County

California Santa Clara County

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project Final Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type
1	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel
1	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel
1	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Demolition - Concrete	What is the estimated cost of the project?	0.25	$ Million(s)
1	Demolition - Concrete	What is the maximum length of demolition area (L) in feet?	352	Feet
1	Demolition - Concrete	What is the maximum width of demolition area (W) in feet?	110	Feet

FINAL

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Demolition - Concrete	Concrete Demolition	38720	Square Feet	

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data
1	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel	38720.00 SF	8 Hours per 6000.00 SF	51.63	hours	
1	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel	38720.00 SF	8 Hours per 6000.00 SF	51.63	hours	
1	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel	38720.00 SF	8 Hours per 3000.00 SF	103.25	hours	

Activity: On-Road (Estimated based on engineering experience)

FINAL

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Demolition - Concrete	Dump Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	352	110	--	--	--	--	--	--	2390	
1	Demolition - Concrete	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	3	129	--	--	--	--	--	--	--	--	11610	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)
1	Demolition - Concrete	Demolition	Excavator with Bucket	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Demolition - Concrete	Demolition	Excavator with Hoe Ram	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Demolition - Concrete	Demolition	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Demolition - Concrete	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Demolition - Concrete	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

FINAL

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Demolition - Concrete	Soil Handling	u = Wind speed	5	mph	
1	Demolition - Concrete	Soil Handling	m = Moisture content	0.25	fraction	
1	Demolition - Concrete	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	1064.8	tons	
1	Demolition - Concrete	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	21.9	lbs	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	0.889	acres	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs	
1	Demolition - Concrete	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction	

1	Demolition - Concrete	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32 tons
1	Demolition - Concrete	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	709.5 miles
1	Demolition - Concrete	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	19.4 lbs
1	Demolition - Concrete	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1 g/m3
1	Demolition - Concrete	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32 tons
1	Demolition - Concrete	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	645 miles
1	Demolition - Concrete	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	5.987 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

- Asphalt drying
- Asphalt storage and batching
- Concrete mixing/batching
- Soil handling
- Unstabilized land and wind erosion
- Material movement (unpaved roads)
- Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO_2, CH_4, and N_2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:

- Asphalt Deliveries/Ten Wheelers
- Bulldozer
- Concrete Ready Mix Trucks
- Concrete Ready Trucks Mix for Cores
- Concrete Truck
- Crack Filler (Trailer Mounted)
- Delivery of Tanks (3)
- Distributing Tanker
- Dozer
- Dump Truck
- Dump Truck (12 cy)
- Excavator
- Excavator for U/G Services/Tanks
- Flat Bed or Dump Trucks
- Flatbed Truck
- Grader
- Grout Wheel Truck
- Hoist Equipment with 40 Ton Rig
- Hydralic Hammer
- Hydroseeder
- Line Painting Truck and Sprayer
- Material Deliveries
- Off-Road Truck
- Pickup Truck
- Scraper
- Seed Truck Spreader
- Small Dozer
- Survey Crew Trucks
- Ten Wheelers
- Ten Wheelers- Material Delivery
- Tool Truck
- Tractor Trailer- Equipment Delivery
- Tractor Trailer- Material Delivery
- Tractor Trailer- Steel Deliveries
- Tractor Trailer- Stone Delivery
- Tractor Trailer- Topsoil & Seed
- Tractor Trailer- Truck Delivery

FINAL

Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 5:03:58 PM

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STUDY

Study Name

A-42

Study Description

Relocate Runway 12R-30L aircraft hold positions on all cross taxiways to current ADG-V aircraft standard.

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EMISSION
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INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.160515	0.786525	0.00355	0.128703	0.035352	0.214191	609.7946	0.017438	0.002111

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.305142	0.699314	0.002743	0.035131	0.03232	0.163457	496.943	--	--
2020	OnRoad	0.855373	0.087211	0.000807	0.003222	0.003031	0.050735	112.8517	0.017438	0.002111
2020	Fugitive	0	0	0	0.09035	--	0	--	--	--
2020	TOTAL	1.160515	0.786525	0.00355	0.128703	0.035352	0.214191	609.7946	0.017438	0.002111

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	16.8	0.041857	0.000189	2.00E-05	0.00139	0.001279	0.012648	0.08874	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	16.8	0.001352	0.0024	2.76E-06	0.000234	0.000215	0.000308	0.425717	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	22.4	0.001921	0.005492	2.31E-05	0.000221	0.000204	0.001268	4.253448	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	16.6504	0.000872	0.001416	2.56E-06	0.000125	0.000115	0.000193	0.422231	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	16.6504	0.000226	0.001435	1.33E-06	3.10E-05	2.85E-05	7.30E-05	0.23406	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	69.37667	0.005948	0.01701	7.17E-05	0.000686	0.000631	0.003865	13.17366	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	33.3008	0.00106	0.00387	7.98E-06	0.000255	0.000235	0.000517	1.329398	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	49.9512	0.004283	0.012247	5.16E-05	0.000494	0.000454	0.002791	9.485036	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	16.6504	0.000906	0.002116	5.39E-06	0.0002	0.000184	0.000337	0.922036	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	16.6504	0.000828	0.001902	5.33E-06	0.000179	0.000164	0.000326	0.92206	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	16.6504	0.000644	0.001207	1.09E-06	9.56E-05	8.80E-05	0.000128	0.146061	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	48.32	0.002039	0.004704	1.52E-05	0.000419	0.000386	0.000866	2.675943	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	48.32	0.004143	0.011848	4.99E-05	0.000478	0.00044	0.002701	9.175294	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	48.32	0.001607	0.003856	1.49E-05	0.000298	0.000274	0.000828	2.676033	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	48.32	0.00263	0.00614	1.56E-05	0.00058	0.000533	0.000931	2.675779	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	48.32	0.001538	0.005615	1.16E-05	0.00037	0.000341	0.000736	1.928978	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	48.32	0.004143	0.011848	4.99E-05	0.000478	0.00044	0.002701	9.175294
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	48.32	0.004097	0.004106	9.93E-06	0.000492	0.000453	0.000573	1.698047
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	26.84444	0.002302	0.006582	2.77E-05	0.000265	0.000244	0.001514	5.097385
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	26.84444	0.001461	0.003411	8.69E-06	0.000322	0.000296	0.000529	1.486544
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	26.84444	0.000854	0.003119	6.43E-06	0.000206	0.000189	0.000423	1.071655
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	26.84444	0.002302	0.006582	2.77E-05	0.000265	0.000244	0.001514	5.097385
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	26.84444	0.002467	0.00191	2.51E-06	0.000341	0.000313	0.000464	0.391299
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	27.75067	0.001171	0.002702	8.72E-06	0.000241	0.000222	0.000506	1.536821
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	27.75067	0.002379	0.006804	2.87E-05	0.000274	0.000252	0.001564	5.269464
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	27.75067	0.002379	0.006804	2.87E-05	0.000274	0.000252	0.001564	5.269464
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	12.808	0.001086	0.001088	2.63E-06	0.00013	0.00012	0.000166	0.450095
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	20.813	0.000878	0.002026	6.54E-06	0.000181	0.000166	0.000384	1.152616
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	55.50133	0.004759	0.013608	5.74E-05	0.000549	0.000505	0.003098	10.53893
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	16.6504	0.000554	0.001329	5.12E-06	0.000103	9.44E-05	0.000295	0.922124
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	16.6504	0.001428	0.004082	1.72E-05	0.000165	0.000151	0.00095	3.161679

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	16.6504	0.001412	0.001415	3.42E-06	0.00017	0.000156	0.00021	0.585123
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	20.813	0.004427	0.010998	2.34E-05	0.000654	0.000601	0.00134	3.951816
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	7.835294	0.000331	0.000763	2.46E-06	6.80E-05	6.26E-05	0.000157	0.433915
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	16.66667	0.001429	0.004086	1.72E-05	0.000165	0.000152	0.000951	3.164767
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	66.66667	0.005716	0.016346	6.89E-05	0.000659	0.000606	0.003715	12.65907
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	66.66667	0.002122	0.007747	1.60E-05	0.000511	0.00047	0.001003	2.661394
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	66.66667	0.005716	0.016346	6.89E-05	0.000659	0.000606	0.003715	12.65907
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	66.66667	0.004982	0.00541	4.86E-06	0.000728	0.00067	0.00102	0.728135
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	66.66667	0.006127	0.004743	6.23E-06	0.000846	0.000778	0.001035	0.97177
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	6.7044	0.000283	0.000653	2.11E-06	5.82E-05	5.35E-05	0.000137	0.371287
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	6.7044	0.000318	0.000987	3.53E-06	4.92E-05	4.52E-05	0.000214	0.636514
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	6.7044	0.000568	0.00057	1.38E-06	6.83E-05	6.28E-05	9.58E-05	0.235604
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	6.04	0.000518	0.001481	6.24E-06	5.97E-05	5.49E-05	0.000364	1.146912
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	6.04	0.000518	0.001481	6.24E-06	5.97E-05	5.49E-05	0.000364	1.146912
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	20.4	0.001749	0.005002	2.11E-05	0.000202	0.000186	0.001158	3.873675
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	20.4	0.00111	0.002592	6.60E-06	0.000245	0.000225	0.000408	1.129675
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	20.4	0.000649	0.00237	4.89E-06	0.000156	0.000144	0.000329	0.814387
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	20.4	0.001749	0.005002	2.11E-05	0.000202	0.000186	0.001158	3.873675
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	20.4	0.001524	0.001655	1.49E-06	0.000223	0.000205	0.000347	0.222809
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	20.4	0.001875	0.001452	1.91E-06	0.000259	0.000238	0.000371	0.297362
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	102.8571	0.008819	0.025219	0.000106	0.001017	0.000936	0.005716	19.53114
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	102.8571	0.003274	0.011952	2.46E-05	0.000788	0.000725	0.001531	4.106151
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	102.8571	0.008819	0.025219	0.000106	0.001017	0.000936	0.005716	19.53114
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	5.6	0.000178	0.000651	1.34E-06	4.29E-05	3.95E-05	0.000113	0.223557

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	11.2	0.00096	0.002746	1.16E-05	0.000111	0.000102	0.000649	2.126724												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	5.6	0.00013	0.000134	1.16E-07	1.22E-05	1.12E-05	2.06E-05	0.015586												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	5.6	0.000515	0.000398	5.24E-07	7.10E-05	6.54E-05	0.000159	0.081629												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	10.51579	0.000444	0.001024	3.30E-06	9.13E-05	8.40E-05	0.000204	0.58236												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	74	0.006345	0.018144	7.65E-05	0.000732	0.000673	0.004121	14.05157												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	10.51579	0.000902	0.002578	1.09E-05	0.000104	9.56E-05	0.000611	1.996802												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	10.24615	0.000869	0.000871	2.10E-06	0.000104	9.60E-05	0.000136	0.360067												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	14.89867	0.000629	0.00145	4.68E-06	0.000129	0.000119	0.000281	0.825082												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	14.89867	0.001277	0.003653	1.54E-05	0.000147	0.000136	0.000853	2.829049												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	14.89867	0.001277	0.003653	1.54E-05	0.000147	0.000136	0.000853	2.829049												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	2	--	129	1500	30	--	--	--	--	--	10406	0.014378	0.02309	0.000101	0.000852	0.000827	0.000267	13.06249	0.002037	0.000724
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	1500	30	--	--	--	--	--	5550	0.007493	0.012298	5.37E-05	0.000454	0.000441	0.000135	6.964716	0.001087	0.000386
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.0385	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.009	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.0301	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.01275	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	9.08E-09	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	1.56	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	1500	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	30	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	1.4	Acres	
1	Taxiways	Concrete Placement	2081.3	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	1510	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	3020	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	2081.3	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	2081.3	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	4995	Square Yards
1	Taxiways	Fencing	1500	Linear Feet
1	Taxiways	Grading	6704.4	Square Yards
1	Taxiways	Hydroseeding	60400	Square Feet
1	Taxiways	Lighting	3060	Linear Feet
1	Taxiways	Markings	45000	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	1.4	Acres
1	Taxiways	Subbase Placement	4995	Square Yards
1	Taxiways	Subbase Placement	1665	Cubic Yards
1	Taxiways	Topsoil Placement	1117.4	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	1.40 Acre	12 Hours per 1.00 Acre	16.8	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	1.40 Acre	12 Hours per 1.00 Acre	16.8	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	1.40 Acre	16 Hours per 1.00 Acre	22.4	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	2081.30 CY	8 Hours per 240.00 CY	69.38	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	2081.30 CY	16 Hours per 1000.00 CY	33.3	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	2081.30 CY	24 Hours per 1000.00 CY	49.95	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32 hours
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	1510.00 LF	8 Hours per 250.00 LF	48.32 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	3020.00 LF	8 Hours per 900.00 LF	26.84 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	3020.00 LF	8 Hours per 900.00 LF	26.84 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	3020.00 LF	8 Hours per 900.00 LF	26.84 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	3020.00 LF	8 Hours per 900.00 LF	26.84 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	3020.00 LF	8 Hours per 900.00 LF	26.84 hours
1 Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	2081.30 CY	8 Hours per 600.00 CY	27.75 hours
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	2081.30 CY	8 Hours per 600.00 CY	27.75 hours
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	2081.30 CY	8 Hours per 600.00 CY	27.75 hours
1 Taxiways	Excavation (Borrow)	Roller	Diesel	2081.30 CY	8 Hours per 1300.00 CY	12.81 hours
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	2081.30 CY	8 Hours per 800.00 CY	20.81 hours
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	2081.30 CY	8 Hours per 300.00 CY	55.5 hours
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65 hours

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	2081.30 CY	8 Hours per 1000.00 CY	16.65 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	2081.30 CY	8 Hours per 800.00 CY	20.81 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	4995.00 SY	8 Hours per 5100.00 SY	7.84 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	1500.00 LF	2 Hours per 180.00 LF	16.67 hours
1	Taxiways	Fencing	Dump Truck	Diesel	1500.00 LF	8 Hours per 180.00 LF	66.67 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	1500.00 LF	8 Hours per 180.00 LF	66.67 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	1500.00 LF	8 Hours per 180.00 LF	66.67 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	1500.00 LF	8 Hours per 180.00 LF	66.67 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	1500.00 LF	8 Hours per 180.00 LF	66.67 hours
1	Taxiways	Grading	Dozer	Diesel	6704.40 SY	8 Hours per 8000.00 SY	6.7 hours
1	Taxiways	Grading	Grader	Diesel	6704.40 SY	8 Hours per 8000.00 SY	6.7 hours
1	Taxiways	Grading	Roller	Diesel	6704.40 SY	8 Hours per 8000.00 SY	6.7 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	60400.00 SF	8 Hours per 80000.00 SF	6.04 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	60400.00 SF	8 Hours per 80000.00 SF	6.04 hours
1	Taxiways	Lighting	Dump Truck	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours
1	Taxiways	Lighting	Loader	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	3060.00 LF	8 Hours per 1200.00 LF	20.4 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	45000.00 SF	8 Hours per 3500.00 SF	102.86 hours
1	Taxiways	Markings	Other General Equipment	Diesel	45000.00 SF	8 Hours per 3500.00 SF	102.86 hours
1	Taxiways	Markings	Pickup Truck	Diesel	45000.00 SF	8 Hours per 3500.00 SF	102.86 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	1.40 Acre	4 Hours per 1.00 Acre	5.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	1.40 Acre	8 Hours per 1.00 Acre	11.2 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	1.40 Acre	4 Hours per 1.00 Acre	5.6 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	1.40 Acre	4 Hours per 1.00 Acre	5.6 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	4995.00 SY	8 Hours per 3800.00 SY	10.52 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	1665.00 CY	8 Hours per 180.00 CY	74 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	4995.00 SY	8 Hours per 3800.00 SY	10.52 hours
1	Taxiways	Subbase Placement	Roller	Diesel	1665.00 CY	8 Hours per 1300.00 CY	10.25 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	1117.40 CY	8 Hours per 600.00 CY	14.9 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	1117.40 CY	8 Hours per 600.00 CY	14.9	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	1117.40 CY	8 Hours per 600.00 CY	14.9	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1500	30	--	--	--	--	--	--	10406	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1500	30	--	--	--	--	--	--	5550	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	2081.3	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x Vs =	77	lbs
1 Taxiways	Material Movement (Unpaved Roads)	Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	2197.3	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	60.2	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1935	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	18	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	1.033	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1 Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years
1 Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
1 Taxiways	Soil Handling	u = Wind speed	5	mph
1 Taxiways	Soil Handling	m = Moisture content	0.25	fraction
1 Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	1237.5	tons
1 Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	25.5	lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 5:29:31 PM

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STUDY

Study Name

A-43-1

Study Description

Widen Run and length to current ADG-V aircraft standard.

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EMISSION
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INVENTOR
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SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	0.997399	0.470944	0.002386	0.053801	0.018389	0.14968	408.3816	0.014897	0.001208

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.15602	0.412143	0.001704	0.01781	0.016385	0.099109	311.7724	--	--
2020	OnRoad	0.84138	0.058801	0.000682	0.002163	0.002004	0.050572	96.60919	0.014897	0.001208
2020	Fugitive	0	0	0	0.033828	--	0	--	--	--
2020	TOTAL	0.997399	0.470944	0.002386	0.053801	0.018389	0.14968	408.3816	0.014897	0.001208

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	3.6	0.008969	4.04E-05	4.28E-06	0.000298	0.000274	0.005714	0.019016	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	3.6	0.00029	0.000514	5.92E-07	5.02E-05	4.62E-05	8.91E-05	0.091225	
1	2020	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	4.8	0.000412	0.001177	4.96E-06	4.75E-05	4.37E-05	0.000295	0.911453	
1	2020	Runway Extension	Concrete Placement	Air Compressor	Diesel	100	0.43	3.108	0.000163	0.000264	4.78E-07	2.33E-05	2.14E-05	5.87E-05	0.078814	
1	2020	Runway Extension	Concrete Placement	Concrete Saws	Diesel	40	0.59	3.108	4.22E-05	0.000268	2.48E-07	5.78E-06	5.32E-06	1.39E-05	0.04369	
1	2020	Runway Extension	Concrete Placement	Concrete Truck	Diesel	600	0.59	12.95	0.00111	0.003175	1.34E-05	0.000128	0.000118	0.000746	2.459024	
1	2020	Runway Extension	Concrete Placement	Other General Equipment	Diesel	175	0.43	6.216	0.000198	0.000722	1.49E-06	4.76E-05	4.38E-05	0.000122	0.248148	
1	2020	Runway Extension	Concrete Placement	Pickup Truck	Diesel	600	0.59	9.324	0.000799	0.002286	9.64E-06	9.22E-05	8.48E-05	0.000545	1.770498	
1	2020	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	3.108	0.000169	0.000395	1.01E-06	3.73E-05	3.43E-05	8.36E-05	0.172109	
1	2020	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	175	0.59	3.108	0.000155	0.000355	9.95E-07	3.34E-05	3.07E-05	7.97E-05	0.172114	
1	2020	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	3.108	0.00012	0.000225	2.03E-07	1.78E-05	1.64E-05	2.43E-05	0.027264	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	7.04	0.000297	0.000685	2.21E-06	6.11E-05	5.62E-05	0.000143	0.389872	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	7.04	0.000604	0.001726	7.28E-06	6.96E-05	6.40E-05	0.000419	1.336798	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	7.04	0.000234	0.000562	2.16E-06	4.34E-05	3.99E-05	0.000133	0.389886	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	7.04	0.000383	0.000895	2.28E-06	8.45E-05	7.77E-05	0.000157	0.389849	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	7.04	0.000224	0.000818	1.69E-06	5.39E-05	4.96E-05	0.000134	0.281043	

1	2020	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	7.04	0.000604	0.001726	7.28E-06	6.96E-05	6.40E-05	0.000419	1.336798
1	2020	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	7.04	0.000597	0.000598	1.45E-06	7.17E-05	6.60E-05	9.96E-05	0.247398
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	3.911111	0.000335	0.000959	4.04E-06	3.87E-05	3.56E-05	0.000246	0.742665
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	3.911111	0.000213	0.000497	1.27E-06	4.69E-05	4.32E-05	9.87E-05	0.216583
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	3.911111	0.000124	0.000454	9.37E-07	3.00E-05	2.76E-05	8.89E-05	0.156135
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	3.911111	0.000335	0.000959	4.04E-06	3.87E-05	3.56E-05	0.000246	0.742665
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.911111	0.000359	0.000278	3.66E-07	4.96E-05	4.56E-05	0.000135	0.057011
1	2020	Runway Extension	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Runway Extension	Excavation (Borrow)	Dozer	Diesel	175	0.59	5.18	0.000219	0.000504	1.63E-06	4.50E-05	4.14E-05	0.00011	0.286866
1	2020	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	5.18	0.000444	0.00127	5.35E-06	5.12E-05	4.71E-05	0.000316	0.98361
1	2020	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	5.18	0.000444	0.00127	5.35E-06	5.12E-05	4.71E-05	0.000316	0.98361
1	2020	Runway Extension	Excavation (Borrow)	Roller	Diesel	100	0.59	2.390769	0.000203	0.000203	4.91E-07	2.43E-05	2.24E-05	4.63E-05	0.084016
1	2020	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	3.885	0.000164	0.000378	1.22E-06	3.37E-05	3.10E-05	8.77E-05	0.21515
1	2020	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	10.36	0.000888	0.00254	1.07E-05	0.000102	9.42E-05	0.000602	1.967219
1	2020	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	3.108	0.000103	0.000248	9.55E-07	1.91E-05	1.76E-05	6.70E-05	0.172126
1	2020	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	3.108	0.000266	0.000762	3.21E-06	3.07E-05	2.83E-05	0.000202	0.590166

1	2020	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	3.108	0.000264	0.000264	6.38E-07	3.16E-05	2.91E-05	5.45E-05	0.10922
1	2020	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	3.885	0.000826	0.002053	4.37E-06	0.000122	0.000112	0.00032	0.737655
1	2020	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	1.462588	6.17E-05	0.000142	4.60E-07	1.27E-05	1.17E-05	4.53E-05	0.080998
1	2020	Runway Extension	Fencing	Concrete Truck	Diesel	600	0.59	2.333333	0.0002	0.000572	2.41E-06	2.31E-05	2.12E-05	0.000159	0.443067
1	2020	Runway Extension	Fencing	Dump Truck	Diesel	600	0.59	9.333333	0.0008	0.002288	9.65E-06	9.23E-05	8.49E-05	0.000546	1.77227
1	2020	Runway Extension	Fencing	Other General Equipment	Diesel	175	0.43	9.333333	0.000297	0.001085	2.24E-06	7.15E-05	6.58E-05	0.000168	0.372595
1	2020	Runway Extension	Fencing	Pickup Truck	Diesel	600	0.59	9.333333	0.0008	0.002288	9.65E-06	9.23E-05	8.49E-05	0.000546	1.77227
1	2020	Runway Extension	Fencing	Skid Steer Loader	Diesel	75	0.21	9.333333	0.000697	0.000757	6.80E-07	0.000102	9.37E-05	0.000187	0.101939
1	2020	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	9.333333	0.000858	0.000664	8.73E-07	0.000118	0.000109	0.000212	0.136048
1	2020	Runway Extension	Grading	Dozer	Diesel	175	0.59	1.221	5.15E-05	0.000119	3.84E-07	1.06E-05	9.75E-06	4.11E-05	0.067618
1	2020	Runway Extension	Grading	Grader	Diesel	300	0.59	1.221	5.79E-05	0.00018	6.42E-07	8.96E-06	8.24E-06	5.62E-05	0.115921
1	2020	Runway Extension	Grading	Roller	Diesel	100	0.59	1.221	0.000104	0.000104	2.51E-07	1.24E-05	1.14E-05	3.28E-05	0.042908
1	2020	Runway Extension	Hydroseeding	Hydroseeder	Diesel	600	0.59	1.1	9.43E-05	0.00027	1.14E-06	1.09E-05	1.00E-05	9.06E-05	0.208875
1	2020	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	600	0.59	1.1	9.43E-05	0.00027	1.14E-06	1.09E-05	1.00E-05	9.06E-05	0.208875
1	2020	Runway Extension	Lighting	Dump Truck	Diesel	600	0.59	3.333333	0.000286	0.000817	3.44E-06	3.30E-05	3.03E-05	0.000214	0.632953
1	2020	Runway Extension	Lighting	Loader	Diesel	175	0.59	3.333333	0.000181	0.000424	1.08E-06	4.00E-05	3.68E-05	8.78E-05	0.184587
1	2020	Runway Extension	Lighting	Other General Equipment	Diesel	175	0.43	3.333333	0.000106	0.000387	7.99E-07	2.55E-05	2.35E-05	8.04E-05	0.13307
1	2020	Runway Extension	Lighting	Pickup Truck	Diesel	600	0.59	3.333333	0.000286	0.000817	3.44E-06	3.30E-05	3.03E-05	0.000214	0.632953
1	2020	Runway Extension	Lighting	Skid Steer Loader	Diesel	75	0.21	3.333333	0.000249	0.00027	2.43E-07	3.64E-05	3.35E-05	9.94E-05	0.036407
1	2020	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.333333	0.000306	0.000237	3.12E-07	4.23E-05	3.89E-05	0.000126	0.048589

1	2020	Runway Extension	Markings	Flatbed Truck	Diesel	600	0.59	19.2	0.001646	0.004708	1.98E-05	0.00019	0.000175	0.001091	3.645812
1	2020	Runway Extension	Markings	Other General Equipment	Diesel	175	0.43	19.2	0.000611	0.002231	4.60E-06	0.000147	0.000135	0.000312	0.766481
1	2020	Runway Extension	Markings	Pickup Truck	Diesel	600	0.59	19.2	0.001646	0.004708	1.98E-05	0.00019	0.000175	0.001091	3.645812
1	2020	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	175	0.43	1.2	3.82E-05	0.000139	2.87E-07	9.19E-06	8.46E-06	4.94E-05	0.047905
1	2020	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	600	0.59	2.4	0.000206	0.000588	2.48E-06	2.37E-05	2.18E-05	0.000162	0.455727
1	2020	Runway Extension	Soil Erosion/Control	Pumps	Diesel	11	0.43	1.2	2.79E-05	2.87E-05	2.48E-08	2.61E-06	2.40E-06	5.93E-06	0.00334
1	2020	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	100	0.21	1.2	0.00011	8.54E-05	1.12E-07	1.52E-05	1.40E-05	9.58E-05	0.017492
1	2020	Runway Extension	Subbase Placement	Dozer	Diesel	175	0.59	1.962947	8.28E-05	0.000191	6.17E-07	1.70E-05	1.57E-05	5.41E-05	0.108707
1	2020	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	13.81333	0.001184	0.003387	1.43E-05	0.000137	0.000126	0.000793	2.622959
1	2020	Runway Extension	Subbase Placement	Pickup Truck	Diesel	600	0.59	1.962947	0.000168	0.000481	2.03E-06	1.94E-05	1.79E-05	0.000138	0.372736
1	2020	Runway Extension	Subbase Placement	Roller	Diesel	100	0.59	1.912615	0.000162	0.000163	3.93E-07	1.95E-05	1.79E-05	4.08E-05	0.067213
1	2020	Runway Extension	Topsoil Placement	Dozer	Diesel	175	0.59	2.713333	0.000115	0.000264	8.52E-07	2.36E-05	2.17E-05	6.72E-05	0.150263
1	2020	Runway Extension	Topsoil Placement	Dump Truck	Diesel	600	0.59	2.713333	0.000233	0.000665	2.80E-06	2.68E-05	2.47E-05	0.00018	0.515224
1	2020	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	600	0.59	2.713333	0.000233	0.000665	2.80E-06	2.68E-05	2.47E-05	0.00018	0.515224

On-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

FINAL

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Runway Extension	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	210	40	--	--	--	--	--	1943	0.004335	0.004472	1.90E-05	0.000161	0.000156	0.000121	2.458867	0.00038	0.000135
1	2020	Runway Extension	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	210	40	--	--	--	--	--	1036	0.003541	0.002505	1.02E-05	8.70E-05	8.44E-05	0.000117	1.325847	0.000203	7.21E-05
1	2020	Runway Extension	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Runway Extension	Concrete Mixing/Batching	6	0	0	0	0.0072	0
1	2020	Runway Extension	Material Movement (Paved Roads)	6	0	0	0	0.006	0
1	2020	Runway Extension	Material Movement (Unpaved Roads)	6	0	0	0	0.01825	0

1	2020	Runway Extension	Soil Handling	6	0	0	0	0.002378	0
1	2020	Runway Extension	Unstabilized Land and Wind Erosion	6	0	0	0	1.69E-09	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
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Project
Final
Selections

FINAL

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	
1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	
1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	

1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Dust Control	Water Truck	Diesel
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel
1	Runway Extension	Excavation (Borrow)	Roller	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel

1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel
1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel
1	Runway Extension	Fencing	Concrete Truck	Diesel
1	Runway Extension	Fencing	Dump Truck	Diesel
1	Runway Extension	Fencing	Other General Equipment	Diesel
1	Runway Extension	Fencing	Pickup Truck	Diesel
1	Runway Extension	Fencing	Skid Steer Loader	Diesel
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Grading	Dozer	Diesel
1	Runway Extension	Grading	Grader	Diesel
1	Runway Extension	Grading	Roller	Diesel
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel
1	Runway Extension	Lighting	Dump Truck	Diesel
1	Runway Extension	Lighting	Loader	Diesel
1	Runway Extension	Lighting	Other General Equipment	Diesel
1	Runway Extension	Lighting	Pickup Truck	Diesel
1	Runway Extension	Lighting	Skid Steer Loader	Diesel
1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel

1	Runway Extension	Markings	Flatbed Truck	Diesel
1	Runway Extension	Markings	Other General Equipment	Diesel
1	Runway Extension	Markings	Pickup Truck	Diesel
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel
1	Runway Extension	Soil Erosion/Control	Pumps	Diesel
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Subbase Placement	Dozer	Diesel
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel
1	Runway Extension	Subbase Placement	Pickup Truck	Diesel
1	Runway Extension	Subbase Placement	Roller	Diesel
1	Runway Extension	Topsoil Placement	Dozer	Diesel
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Runway Extension	What is the estimated cost of the project?	0.29	$ Million(s)

FINAL

1	Runway Extension	What is the maximum length of the runway extension (L) in feet?	210	Feet
1	Runway Extension	What is the maximum width of the runway extension (W) in feet?	40	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Runway Extension	Clearing and Grubbing	0.3	Acres	
1	Runway Extension	Concrete Placement	388.5	Cubic Yards	
1	Runway Extension	Drainage - 24 inch SICPP	220	Linear Feet	
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	440	Linear Feet	
1	Runway Extension	Dust Control	180	Days	
1	Runway Extension	Excavation (Borrow)	388.5	Cubic Yards	
1	Runway Extension	Excavation (Cut to Fill)	388.5	Cubic Yards	
1	Runway Extension	Excavation (Topsoil Stripping)	932.4	Square Yards	

1	Runway Extension	Fencing	210	Linear Feet
1	Runway Extension	Grading	1221	Square Yards
1	Runway Extension	Hydroseeding	11000	Square Feet
1	Runway Extension	Lighting	500	Linear Feet
1	Runway Extension	Markings	8400	Square Feet
1	Runway Extension	Soil Erosion/Control	0.3	Acres
1	Runway Extension	Subbase Placement	932.4	Square Yards
1	Runway Extension	Subbase Placement	310.8	Cubic Yards
1	Runway Extension	Topsoil Placement	203.5	Cubic Yards

Activity:
Non-Road
(Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data	
										*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	0.30 Acre	12 Hours per 1.00 Acre	3.6	hours		
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	0.30 Acre	12 Hours per 1.00 Acre	3.6	hours		
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	0.30 Acre	16 Hours per 1.00 Acre	4.8	hours		
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11	hours		

1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	388.50 CY	8 Hours per 240.00 CY	12.95 hours
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	388.50 CY	16 Hours per 1000.00 CY	6.22 hours
1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	388.50 CY	24 Hours per 1000.00 CY	9.32 hours
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	220.00 LF	8 Hours per 250.00 LF	7.04 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	440.00 LF	8 Hours per 900.00 LF	3.91 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	440.00 LF	8 Hours per 900.00 LF	3.91 hours

FINAL

1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	440.00 LF	8 Hours per 900.00 LF	3.91 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	440.00 LF	8 Hours per 900.00 LF	3.91 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	440.00 LF	8 Hours per 900.00 LF	3.91 hours
1	Runway Extension	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel	388.50 CY	8 Hours per 600.00 CY	5.18 hours
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	388.50 CY	8 Hours per 600.00 CY	5.18 hours
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	388.50 CY	8 Hours per 600.00 CY	5.18 hours
1	Runway Extension	Excavation (Borrow)	Roller	Diesel	388.50 CY	8 Hours per 1300.00 CY	2.39 hours
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	388.50 CY	8 Hours per 800.00 CY	3.89 hours
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	388.50 CY	8 Hours per 300.00 CY	10.36 hours
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	388.50 CY	8 Hours per 1000.00 CY	3.11 hours
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	388.50 CY	8 Hours per 800.00 CY	3.89 hours
1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	932.40 SY	8 Hours per 5100.00 SY	1.46 hours
1	Runway Extension	Fencing	Concrete Truck	Diesel	210.00 LF	2 Hours per 180.00 LF	2.33 hours

FINAL

1	Runway Extension	Fencing	Dump Truck	Diesel	210.00 LF	8 Hours per 180.00 LF	9.33	hours
1	Runway Extension	Fencing	Other General Equipment	Diesel	210.00 LF	8 Hours per 180.00 LF	9.33	hours
1	Runway Extension	Fencing	Pickup Truck	Diesel	210.00 LF	8 Hours per 180.00 LF	9.33	hours
1	Runway Extension	Fencing	Skid Steer Loader	Diesel	210.00 LF	8 Hours per 180.00 LF	9.33	hours
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	210.00 LF	8 Hours per 180.00 LF	9.33	hours

1	Runway Extension	Grading	Dozer	Diesel	1221.00 SY	8 Hours per 8000.00 SY	1.22 hours
1	Runway Extension	Grading	Grader	Diesel	1221.00 SY	8 Hours per 8000.00 SY	1.22 hours
1	Runway Extension	Grading	Roller	Diesel	1221.00 SY	8 Hours per 8000.00 SY	1.22 hours
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel	11000.00 SF	8 Hours per 80000.00 SF	1.1 hours
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	11000.00 SF	8 Hours per 80000.00 SF	1.1 hours
1	Runway Extension	Lighting	Dump Truck	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Lighting	Loader	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Lighting	Other General Equipment	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Lighting	Pickup Truck	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Lighting	Skid Steer Loader	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	500.00 LF	8 Hours per 1200.00 LF	3.33 hours
1	Runway Extension	Markings	Flatbed Truck	Diesel	8400.00 SF	8 Hours per 3500.00 SF	19.2 hours
1	Runway Extension	Markings	Other General Equipment	Diesel	8400.00 SF	8 Hours per 3500.00 SF	19.2 hours
1	Runway Extension	Markings	Pickup Truck	Diesel	8400.00 SF	8 Hours per 3500.00 SF	19.2 hours
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	0.30 Acre	4 Hours per 1.00 Acre	1.2 hours
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	0.30 Acre	8 Hours per 1.00 Acre	2.4 hours

1	Runway Extension	Soil Erosion/Control	Pumps	Diesel	0.30 Acre	4 Hours per 1.00 Acre	1.2 hours
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	0.30 Acre	4 Hours per 1.00 Acre	1.2 hours
1	Runway Extension	Subbase Placement	Dozer	Diesel	932.40 SY	8 Hours per 3800.00 SY	1.96 hours
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	310.80 CY	8 Hours per 180.00 CY	13.81 hours
1	Runway Extension	Subbase Placement	Pickup Truck	Diesel	932.40 SY	8 Hours per 3800.00 SY	1.96 hours
1	Runway Extension	Subbase Placement	Roller	Diesel	310.80 CY	8 Hours per 1300.00 CY	1.91 hours
1	Runway Extension	Topsoil Placement	Dozer	Diesel	203.50 CY	8 Hours per 600.00 CY	2.71 hours
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel	203.50 CY	8 Hours per 600.00 CY	2.71 hours
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	203.50 CY	8 Hours per 600.00 CY	2.71 hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Runway Extension	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	210	40	--	--	--	--	--	--	1943	
1	Runway Extension	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	210	40	--	--	--	--	--	--	1036	
1	Runway Extension	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

FINAL

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615	
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896	
1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633	
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128	
1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261	
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771	
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483	
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385	
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906	
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261	

1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906

1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Runway Extension	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012

1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Soil Erosion/Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Runway Extension	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0

1	Runway Extension	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Runway Extension	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Runway Extension	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	388.5	yd3	
1	Runway Extension	Concrete Mixing/Batching	PM10 = 0.037 x V	14.4	lbs	
1	Runway Extension	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction	
1	Runway Extension	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons	
1	Runway Extension	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	1332.9	miles	
1	Runway Extension	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	36.5	lbs	
1	Runway Extension	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3	
1	Runway Extension	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons	

Runway 1 Extension	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1290	miles
Runway 1 Extension	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	12	lbs
Runway 1 Extension	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	0.193	acres
Runway 1 Extension	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
Runway 1 Extension	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction
Runway 1 Extension	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years
Runway 1 Extension	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
Runway 1 Extension	Soil Handling	u = Wind speed	5	mph
Runway 1 Extension	Soil Handling	m = Moisture content	0.25	fraction
Runway 1 Extension	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	231	tons
Runway 1 Extension	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	4.755	lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:
- Asphalt drying
- Asphalt storage and batching
- Concrete mixing/batching
- Soil handling
- Unstabilized land and wind erosion
- Material movement (unpaved roads)
- Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO_2, CH_4, and N_2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
- Asphalt Deliveries/Ten Wheelers
- Bulldozer
- Concrete Ready Mix Trucks
- Concrete Ready Trucks Mix for Cores
- Concrete Truck
- Crack Filler (Trailer Mounted)
- Delivery of Tanks (3)
- Distributing Tanker
- Dozer
- Dump Truck
- Dump Truck (12 cy)
- Excavator
- Excavator for U/G Services/Tanks
- Flat Bed or Dump Trucks
- Flatbed Truck
- Grader
- Grout Wheel Truck
- Hoist Equipment with 40 Ton Rig

Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 5:34:29 PM

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STUDY

Study Name

A-43-2

Study Description

Widen Run and length to current ADG-V aircraft standard.

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EMISSION
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SUMMAR
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Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	0.988534	0.456231	0.00233	0.050681	0.01757	0.146394	398.9422	0.014766	0.001162

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.147738	0.398877	0.001655	0.016977	0.015619	0.095825	303.1662	--	--
2020	OnRoad	0.840796	0.057354	0.000675	0.002109	0.001952	0.050569	95.77598	0.014766	0.001162
2020	Fugitive	0	0	0	0.031596	--	0	--	--	--
2020	TOTAL	0.988534	0.456231	0.00233	0.050681	0.01757	0.146394	398.9422	0.014766	0.001162

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	2.4	0.00598	2.70E-05	2.86E-06	0.000199	0.000183	0.005083	0.012677	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	2.4	0.000193	0.000343	3.94E-07	3.35E-05	3.08E-05	6.92E-05	0.060817	
1	2020	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	3.2	0.000274	0.000785	3.31E-06	3.16E-05	2.91E-05	0.000207	0.607635	
1	2020	Runway Extension	Concrete Placement	Air Compressor	Diesel	100	0.43	2.4128	0.000126	0.000205	3.71E-07	1.81E-05	1.66E-05	5.18E-05	0.061185	
1	2020	Runway Extension	Concrete Placement	Concrete Saws	Diesel	40	0.59	2.4128	3.28E-05	0.000208	1.93E-07	4.49E-06	4.13E-06	1.09E-05	0.033918	
1	2020	Runway Extension	Concrete Placement	Concrete Truck	Diesel	600	0.59	10.05333	0.000862	0.002465	1.04E-05	9.94E-05	9.14E-05	0.000586	1.908988	
1	2020	Runway Extension	Concrete Placement	Other General Equipment	Diesel	175	0.43	4.8256	0.000154	0.000561	1.16E-06	3.70E-05	3.40E-05	0.000102	0.192642	
1	2020	Runway Extension	Concrete Placement	Pickup Truck	Diesel	600	0.59	7.2384	0.000621	0.001775	7.48E-06	7.16E-05	6.58E-05	0.00043	1.374471	
1	2020	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	2.4128	0.000131	0.000307	7.81E-07	2.89E-05	2.66E-05	7.06E-05	0.133612	
1	2020	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	175	0.59	2.4128	0.00012	0.000276	7.72E-07	2.59E-05	2.38E-05	6.70E-05	0.133615	
1	2020	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.4128	9.33E-05	0.000175	1.57E-07	1.39E-05	1.27E-05	1.90E-05	0.021166	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	5.536	0.000234	0.000539	1.74E-06	4.81E-05	4.42E-05	0.000117	0.306581	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	5.536	0.000475	0.001357	5.72E-06	5.47E-05	5.04E-05	0.000336	1.051209	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	5.536	0.000184	0.000442	1.70E-06	3.41E-05	3.14E-05	0.000108	0.306592	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	5.536	0.000301	0.000703	1.79E-06	6.64E-05	6.11E-05	0.000129	0.306563	
1	2020	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	5.536	0.000176	0.000643	1.33E-06	4.24E-05	3.90E-05	0.000113	0.221002	

1	2020	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	5.536	0.000475	0.001357	5.72E-06	5.47E-05	5.04E-05	0.000336	1.051209
1	2020	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	5.536	0.000469	0.00047	1.14E-06	5.64E-05	5.19E-05	8.24E-05	0.194544
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	3.075556	0.000264	0.000754	3.18E-06	3.04E-05	2.80E-05	0.0002	0.584005
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	3.075556	0.000167	0.000391	9.95E-07	3.69E-05	3.39E-05	8.30E-05	0.170313
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	3.075556	9.79E-05	0.000357	7.37E-07	2.36E-05	2.17E-05	7.67E-05	0.122779
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	3.075556	0.000264	0.000754	3.18E-06	3.04E-05	2.80E-05	0.0002	0.584005
1	2020	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.075556	0.000283	0.000219	2.88E-07	3.90E-05	3.59E-05	0.000123	0.044831
1	2020	Runway Extension	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Runway Extension	Excavation (Borrow)	Dozer	Diesel	175	0.59	4.021333	0.00017	0.000391	1.26E-06	3.49E-05	3.21E-05	9.01E-05	0.2227
1	2020	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	4.021333	0.000345	0.000986	4.16E-06	3.98E-05	3.66E-05	0.000252	0.763595
1	2020	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	4.021333	0.000345	0.000986	4.16E-06	3.98E-05	3.66E-05	0.000252	0.763595
1	2020	Runway Extension	Excavation (Borrow)	Roller	Diesel	100	0.59	1.856	0.000157	0.000158	3.81E-07	1.89E-05	1.74E-05	4.01E-05	0.065223
1	2020	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	3.016	0.000127	0.000294	9.48E-07	2.62E-05	2.41E-05	7.25E-05	0.167025
1	2020	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	8.042667	0.00069	0.001972	8.31E-06	7.95E-05	7.32E-05	0.000474	1.52719
1	2020	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	2.4128	8.03E-05	0.000193	7.42E-07	1.49E-05	1.37E-05	5.53E-05	0.133624
1	2020	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	2.4128	0.000207	0.000592	2.49E-06	2.39E-05	2.19E-05	0.000163	0.458157

1	2020	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	2.4128	0.000205	0.000205	4.96E-07	2.46E-05	2.26E-05	4.65E-05	0.08479
1	2020	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	3.016	0.000641	0.001594	3.39E-06	9.47E-05	8.71E-05	0.000268	0.572655
1	2020	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	1.135216	4.79E-05	0.000111	3.57E-07	9.86E-06	9.07E-06	3.96E-05	0.062868
1	2020	Runway Extension	Fencing	Concrete Truck	Diesel	600	0.59	1.811111	0.000155	0.000444	1.87E-06	1.79E-05	1.65E-05	0.00013	0.343905
1	2020	Runway Extension	Fencing	Dump Truck	Diesel	600	0.59	7.244444	0.000621	0.001776	7.49E-06	7.16E-05	6.59E-05	0.00043	1.375619
1	2020	Runway Extension	Fencing	Other General Equipment	Diesel	175	0.43	7.244444	0.000231	0.000842	1.74E-06	5.55E-05	5.11E-05	0.000137	0.289205
1	2020	Runway Extension	Fencing	Pickup Truck	Diesel	600	0.59	7.244444	0.000621	0.001776	7.49E-06	7.16E-05	6.59E-05	0.00043	1.375619
1	2020	Runway Extension	Fencing	Skid Steer Loader	Diesel	75	0.21	7.244444	0.000541	0.000588	5.28E-07	7.91E-05	7.28E-05	0.000156	0.079124
1	2020	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	7.244444	0.000666	0.000515	6.77E-07	9.19E-05	8.45E-05	0.000182	0.105599
1	2020	Runway Extension	Grading	Dozer	Diesel	175	0.59	0.9602	4.05E-05	9.35E-05	3.02E-07	8.34E-06	7.67E-06	3.65E-05	0.053175
1	2020	Runway Extension	Grading	Grader	Diesel	300	0.59	0.9602	4.55E-05	0.000141	5.05E-07	7.04E-06	6.48E-06	4.87E-05	0.091161
1	2020	Runway Extension	Grading	Roller	Diesel	100	0.59	0.9602	8.14E-05	8.16E-05	1.97E-07	9.78E-06	9.00E-06	2.98E-05	0.033743
1	2020	Runway Extension	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.865	7.42E-05	0.000212	8.94E-07	8.55E-06	7.87E-06	7.76E-05	0.164251
1	2020	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.865	7.42E-05	0.000212	8.94E-07	8.55E-06	7.87E-06	7.76E-05	0.164251
1	2020	Runway Extension	Lighting	Dump Truck	Diesel	600	0.59	2.706667	0.000232	0.000664	2.80E-06	2.68E-05	2.46E-05	0.000179	0.513958
1	2020	Runway Extension	Lighting	Loader	Diesel	175	0.59	2.706667	0.000147	0.000344	8.76E-07	3.25E-05	2.99E-05	7.61E-05	0.149885
1	2020	Runway Extension	Lighting	Other General Equipment	Diesel	175	0.43	2.706667	8.61E-05	0.000315	6.48E-07	2.07E-05	1.91E-05	7.13E-05	0.108053
1	2020	Runway Extension	Lighting	Pickup Truck	Diesel	600	0.59	2.706667	0.000232	0.000664	2.80E-06	2.68E-05	2.46E-05	0.000179	0.513958
1	2020	Runway Extension	Lighting	Skid Steer Loader	Diesel	75	0.21	2.706667	0.000202	0.00022	1.97E-07	2.95E-05	2.72E-05	9.03E-05	0.029562
1	2020	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	2.706667	0.000249	0.000193	2.53E-07	3.43E-05	3.16E-05	0.000117	0.039454

1	2020	Runway Extension	Markings	Flatbed Truck	Diesel	600	0.59	14.90286	0.001278	0.003654	1.54E-05	0.000147	0.000136	0.000854	2.829845
1	2020	Runway Extension	Markings	Other General Equipment	Diesel	175	0.43	14.90286	0.000474	0.001732	3.57E-06	0.000114	0.000105	0.000249	0.594936
1	2020	Runway Extension	Markings	Pickup Truck	Diesel	600	0.59	14.90286	0.001278	0.003654	1.54E-05	0.000147	0.000136	0.000854	2.829845
1	2020	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	175	0.43	0.8	2.55E-05	9.30E-05	1.92E-07	6.13E-06	5.64E-06	4.35E-05	0.031937
1	2020	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	600	0.59	1.6	0.000137	0.000392	1.65E-06	1.58E-05	1.46E-05	0.000118	0.303818
1	2020	Runway Extension	Soil Erosion/Control	Pumps	Diesel	11	0.43	0.8	1.86E-05	1.92E-05	1.65E-08	1.74E-06	1.60E-06	4.60E-06	0.002227
1	2020	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	100	0.21	0.8	7.35E-05	5.69E-05	7.48E-08	1.01E-05	9.34E-06	9.00E-05	0.011661
1	2020	Runway Extension	Subbase Placement	Dozer	Diesel	175	0.59	1.523579	6.43E-05	0.000148	4.79E-07	1.32E-05	1.22E-05	4.64E-05	0.084375
1	2020	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	10.72	0.000919	0.002628	1.11E-05	0.000106	9.75E-05	0.000622	2.035578
1	2020	Runway Extension	Subbase Placement	Pickup Truck	Diesel	600	0.59	1.523579	0.000131	0.000374	1.57E-06	1.51E-05	1.39E-05	0.000114	0.289306
1	2020	Runway Extension	Subbase Placement	Roller	Diesel	100	0.59	1.484308	0.000126	0.000126	3.05E-07	1.51E-05	1.39E-05	3.58E-05	0.052161
1	2020	Runway Extension	Topsoil Placement	Dozer	Diesel	175	0.59	2.133333	9.00E-05	0.000208	6.70E-07	1.85E-05	1.70E-05	5.71E-05	0.118143
1	2020	Runway Extension	Topsoil Placement	Dump Truck	Diesel	600	0.59	2.133333	0.000183	0.000523	2.20E-06	2.11E-05	1.94E-05	0.000148	0.40509
1	2020	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	600	0.59	2.133333	0.000183	0.000523	2.20E-06	2.11E-05	1.94E-05	0.000148	0.40509

On-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

FINAL

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Runway Extension	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	163	40	--	--	--	--	--	1508	0.003955	0.003529	1.48E-05	0.000125	0.000122	0.000119	1.915467	0.000295	0.000105
1	2020	Runway Extension	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	1	--	129	163	40	--	--	--	--	--	804	0.003338	0.002001	7.99E-06	6.81E-05	6.61E-05	0.000117	1.036034	0.000157	5.60E-05
1	2020	Runway Extension	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	66	66	129	--	--	--	--	--	--	--	255420	0.833503	0.051823	0.000652	0.001915	0.001764	0.050333	92.82448	0.014314	0.001001

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Runway Extension	Concrete Mixing/Batching	6	0	0	0	0.0056	0
1	2020	Runway Extension	Material Movement (Paved Roads)	6	0	0	0	0.006	0
1	2020	Runway Extension	Material Movement (Unpaved Roads)	6	0	0	0	0.01815	0

1	2020	Runway Extension	Soil Handling	6	0	0	0	0.001846	0
1	2020	Runway Extension	Unstabilized Land and Wind Erosion	6	0	0	0	1.32E-09	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type

1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	
1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	
1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	

1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Dust Control	Water Truck	Diesel
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel
1	Runway Extension	Excavation (Borrow)	Roller	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel

1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel
1	Runway Extension	Fencing	Concrete Truck	Diesel
1	Runway Extension	Fencing	Dump Truck	Diesel
1	Runway Extension	Fencing	Other General Equipment	Diesel
1	Runway Extension	Fencing	Pickup Truck	Diesel
1	Runway Extension	Fencing	Skid Steer Loader	Diesel
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Grading	Dozer	Diesel
1	Runway Extension	Grading	Grader	Diesel
1	Runway Extension	Grading	Roller	Diesel
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel
1	Runway Extension	Lighting	Dump Truck	Diesel
1	Runway Extension	Lighting	Loader	Diesel
1	Runway Extension	Lighting	Other General Equipment	Diesel
1	Runway Extension	Lighting	Pickup Truck	Diesel
1	Runway Extension	Lighting	Skid Steer Loader	Diesel
1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Markings	Flatbed Truck	Diesel

1	Runway Extension	Markings	Other General Equipment	Diesel
1	Runway Extension	Markings	Pickup Truck	Diesel
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel
1	Runway Extension	Soil Erosion/Control	Pumps	Diesel
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel
1	Runway Extension	Subbase Placement	Dozer	Diesel
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel
1	Runway Extension	Subbase Placement	Pickup Truck	Diesel
1	Runway Extension	Subbase Placement	Roller	Diesel
1	Runway Extension	Topsoil Placement	Dozer	Diesel
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Runway Extension	What is the estimated cost of the project?	0.23	$ Million(s)

FINAL

1	Runway Extension	What is the maximum length of the runway extension (L) in feet?	163	Feet
1	Runway Extension	What is the maximum width of the runway extension (W) in feet?	40	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Runway Extension	Clearing and Grubbing	0.2	Acres	
1	Runway Extension	Concrete Placement	301.6	Cubic Yards	
1	Runway Extension	Drainage - 24 inch SICPP	173	Linear Feet	
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	346	Linear Feet	
1	Runway Extension	Dust Control	180	Days	
1	Runway Extension	Excavation (Borrow)	301.6	Cubic Yards	
1	Runway Extension	Excavation (Cut to Fill)	301.6	Cubic Yards	
1	Runway Extension	Excavation (Topsoil Stripping)	723.7	Square Yards	

1	Runway Extension	Fencing	163	Linear Feet
1	Runway Extension	Grading	960.2	Square Yards
1	Runway Extension	Hydroseeding	8650	Square Feet
1	Runway Extension	Lighting	406	Linear Feet
1	Runway Extension	Markings	6520	Square Feet
1	Runway Extension	Soil Erosion/Control	0.2	Acres
1	Runway Extension	Subbase Placement	723.7	Square Yards
1	Runway Extension	Subbase Placement	241.2	Cubic Yards
1	Runway Extension	Topsoil Placement	160	Cubic Yards

Activity:
Non-Road
(Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data	
										*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	0.20 Acre	12 Hours per 1.00 Acre	2.4	hours		
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	0.20 Acre	12 Hours per 1.00 Acre	2.4	hours		
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	0.20 Acre	16 Hours per 1.00 Acre	3.2	hours		
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41	hours		

1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41	hours
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	301.60 CY	8 Hours per 240.00 CY	10.05	hours
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	301.60 CY	16 Hours per 1000.00 CY	4.83	hours
1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	301.60 CY	24 Hours per 1000.00 CY	7.24	hours
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41	hours
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41	hours
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41	hours
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	173.00 LF	8 Hours per 250.00 LF	5.54	hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	346.00 LF	8 Hours per 900.00 LF	3.08	hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	346.00 LF	8 Hours per 900.00 LF	3.08	hours

FINAL

1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	346.00 LF	8 Hours per 900.00 LF	3.08 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	346.00 LF	8 Hours per 900.00 LF	3.08 hours
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	346.00 LF	8 Hours per 900.00 LF	3.08 hours
1	Runway Extension	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel	301.60 CY	8 Hours per 600.00 CY	4.02 hours
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	301.60 CY	8 Hours per 600.00 CY	4.02 hours
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	301.60 CY	8 Hours per 600.00 CY	4.02 hours
1	Runway Extension	Excavation (Borrow)	Roller	Diesel	301.60 CY	8 Hours per 1300.00 CY	1.86 hours
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	301.60 CY	8 Hours per 800.00 CY	3.02 hours
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	301.60 CY	8 Hours per 300.00 CY	8.04 hours
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41 hours
1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41 hours
1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	301.60 CY	8 Hours per 1000.00 CY	2.41 hours
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	301.60 CY	8 Hours per 800.00 CY	3.02 hours
1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	723.70 SY	8 Hours per 5100.00 SY	1.14 hours
1	Runway Extension	Fencing	Concrete Truck	Diesel	163.00 LF	2 Hours per 180.00 LF	1.81 hours

FINAL

1	Runway Extension	Fencing	Dump Truck	Diesel	163.00 LF	8 Hours per 180.00 LF	7.24 hours
1	Runway Extension	Fencing	Other General Equipment	Diesel	163.00 LF	8 Hours per 180.00 LF	7.24 hours
1	Runway Extension	Fencing	Pickup Truck	Diesel	163.00 LF	8 Hours per 180.00 LF	7.24 hours
1	Runway Extension	Fencing	Skid Steer Loader	Diesel	163.00 LF	8 Hours per 180.00 LF	7.24 hours
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	163.00 LF	8 Hours per 180.00 LF	7.24 hours
1	Runway Extension	Grading	Dozer	Diesel	960.20 SY	8 Hours per 8000.00 SY	0.96 hours
1	Runway Extension	Grading	Grader	Diesel	960.20 SY	8 Hours per 8000.00 SY	0.96 hours
1	Runway Extension	Grading	Roller	Diesel	960.20 SY	8 Hours per 8000.00 SY	0.96 hours
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel	8650.00 SF	8 Hours per 80000.00 SF	0.87 hours
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	8650.00 SF	8 Hours per 80000.00 SF	0.87 hours
1	Runway Extension	Lighting	Dump Truck	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Lighting	Loader	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Lighting	Other General Equipment	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Lighting	Pickup Truck	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Lighting	Skid Steer Loader	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	406.00 LF	8 Hours per 1200.00 LF	2.71 hours
1	Runway Extension	Markings	Flatbed Truck	Diesel	6520.00 SF	8 Hours per 3500.00 SF	14.9 hours

1	Runway Extension	Markings	Other General Equipment	Diesel	6520.00 SF	8 Hours per 3500.00 SF	14.9 hours
1	Runway Extension	Markings	Pickup Truck	Diesel	6520.00 SF	8 Hours per 3500.00 SF	14.9 hours
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	0.20 Acre	4 Hours per 1.00 Acre	0.8 hours
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	0.20 Acre	8 Hours per 1.00 Acre	1.6 hours
1	Runway Extension	Soil Erosion/Control	Pumps	Diesel	0.20 Acre	4 Hours per 1.00 Acre	0.8 hours
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	0.20 Acre	4 Hours per 1.00 Acre	0.8 hours
1	Runway Extension	Subbase Placement	Dozer	Diesel	723.70 SY	8 Hours per 3800.00 SY	1.52 hours
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	241.20 CY	8 Hours per 180.00 CY	10.72 hours
1	Runway Extension	Subbase Placement	Pickup Truck	Diesel	723.70 SY	8 Hours per 3800.00 SY	1.52 hours
1	Runway Extension	Subbase Placement	Roller	Diesel	241.20 CY	8 Hours per 1300.00 CY	1.48 hours
1	Runway Extension	Topsoil Placement	Dozer	Diesel	160.00 CY	8 Hours per 600.00 CY	2.13 hours
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel	160.00 CY	8 Hours per 600.00 CY	2.13 hours
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	160.00 CY	8 Hours per 600.00 CY	2.13 hours

Activity: On-Road (Estimated based on engineering experience)

FINAL

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Runway Extension	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	163	40	--	--	--	--	--	--	1508	
1	Runway Extension	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	163	40	--	--	--	--	--	--	804	
1	Runway Extension	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	66	129	--	--	--	--	--	--	--	--	255420	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Runway Extension	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Runway Extension	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615	
1	Runway Extension	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896	
1	Runway Extension	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633	
1	Runway Extension	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234	
1	Runway Extension	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128	

1	Runway Extension	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1	Runway Extension	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1	Runway Extension	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Runway Extension	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Runway Extension	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Runway Extension	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Runway Extension	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Runway Extension	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424

1	Runway Extension	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Runway Extension	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Runway Extension	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Runway Extension	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Soil Erosion/Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Runway Extension	Soil Erosion/Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Soil Erosion/Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Runway Extension	Soil Erosion/Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Runway Extension	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Runway Extension	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Runway Extension	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Runway Extension	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Runway Extension	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Runway Extension	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Runway Extension	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Runway Extension	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Runway Extension	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	301.6	yd3	
1	Runway Extension	Concrete Mixing/Batching	PM10 = 0.037 x V	11.2	lbs	

1	Runway Extension	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043 fraction
1	Runway Extension	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32 tons
1	Runway Extension	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	1323.6 miles
1	Runway Extension	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	36.3 lbs
1	Runway Extension	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1 g/m3
1	Runway Extension	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32 tons
1	Runway Extension	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1290 miles
1	Runway Extension	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	12 lbs
1	Runway Extension	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	0.15 acres
1	Runway Extension	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5 fraction
1	Runway Extension	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63 fraction
1	Runway Extension	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years

1	Runway Extension	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs
1	Runway Extension	Soil Handling	u = Wind speed	5	mph
1	Runway Extension	Soil Handling	m = Moisture content	0.25	fraction
1	Runway Extension	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	179.3	tons
1	Runway Extension	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	3.691	lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling

Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/9/2019 5:10:33 PM

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STUDY

Study Name

A-44

Study Description

Realign exi: H J & L betwe and rename realigned
segments as taxiways Z1-Z8 & Z10.

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EMISSION
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SUMMAR
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Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	1.547698	1.457615	0.006183	0.380051	0.067377	0.35032	1055.388	0.027382	0.005483

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.603911	1.263196	0.004889	0.065743	0.060484	0.296822	878.8666	--	--
2020	OnRoad	0.943787	0.194419	0.001295	0.007208	0.006894	0.053499	176.5209	0.027382	0.005483
2020	Fugitive	0	0	0	0.3071	--	0	--	--	--
2020	TOTAL	1.547698	1.457615	0.006183	0.380051	0.067377	0.35032	1055.388	0.027382	0.005483

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	
1	2020	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	54	0.13454	0.000606	6.43E-05	0.004468	0.004111	0.032189	0.285237	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	2020	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	54	0.004345	0.007715	8.88E-06	0.000753	0.000692	0.000925	1.368376	
1	2020	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	72	0.006173	0.017654	7.44E-05	0.000712	0.000655	0.00401	13.6718	
1	2020	Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	66.6	0.003488	0.005665	1.02E-05	0.000499	0.000459	0.000689	1.688882	
1	2020	Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	66.6	0.000905	0.00574	5.32E-06	0.000124	0.000114	0.000291	0.936217	
1	2020	Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	277.5	0.023793	0.06804	0.000287	0.002744	0.002524	0.015371	52.69338	
1	2020	Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	133.2	0.004239	0.015478	3.19E-05	0.001021	0.000939	0.001973	5.317465	
1	2020	Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	199.8	0.017131	0.048989	0.000206	0.001975	0.001817	0.011075	37.93923	
1	2020	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	66.6	0.003624	0.008463	2.16E-05	0.000799	0.000735	0.001274	3.688057	
1	2020	Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	66.6	0.003312	0.00761	2.13E-05	0.000715	0.000658	0.001237	3.688152	
1	2020	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	66.6	0.002576	0.004829	4.34E-06	0.000382	0.000352	0.000512	0.58423	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	38.72	0.001634	0.00377	1.22E-05	0.000336	0.000309	0.000698	2.144298	
1	2020	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	38.72	0.00332	0.009494	4.00E-05	0.000383	0.000352	0.00217	7.352388	
1	2020	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	38.72	0.001288	0.00309	1.19E-05	0.000239	0.000219	0.000666	2.144371	
1	2020	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	38.72	0.002107	0.00492	1.25E-05	0.000465	0.000427	0.000751	2.144168	
1	2020	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	38.72	0.001232	0.004499	9.28E-06	0.000297	0.000273	0.000596	1.545738	

1	2020	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	38.72	0.00332	0.009494	4.00E-05	0.000383	0.000352	0.00217	7.352388
1	2020	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	38.72	0.003283	0.00329	7.95E-06	0.000394	0.000363	0.000463	1.360687
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	21.51111	0.001844	0.005274	2.22E-05	0.000213	0.000196	0.001219	4.08466
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	21.51111	0.001171	0.002734	6.96E-06	0.000258	0.000237	0.000429	1.191204
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	21.51111	0.000685	0.0025	5.15E-06	0.000165	0.000152	0.000345	0.858743
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	21.51111	0.001844	0.005274	2.22E-05	0.000213	0.000196	0.001219	4.08466
1	2020	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	21.51111	0.001977	0.001531	2.01E-06	0.000273	0.000251	0.000387	0.313558
1	2020	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	1440	0.123467	0.353072	0.001488	0.014237	0.013098	0.079639	273.4359
1	2020	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	111	0.004684	0.010806	3.49E-05	0.000964	0.000887	0.001964	6.147136
1	2020	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	111	0.009517	0.027216	0.000115	0.001097	0.00101	0.006166	21.07735
1	2020	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	111	0.009517	0.027216	0.000115	0.001097	0.00101	0.006166	21.07735
1	2020	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	51.23077	0.004344	0.004353	1.05E-05	0.000522	0.00048	0.000607	1.800336
1	2020	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	83.25	0.003513	0.008105	2.62E-05	0.000723	0.000665	0.001478	4.610352
1	2020	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	222	0.019035	0.054432	0.000229	0.002195	0.002019	0.012303	42.1547
1	2020	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	66.6	0.002215	0.005315	2.05E-05	0.00041	0.000377	0.001136	3.688407
1	2020	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	66.6	0.00571	0.01633	6.88E-05	0.000658	0.000606	0.003712	12.64641

1	2020	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	66.6	0.005647	0.005659	1.37E-05	0.000678	0.000624	0.000783	2.340437
1	2020	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	83.25	0.017707	0.043993	9.36E-05	0.002615	0.002405	0.0051	15.80688
1	2020	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	31.34118	0.001323	0.003051	9.85E-06	0.000272	0.00025	0.000569	1.735662
1	2020	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	13.33333	0.001143	0.003269	1.38E-05	0.000132	0.000121	0.000767	2.531814
1	2020	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	53.33333	0.004573	0.013077	5.51E-05	0.000527	0.000485	0.002978	10.12726
1	2020	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	53.33333	0.001697	0.006197	1.28E-05	0.000409	0.000376	0.000809	2.129115
1	2020	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	53.33333	0.004573	0.013077	5.51E-05	0.000527	0.000485	0.002978	10.12726
1	2020	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	53.33333	0.003985	0.004328	3.88E-06	0.000582	0.000536	0.000826	0.582508
1	2020	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	53.33333	0.004902	0.003795	4.99E-06	0.000677	0.000622	0.000844	0.777416
1	2020	Taxiways	Grading	Dozer	Diesel	175	0.59	21.4896	0.000907	0.002092	6.75E-06	0.000187	0.000172	0.000396	1.190086
1	2020	Taxiways	Grading	Grader	Diesel	300	0.59	21.4896	0.001019	0.003163	1.13E-05	0.000158	0.000145	0.000641	2.040217
1	2020	Taxiways	Grading	Roller	Diesel	100	0.59	21.4896	0.001822	0.001826	4.41E-06	0.000219	0.000201	0.000265	0.755181
1	2020	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	19.36	0.00166	0.004747	2.00E-05	0.000191	0.000176	0.0011	3.676194
1	2020	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	19.36	0.00166	0.004747	2.00E-05	0.000191	0.000176	0.0011	3.676194
1	2020	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	18	0.001543	0.004413	1.86E-05	0.000178	0.000164	0.001025	3.417949
1	2020	Taxiways	Lighting	Loader	Diesel	175	0.59	18	0.00098	0.002287	5.83E-06	0.000216	0.000199	0.000363	0.996772
1	2020	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	18	0.000573	0.002092	4.31E-06	0.000138	0.000127	0.000294	0.718576
1	2020	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	18	0.001543	0.004413	1.86E-05	0.000178	0.000164	0.001025	3.417949
1	2020	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	18	0.001345	0.001461	1.31E-06	0.000196	0.000181	0.000313	0.196596
1	2020	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	18	0.001654	0.001281	1.68E-06	0.000228	0.00021	0.000337	0.262378
1	2020	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	411.4286	0.035276	0.100878	0.000425	0.004068	0.003742	0.022775	78.12455
1	2020	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	411.4286	0.013095	0.047808	9.86E-05	0.003152	0.0029	0.006027	16.4246
1	2020	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	411.4286	0.035276	0.100878	0.000425	0.004068	0.003742	0.022775	78.12455
1	2020	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	18	0.000573	0.002092	4.31E-06	0.000138	0.000127	0.000294	0.718576

1	2020	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel		600	0.59	36	0.003087	0.008827	3.72E-05	0.000356	0.000327	0.00202	6.835898												
1	2020	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel		11	0.43	18	0.000418	0.000431	3.72E-07	3.92E-05	3.61E-05	6.20E-05	0.050099												
1	2020	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel		100	0.21	18	0.001654	0.001281	1.68E-06	0.000228	0.00021	0.000337	0.262378												
1	2020	Taxiways	Subbase Placement	Dozer	Diesel		175	0.59	42.06316	0.001775	0.004095	1.32E-05	0.000365	0.000336	0.000756	2.329441												
1	2020	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel		600	0.59	296	0.025379	0.072576	0.000306	0.002926	0.002692	0.016394	56.20627												
1	2020	Taxiways	Subbase Placement	Pickup Truck	Diesel		600	0.59	42.06316	0.003607	0.010313	4.35E-05	0.000416	0.000383	0.002355	7.987207												
1	2020	Taxiways	Subbase Placement	Roller	Diesel		100	0.59	40.98462	0.003475	0.003482	8.42E-06	0.000417	0.000384	0.000489	1.440269												
1	2020	Taxiways	Topsoil Placement	Dozer	Diesel		175	0.59	47.75467	0.002015	0.004649	1.50E-05	0.000415	0.000381	0.000856	2.644635												
1	2020	Taxiways	Topsoil Placement	Dump Truck	Diesel		600	0.59	47.75467	0.004095	0.011709	4.94E-05	0.000472	0.000434	0.00267	9.067945												
1	2020	Taxiways	Topsoil Placement	Pickup Truck	Diesel		600	0.59	47.75467	0.004095	0.011709	4.94E-05	0.000472	0.000434	0.00267	9.067945												
On-Road Sources																												
Units for Non-Greenhouse Gases Emission: Short Ton																												
Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton																												
Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O

1	2020	Taxiways	Cement Mixer	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	5	--	129	1200	150	--	--	--	--	--	41625	0.049608	0.091589	0.000402	0.003401	0.003299	0.000727	52.15617	0.00815	0.002897
1	2020	Taxiways	Dump Truck Subbase Material	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	3	--	129	1200	150	--	--	--	--	--	22200	0.027336	0.048933	0.000214	0.001815	0.00176	0.000425	27.82718	0.004347	0.001545
1	2020	Taxiways	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	68.64	68.64	129	--	--	--	--	--	--	--	265637	0.866843	0.053896	0.000679	0.001992	0.001834	0.052347	96.53753	0.014886	0.001041

Fugitive Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Taxiways	Concrete Mixing/Batching	6	0	0	0	0.154	0
1	2020	Taxiways	Material Movement (Paved Roads)	6	0	0	0	0.02395	0
1	2020	Taxiways	Material Movement (Unpaved Roads)	6	0	0	0	0.0782	0
1	2020	Taxiways	Soil Handling	6	0	0	0	0.05095	0
1	2020	Taxiways	Unstabilized Land and Wind Erosion	6	0	0	0	3.63E-08	0

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Scenarios

Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project
Final
Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	
					*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	
1	Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	
1	Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	

1	Taxiways	Concrete Placement	Air Compressor	Diesel
1	Taxiways	Concrete Placement	Concrete Saws	Diesel
1	Taxiways	Concrete Placement	Concrete Truck	Diesel
1	Taxiways	Concrete Placement	Other General Equipment	Diesel
1	Taxiways	Concrete Placement	Pickup Truck	Diesel
1	Taxiways	Concrete Placement	Rubber Tired Loader	Diesel
1	Taxiways	Concrete Placement	Slip Form Paver	Diesel
1	Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Loader	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel
1	Taxiways	Drainage - 24 inch SICPP	Roller	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel

1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Dust Control	Water Truck	Diesel
1 Taxiways	Excavation (Borrow)	Dozer	Diesel
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel
1 Taxiways	Excavation (Borrow)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel
1 Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel
1 Taxiways	Excavation (Cut to Fill)	Roller	Diesel
1 Taxiways	Excavation (Cut to Fill)	Scraper	Diesel
1 Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel
1 Taxiways	Fencing	Concrete Truck	Diesel
1 Taxiways	Fencing	Dump Truck	Diesel
1 Taxiways	Fencing	Other General Equipment	Diesel

1 Taxiways	Fencing	Pickup Truck	Diesel
1 Taxiways	Fencing	Skid Steer Loader	Diesel
1 Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Grading	Dozer	Diesel
1 Taxiways	Grading	Grader	Diesel
1 Taxiways	Grading	Roller	Diesel
1 Taxiways	Hydroseeding	Hydroseeder	Diesel
1 Taxiways	Hydroseeding	Off-Road Truck	Diesel
1 Taxiways	Lighting	Dump Truck	Diesel
1 Taxiways	Lighting	Loader	Diesel
1 Taxiways	Lighting	Other General Equipment	Diesel
1 Taxiways	Lighting	Pickup Truck	Diesel
1 Taxiways	Lighting	Skid Steer Loader	Diesel
1 Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Markings	Flatbed Truck	Diesel
1 Taxiways	Markings	Other General Equipment	Diesel
1 Taxiways	Markings	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel
1 Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel
1 Taxiways	Subbase Placement	Dozer	Diesel
1 Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel
1 Taxiways	Subbase Placement	Pickup Truck	Diesel

FINAL

1	Taxiways	Subbase Placement	Roller	Diesel
1	Taxiways	Topsoil Placement	Dozer	Diesel
1	Taxiways	Topsoil Placement	Dump Truck	Diesel
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Taxiways	What is the estimated cost of the project?	6.24	$ Million(s)
1	Taxiways	What is the maximum length of the taxiway (L) in feet?	1200	Feet
1	Taxiways	What is the maximum width of the taxiway (W) in feet?	150	Feet

Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Taxiways	Clearing and Grubbing	4.5	Acres	
1	Taxiways	Concrete Placement	8325	Cubic Yards	

1	Taxiways	Drainage - 24 inch SICPP	1210	Linear Feet
1	Taxiways	Drainage - 6 inch Perforated Underdrain	2420	Linear Feet
1	Taxiways	Dust Control	180	Days
1	Taxiways	Excavation (Borrow)	8325	Cubic Yards
1	Taxiways	Excavation (Cut to Fill)	8325	Cubic Yards
1	Taxiways	Excavation (Topsoil Stripping)	19980	Square Yards
1	Taxiways	Fencing	1200	Linear Feet
1	Taxiways	Grading	21489.6	Square Yards
1	Taxiways	Hydroseeding	193600	Square Feet
1	Taxiways	Lighting	2700	Linear Feet
1	Taxiways	Markings	180000	Square Feet
1	Taxiways	Soil Erosion/Sediment Control	4.5	Acres
1	Taxiways	Subbase Placement	19980	Square Yards
1	Taxiways	Subbase Placement	6660	Cubic Yards
1	Taxiways	Topsoil Placement	3581.6	Cubic Yards

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data

1 Taxiways	Clearing and Grubbing	Chain Saw	Diesel	4.50 Acre	12 Hours per 1.00 Acre	54	hours
1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	4.50 Acre	12 Hours per 1.00 Acre	54	hours
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	4.50 Acre	16 Hours per 1.00 Acre	72	hours
1 Taxiways	Concrete Placement	Air Compressor	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6	hours
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6	hours
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	8325.00 CY	8 Hours per 240.00 CY	277.5	hours
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	8325.00 CY	16 Hours per 1000.00 CY	133.2	hours
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	8325.00 CY	24 Hours per 1000.00 CY	199.8	hours
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6	hours
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6	hours
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6	hours
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72	hours
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72	hours
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72	hours
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72	hours
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72	hours

*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72 hours
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	1210.00 LF	8 Hours per 250.00 LF	38.72 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	2420.00 LF	8 Hours per 900.00 LF	21.51 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	2420.00 LF	8 Hours per 900.00 LF	21.51 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	2420.00 LF	8 Hours per 900.00 LF	21.51 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	2420.00 LF	8 Hours per 900.00 LF	21.51 hours
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	2420.00 LF	8 Hours per 900.00 LF	21.51 hours
1 Taxiways	Dust Control	Water Truck	Diesel	180.00 Day	8 Hours per 1.00 Day	1440 hours
1 Taxiways	Excavation (Borrow)	Dozer	Diesel	8325.00 CY	8 Hours per 600.00 CY	111 hours
1 Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	8325.00 CY	8 Hours per 600.00 CY	111 hours
1 Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	8325.00 CY	8 Hours per 600.00 CY	111 hours
1 Taxiways	Excavation (Borrow)	Roller	Diesel	8325.00 CY	8 Hours per 1300.00 CY	51.23 hours
1 Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	8325.00 CY	8 Hours per 800.00 CY	83.25 hours
1 Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	8325.00 CY	8 Hours per 300.00 CY	222 hours
1 Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6 hours

1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6 hours
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	8325.00 CY	8 Hours per 1000.00 CY	66.6 hours
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	8325.00 CY	8 Hours per 800.00 CY	83.25 hours
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	19980.00 SY	8 Hours per 5100.00 SY	31.34 hours
1	Taxiways	Fencing	Concrete Truck	Diesel	1200.00 LF	2 Hours per 180.00 LF	13.33 hours
1	Taxiways	Fencing	Dump Truck	Diesel	1200.00 LF	8 Hours per 180.00 LF	53.33 hours
1	Taxiways	Fencing	Other General Equipment	Diesel	1200.00 LF	8 Hours per 180.00 LF	53.33 hours
1	Taxiways	Fencing	Pickup Truck	Diesel	1200.00 LF	8 Hours per 180.00 LF	53.33 hours
1	Taxiways	Fencing	Skid Steer Loader	Diesel	1200.00 LF	8 Hours per 180.00 LF	53.33 hours
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	1200.00 LF	8 Hours per 180.00 LF	53.33 hours
1	Taxiways	Grading	Dozer	Diesel	21489.60 SY	8 Hours per 8000.00 SY	21.49 hours
1	Taxiways	Grading	Grader	Diesel	21489.60 SY	8 Hours per 8000.00 SY	21.49 hours
1	Taxiways	Grading	Roller	Diesel	21489.60 SY	8 Hours per 8000.00 SY	21.49 hours
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	193600.00 SF	8 Hours per 80000.00 SF	19.36 hours
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	193600.00 SF	8 Hours per 80000.00 SF	19.36 hours
1	Taxiways	Lighting	Dump Truck	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours
1	Taxiways	Lighting	Loader	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours

1	Taxiways	Lighting	Other General Equipment	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours
1	Taxiways	Lighting	Pickup Truck	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours
1	Taxiways	Lighting	Skid Steer Loader	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	2700.00 LF	8 Hours per 1200.00 LF	18 hours
1	Taxiways	Markings	Flatbed Truck	Diesel	180000.00 SF	8 Hours per 3500.00 SF	411.43 hours
1	Taxiways	Markings	Other General Equipment	Diesel	180000.00 SF	8 Hours per 3500.00 SF	411.43 hours
1	Taxiways	Markings	Pickup Truck	Diesel	180000.00 SF	8 Hours per 3500.00 SF	411.43 hours
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	4.50 Acre	8 Hours per 1.00 Acre	36 hours
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	4.50 Acre	4 Hours per 1.00 Acre	18 hours
1	Taxiways	Subbase Placement	Dozer	Diesel	19980.00 SY	8 Hours per 3800.00 SY	42.06 hours
1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	6660.00 CY	8 Hours per 180.00 CY	296 hours
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	19980.00 SY	8 Hours per 3800.00 SY	42.06 hours
1	Taxiways	Subbase Placement	Roller	Diesel	6660.00 CY	8 Hours per 1300.00 CY	40.98 hours
1	Taxiways	Topsoil Placement	Dozer	Diesel	3581.60 CY	8 Hours per 600.00 CY	47.75 hours

1	Taxiways	Topsoil Placement	Dump Truck	Diesel	3581.60 CY	8 Hours per 600.00 CY	47.75	hours
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	3581.60 CY	8 Hours per 600.00 CY	47.75	hours

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT
1	Taxiways	Cement Mixer	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1200	150	--	--	--	--	--	--	41625	
1	Taxiways	Dump Truck Subbase Material	Material Delivery	Diesel	Urban Unrestricted Access	40	--	129	1200	150	--	--	--	--	--	--	22200	
1	Taxiways	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	68.64	129	--	--	--	--	--	--	--	--	265637	

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)	
1	Taxiways	Clearing and Grubbing	Chain Saw	Diesel	11	0.7	293.535	1.322993	685.9963	0.140192	9.748189	8.968334	61.88836	26.88131	*** GASOLINE DATA USED. DIESEL DATA NOT AVAILABLE ***

1 Taxiways	Clearing and Grubbing	Chipper/Stump Grinder	Diesel	100	0.43	1.6976	3.014009	589.3092	0.003468	0.294053	0.270529	0.349775	0.206615
1 Taxiways	Clearing and Grubbing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Air Compressor	Diesel	100	0.43	1.104829	1.794373	589.7346	0.003245	0.158031	0.145388	0.20937	0.195896
1 Taxiways	Concrete Placement	Concrete Saws	Diesel	40	0.59	0.522532	3.313194	595.6491	0.003072	0.071525	0.065803	0.167578	0.002633
1 Taxiways	Concrete Placement	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Concrete Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Concrete Placement	Rubber Tired Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Concrete Placement	Slip Form Paver	Diesel	175	0.59	0.436875	1.003913	536.3453	0.002812	0.094305	0.086761	0.16014	0.161771
1 Taxiways	Concrete Placement	Surfacing Equipment (Grooving)	Diesel	25	0.59	2.379151	4.459281	594.7267	0.004009	0.353137	0.324886	0.472055	0.003483
1 Taxiways	Drainage - 24 inch SICPP	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1 Taxiways	Drainage - 24 inch SICPP	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1 Taxiways	Drainage - 24 inch SICPP	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1 Taxiways	Drainage - 24 inch SICPP	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1 Taxiways	Drainage - 24 inch SICPP	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1 Taxiways	Drainage - 24 inch SICPP	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1 Taxiways	Drainage - 6 inch Perforated Underdrain	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Drainage - 6 inch Perforated Underdrain	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Drainage - 6 inch Perforated Underdrain	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Dust Control	Water Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Borrow)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Borrow)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Excavation (Cut to Fill)	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Excavator	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Taxiways	Excavation (Cut to Fill)	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Excavation (Cut to Fill)	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Excavation (Cut to Fill)	Scraper	Diesel	600	0.59	0.545055	1.354215	536.363	0.002882	0.080485	0.074046	0.154332	0.607685
1	Taxiways	Excavation (Topsoil Stripping)	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Fencing	Concrete Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

1	Taxiways	Fencing	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Fencing	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Fencing	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Fencing	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Grading	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Grading	Grader	Diesel	300	0.59	0.24308	0.754295	536.3826	0.002696	0.037599	0.034591	0.147818	0.147813
1	Taxiways	Grading	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Hydroseeding	Hydroseeder	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Hydroseeding	Off-Road Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Loader	Diesel	175	0.59	0.478147	1.116521	536.3315	0.002844	0.10542	0.096987	0.164705	0.178261
1	Taxiways	Lighting	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Lighting	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Lighting	Skid Steer Loader	Diesel	75	0.21	4.304131	4.67386	693.4618	0.004195	0.628737	0.578438	0.837397	0.358012
1	Taxiways	Lighting	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Markings	Flatbed Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Markings	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Markings	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Other General Equipment	Diesel	175	0.43	0.383693	1.400863	530.5104	0.002888	0.092368	0.084979	0.175662	0.224128
1	Taxiways	Soil Erosion/Sediment Control	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Soil Erosion/Sediment Control	Pumps	Diesel	11	0.43	4.4591	4.594026	588.4291	0.003967	0.417534	0.384131	0.640288	0.013554
1	Taxiways	Soil Erosion/Sediment Control	Tractors/Loader/Backhoe	Diesel	100	0.21	3.970305	3.073714	694.1216	0.004039	0.547955	0.504118	0.619598	0.552424
1	Taxiways	Subbase Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385

1	Taxiways	Subbase Placement	Dump Truck (12 cy)	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Subbase Placement	Roller	Diesel	100	0.59	1.30367	1.306501	595.6221	0.003159	0.15657	0.144044	0.176484	0.132296
1	Taxiways	Topsoil Placement	Dozer	Diesel	175	0.59	0.370776	0.855376	536.3642	0.00276	0.076278	0.070176	0.15389	0.1385
1	Taxiways	Topsoil Placement	Dump Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234
1	Taxiways	Topsoil Placement	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Taxiways	Cement Mixer	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Dump Truck Subbase Material	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Taxiways	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Taxiways	Concrete Mixing/Batching	V = Volume of asphalt = 0.111 x L x W x 1.25 / 3	8325	yd3	

1 Taxiways	Concrete Mixing/Batching	PM10 = 0.037 x V	308	lbs
1 Taxiways	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction
1 Taxiways	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	5711.8	miles
1 Taxiways	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	156.4	lbs
1 Taxiways	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1	g/m3
1 Taxiways	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32	tons
1 Taxiways	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	5160	miles
1 Taxiways	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	47.9	lbs
1 Taxiways	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	4.132	acres
1 Taxiways	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction
1 Taxiways	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction

1	Taxiways	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5 years
1	Taxiways	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0 lbs
1	Taxiways	Soil Handling	u = Wind speed	5 mph
1	Taxiways	Soil Handling	m = Moisture content	0.25 fraction
1	Taxiways	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	4950 tons
1	Taxiways	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	101.9 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

Asphalt drying
Asphalt storage and batching
Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
Asphalt Deliveries/Ten Wheelers
Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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FINAL

Airport Construction Emissions Inventory Tool (ACEIT)
Version 1.0
Run Date & Time: 4/10/2019 2:00:18 PM

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STUDY

Study Name

A-45

Study Description

Close existi H J & L between taxiways Y and Z through pavement marking/painting or removal (upon completion of Project A-44). REMOVAL

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EMISSION
S
INVENTOR
Y -
SUMMAR
Y

Total
Emissions
by Year

Units for
Non-
Greenhou
se Gases
Emission:
Short Ton

Units for
Greenhou
se Gases
(CO2,
CH4, and
N2O)
Emission:
Metric
Ton

Year	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	0.110003	0.182973	0.000781	0.087399	0.008049	0.037233	135.8909	0.002826	0.000819

Total
Emissions
by Source
Categories

FINAL

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases Emission: Metric Ton

Year	Emission Source	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
2020	NonRoad	0.057122	0.155998	0.000644	0.007702	0.007086	0.034676	117.7284	--	--
2020	OnRoad	0.052881	0.026975	0.000137	0.000997	0.000962	0.002557	18.16247	0.002826	0.000819
2020	Fugitive	0	0	0	0.0787	--	0	--	--	--
2020	TOTAL	0.110003	0.182973	0.000781	0.087399	0.008049	0.037233	135.8909	0.002826	0.000819

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EMISSIONS INVENTORY - DETAILS:

Non-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

FINAL

Scenario ID	Year	Project	Construction Activity	Equipment	Fuel	HP Average	Load Factor	Hours of Activity	CO	NOx	SO2	PM10	PM2.5	VOC	CO2
1	2020	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel	175	0.59	240	0.007983	0.019154	7.38E-05	0.001478	0.00136	0.004055	13.29156
1	2020	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel	175	0.59	240	0.007983	0.019154	7.38E-05	0.001478	0.00136	0.004055	13.29156
1	2020	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel	600	0.59	480	0.041156	0.117691	0.000496	0.004746	0.004366	0.026566	91.1453

On-Road Sources

Units for Non-Greenhouse Gases Emission: Short Ton

Units for Greenhouse Gases (CO2, CH4, and N2O) Emission: Metric Ton

Scenario ID	Year	Project	Equipment	Equipment Category	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Distance for fugitive PM	Number of Vehicles	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Rate	VMT	CO	NOx	SO2	PM10	PM2.5	VOC	CO2	CH4	N2O
1	2020	Demolition - Concrete	Dump Truck	Single Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	5	2	--	129	1200	150	--	--	--	--	--	11111	0.014995	0.024619	0.000107	0.00091	0.000882	0.000269	13.94317	0.002175	0.000773
1	2020	Demolition - Concrete	Passenger Car	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	3	3	129	--	--	--	--	--	--	--	11610	0.037886	0.002356	2.97E-05	8.71E-05	8.02E-05	0.002288	4.219295	0.000651	4.55E-05

Fugitive Sources

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Units for Non-Greenhouse Gases Emission: Short Ton

Scenario ID	Year	Project	Fugitive Source Type	Number of Months	CO	NOx	SO2	PM10	VOC
1	2020	Demolition - Concrete	Material Movement (Paved Roads)	6	0	0	0	0.006	0
1	2020	Demolition - Concrete	Material Movement (Unpaved Roads)	6	0	0	0	0.02175	0
1	2020	Demolition - Concrete	Soil Handling	6	0	0	0	0.05095	0
1	2020	Demolition - Concrete	Unstabilized Land and Wind Erosion	6	0	0	0	3.63E-08	0

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INPUT DATA AND SPECIFICATIONS

State/County

California Santa Clara County

Scenarios

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Scenario ID	Year	Number of Months	Season	Average Daily Temp (degF)	Max Daily Temp Change (degF)	Min Daily Temp Change (degF)
1	2020	6	Winter	50 < T <= 80	10 <= Change in T < 20	10 <= Change in T < 20
2						

Project Final Selections

Scenario ID	Project	Construction Activity	Equipment	Fuel Type
1	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel
1	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel
1	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel

Overall Size

Scenario ID	Project	Project Size Questions	User Input	Unit
1	Demolition - Concrete	What is the estimated cost of the project?	0.25	$ Million(s)
1	Demolition - Concrete	What is the maximum length of demolition area (L) in feet?	1200	Feet
1	Demolition - Concrete	What is the maximum width of demolition area (W) in feet?	150	Feet

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Size Detail (Estimated based on engineering experience)

ScenarioID	Project	Construction Activity	Default Activity Size	Unit	User Activity Size
1	Demolition - Concrete	Concrete Demolition	180000	Square Feet	

Activity: Non-Road (Estimated based on engineering experience)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Activity Size	Activity Rate	Default Activity	Activity Unit	User Activity Data
1	Demolition - Concrete	Concrete Demolition	Excavator with Bucket	Diesel	180000.00 SF	8 Hours per 6000.00 SF	240	hours	
1	Demolition - Concrete	Concrete Demolition	Excavator with Hoe Ram	Diesel	180000.00 SF	8 Hours per 6000.00 SF	240	hours	
1	Demolition - Concrete	Concrete Demolition	Pickup Truck	Diesel	180000.00 SF	8 Hours per 3000.00 SF	480	hours	

Activity: On-Road (Estimated based on engineering experience)

Scenario ID	Project	Equipment	On-road Activity	Fuel	Roadway Type	Round Trip Distance (miles)	Number of Employees Or $M*11 (Whichever larger)	Number of Project Days	Project Length	Project Width	Project Area	Building Height (Building Demolition Only)	Open Space Height (Building Demolition Only)	Number of Trees	Activity Size	Activity Rate	Default VMT	User VMT

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1	Demolition - Concrete	Dump Truck	Material Delivery	Diesel	Urban Unrestricted Access	40	--		129	1200	150	--	--	--	--	--	--	11111
1	Demolition - Concrete	Passenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30		3	129	--	--	--	--	--	--	--	--	11610

Emission Factor: Non-Road (from NONROAD)

Scenario ID	Project	Construction Activity	Equipment	Fuel Type	Avg Rated HP	Load Factor	CO (g/hp-hr)	NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	VOC Exhaust (g/hp-hr)	VOC Evaporative (g/equipment-day)
1	Demolition - Concrete	Demolition Concrete	Excavator with Bucket	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Demolition - Concrete	Demolition Concrete	Excavator with Hoe Ram	Diesel	175	0.59	0.292252	0.701204	536.3824	0.002701	0.054125	0.049795	0.147908	0.102906
1	Demolition - Concrete	Demolition Concrete	Pickup Truck	Diesel	600	0.59	0.219725	0.628334	536.4013	0.002648	0.025336	0.023309	0.141674	0.209234

Emission Factors: On-Road (from MOVES)

Scenario ID	Project Type	Equipment	Fuel Type	Roadway Type	CO(g/mi)	NOx(g/mi)	CO2(g/mi)	SO2(g/mi)	PM10(g/mi)	PM2.5(g/mi)	CH4(g/mi)	N2O(g/mi)	VOC(g/mi)	RV CO(g/veh-day)	RV NOx(g/veh-day)	RV CO2(g/veh-day)	RV SO2(g/veh-day)	RV PM10(g/veh-day)	RV PM2.5(g/veh-day)	RV VOC(g/veh-day)	RP VOC(g/veh-day)
1	Demolition - Concrete	Dump Truck	Diesel	Urban Unrestricted Access	0.794071	1.96807	1249.196	0.008731	0.073826	0.071613	0.195789	0.069606	0.003463	18.52761	1.808956	245.583	0.001774	0.018829	0.018264	0.798407	0
1	Demolition - Concrete	Passenger Car	Gasoline	Urban Unrestricted Access	1.689671	0.102635	348.7876	0.002224	0.005214	0.004801	0.056039	0.003919	0.001767	38.12089	2.442831	438.9424	0.002799	0.047668	0.043893	5.310081	0

Fugitive Emissions (Emission Factors from Various Sources including AP-42)

FINAL

Scenario ID	Project	Fugitive Type	Variable	Default Values	Units	User Value
1	Demolition - Concrete	Soil Handling	u = Wind speed	5	mph	
1	Demolition - Concrete	Soil Handling	m = Moisture content	0.25	fraction	
1	Demolition - Concrete	Soil Handling	T = Mass of aggregate storage pile = L x W x 0.5 x 110 / 2000	4950	tons	
1	Demolition - Concrete	Soil Handling	PM10 = T x 0.35 x 0.0032 x [(u/5)^1.3] / [(m/2)^1.4]	101.9	lbs	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	A = Area affected = L x W / 43560.0	4.132	acres	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	TPConv = TSP/PM10 conversion	0.5	fraction	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	CE = Control efficiency	0.63	fraction	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	t = year (e.g. 0.65 year)	0.5	years	
1	Demolition - Concrete	Unstabilized Land and Wind Erosion	PM10 = 0.38 x A x TPConv x (1-CE) x t / 2000	0	lbs	
1	Demolition - Concrete	Material Movement (Unpaved Roads)	s = Surface material silt content	0.043	fraction	
1	Demolition - Concrete	Material Movement (Unpaved Roads)	Wt. = Mean vehicle weight	32	tons	
1	Demolition - Concrete	Material Movement (Unpaved Roads)	VMT = Vehicle miles traveled	1590	miles	

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1	Demolition - Concrete	Material Movement (Unpaved Roads)	PM10 = 1.5 x [(s/12)^0.9] x [(Wt./3)^0.45] x VMT	43.5 lbs
1	Demolition - Concrete	Material Movement (Paved Roads)	sL = Road surface silt loading	0.1 g/m3
1	Demolition - Concrete	Material Movement (Paved Roads)	Wt. = Mean vehicle weight	32 tons
1	Demolition - Concrete	Material Movement (Paved Roads)	VMT = Vehicle miles traveled	1290 miles
1	Demolition - Concrete	Material Movement (Paved Roads)	PM10 = 0.0022 x (sL^0.91) x (Wt^1.02) x VMT	12 lbs

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ASSUMPTIONS

Emission factors were developed from the following models:

On-Road Vehicles: MOVES 2010b, revised January 2013

Non-Road Equipment: NONROAD2008a, July 2009

In addition to the overall project size dimensions (e.g., Length and width) provided by the user, an additional 10 ft length and 10 ft width is added to account for disturbance areas.

The number of employees is based on the higher of two methods: (1) number of equipment, and (2) multiply the project cost in million by 11.

The average employee travels 30 miles round-trip from home to construction site each day.

The average on-road material delivery round-trip distance per truck is 40 miles per day.

For calculating fugitive, re-entrained PM emissions from on-road and non-road material delivery and handling equipment, a nominal VMT of 5 miles is used for each vehicle per day.

In deriving emission factors from NONROAD, the horsepower for each equipment represents the most popular in each equipment category.

The total length of each modeled scenario is used to define the number of days associated with vehicle/equipment evaporative emissions.

The choice of location and season are assumed to adequately represent differences in fuel characteristics affecting emissions.

Only two seasons (Summer and Winter) are used to represent all seasons.

14 U.S. Counties are used to represent all other counties in the U.S. (all other counties are mapped to the 14).

The default methods assume that all construction equipment use diesel as well as heavy-duty on-road vehicles, while passenger vehicles (including motorcycles) use gasoline.

Fugitive emissions are only modeled for:

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Asphalt storage and batching

Concrete mixing/batching
Soil handling
Unstabilized land and wind erosion
Material movement (unpaved roads)
Material movement (paved roads)

On-Road vehicle speeds are not explicitly modeled. The associated emission factors for each modeled vehicle from MOVES represent averages over the driving cycles, the roadway type, and daily temperature variations.

The default equipment hours-of-use data are developed based on the overall size of the project provided by the user and activity rates based on expert engineering judgment.

Under the Construction Activity Type list (Activity Tab), when a choice between asphalt and concrete materials occurs, asphalt is always selected as default. To choose concrete, de-select the aphalt item and select the corresponding concrete item.

Two trips per day were assumed for each on-road material handling trucks.

Only CO2, CH4, and N2O are used to represent greenhouse gas emissions. Other potential greenhouse gases including air conditioning refrigerants were not included.

The following equipment are always modeled using diesel emission factors since gasoline-based emission factors are not available:
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Bulldozer
Concrete Ready Mix Trucks
Concrete Ready Trucks Mix for Cores
Concrete Truck
Crack Filler (Trailer Mounted)
Delivery of Tanks (3)
Distributing Tanker
Dozer
Dump Truck
Dump Truck (12 cy)
Excavator
Excavator for U/G Services/Tanks
Flat Bed or Dump Trucks
Flatbed Truck
Grader
Grout Wheel Truck
Hoist Equipment with 40 Ton Rig
Hydralic Hammer
Hydroseeder
Line Painting Truck and Sprayer
Material Deliveries
Off-Road Truck
Pickup Truck
Scraper
Seed Truck Spreader
Small Dozer
Survey Crew Trucks
Ten Wheelers
Ten Wheelers- Material Delivery
Tool Truck
Tractor Trailer- Equipment Delivery
Tractor Trailer- Material Delivery
Tractor Trailer- Steel Deliveries
Tractor Trailer- Stone Delivery
Tractor Trailer- Topsoil & Seed
Tractor Trailer- Truck Delivery
Tractor Trailer with Boom Hoist- Curbs Del & Place
Tractor Trailer with Boom Hoist- Delivery
Tractor Trailers- Rebar Deliveries
Tractor Trailers Temp Fac.
Truck for Topsoil & Seed Del&Spread
Water Truck
Excavator with Bucket
Excavator with Hoe Ram

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APPENDIX B
MODELED GHG EMISSIONS BY AIRCRAFT TYPES, 2018 AND 2037

Table B-1. Modeled GHG Emissions by Aircraft Types, 2018
Mineta San Jose International Airport
San Jose, California

Aircraft Name[1]	Category	2018 Annual Emissions Below Mixing Height[2] (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
Bombardier Challenger 600 1TL001 NONE	Business	1,346	0	0.041	1,358
Bombardier Global 5000 Business 4BR009 NONE	Business	346	0	0.011	349
Bombardier Global Express 4BR009 NONE	Business	897	0	0.028	905
Bombardier Learjet 25 CJ6106 NONE	Business	22	0	6.6E-04	22
Bombardier Learjet 35A/36A (C-21A) TFE731 NONE	Business	218	0	0.0067	220
Cessna 500 Citation I 1PW036 NONE	Business	369	0	0.011	372
Cessna 525 CitationJet 10PW099 NONE	Business	201	0	0.0062	203
Cessna 550 Citation II PW530 NONE	Business	444	0	0.014	448
Cessna 560 Citation V PW530 NONE	Business	140	0	0.0043	141
Cessna 560 Citation XLS BIZMEDIUMJET_F NONE	Business	677	0	0.021	684
Cessna 650 Citation III 1AS002 NONE	Business	27	0	8.4E-04	27
Cessna 680 Citation Sovereign BIZMEDIUMJET_F NONE	Business	460	0	0.014	464
Cessna 750 Citation X 6AL024 NONE	Business	2,159	0	0.066	2,179
CESSNA CITATION 510 PW615F NONE	Business	114	0	0.0035	115
Dassault Falcon 20-D CF700D NONE	Business	6.4	0	2.0E-04	6.5
Eclipse 500 / PW610F PW610F-A NONE	Business	3.0	0	9.1E-05	3.0
Gulfstream G550 3BR001 NONE	Business	1,511	0	0.046	1,524
Gulfstream II MK511 NONE	Business	40	0	0.0012	40
Gulfstream II-B 1RR016 NONE	Business	64	0	0.0020	64
Gulfstream IV-SP 1RR019 NONE	Business	1,839	0	0.057	1,856
Israel IAI-1125 Astra 1AS002 NONE	Business	68	0	0.0021	69
Mitsubishi MU-300 Diamond 1PW037 NONE	Business	56	0	0.0017	57
Pre-Release of G650ER ANP	Business	567	0	0.017	572
Airbus A300F4-600 Series 1PW056 NONE	Commercial	879	0	0.027	888
Airbus A319-100 Series 3IA006 SOP	Commercial	5,422	0	0.17	5,472
Airbus A320-200 Series 1CM008 NONE	Commercial	8,869	0	0.27	8,950
Airbus A321-200 Series 1IA005 NONE	Commercial	825	0	0.025	833
Airbus A330-200 Series	Commercial	0	0	0	0
Airbus A330-300 Series 1GE033 NONE	Commercial	735	0	0.023	742
Airbus A340-200 Series 1CM010 NONE	Commercial	931	0	0.029	939
Airbus A340-600 Series 8RR045 NONE	Commercial	57	0	0.0018	58
Airbus A350-900 series	Commercial	0	0	0	0
B787-8R 2GE048 NONE	Commercial	3,812	0	0.12	3,847
Boeing 717-200 Series 4BR007 NONE	Commercial	1,648	0	0.051	1,663
Boeing 727-200 Series 1PW011 NONE	Commercial	34	0	0.0010	34
Boeing 737-400 Series 1CM006 TFAP	Commercial	56	0	0.0017	56
Boeing 737-500 Series 1CM006 TFAP	Commercial	74	0	0.0023	75
Boeing 737-700 Series 3CM032 NONE	Commercial	44,590	0	1.4	44,999
Boeing 737-800 MAX 17CM083 NONE	Commercial	853	0	0.026	861
Boeing 737-800 Series 4CM042 NONE	Commercial	31,444	0	1.0	31,732
Boeing 747-400 Series Freighter	Commercial	0	0	0	0
Boeing 757-200 Series 1PW039 NONE	Commercial	260	0	0.0080	263
Boeing 757-300 Series 5RR039 B	Commercial	45	0	0.0014	46
Boeing 767-200 Series 2GE039 NONE	Commercial	15	0	4.6E-04	15
Boeing 767-300 Series 1PW043 NONE	Commercial	4,359	0	0.13	4,398
Boeing 767-400 ER 2GE055 NONE	Commercial	39	0	0.0012	40

Table B-1. Modeled GHG Emissions by Aircraft Types, 2018
Mineta San Jose International Airport
San Jose, California

Aircraft Name[1]	Category	2018 Annual Emissions Below Mixing Height[2] (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
Boeing 777-200-ER 6GE090 NONE	Commercial	30	0	9.1E-04	30
Boeing 777-300 ER	Commercial	0	0	0	0
Boeing DC-8 Series 70 1CM003 NONE	Commercial	41	0	0.0013	41
Boeing MD-10-30 3GE074 NONE	Commercial	111	0	0.0034	112
Boeing MD-83 4PW071 NONE	Commercial	24	0	7.4E-04	24
Boeing MD-90 1IA004 NONE	Commercial	413	0	0.013	416
Bombardier CRJ-700-LR 8GE110 NONE	Commuter	958	0	0.029	967
Bombardier CRJ-900 8GE107 NONE	Commuter	1,173	0	0.036	1,184
Bombardier de Havilland Dash 8 Q400 PW123 NONE	Commuter	481	0	0.015	485
Embraer ERJ145 6AL008 NONE	Commuter	2,416	0	0.074	2,438
Embraer ERJ175 8GE108 NONE	Commuter	14,048	0	0.43	14,176
Embraer ERJ190 10GE132 NONE	Commuter	13	0	4.1E-04	14
1985 1-ENG COMP TIO540 NONE	General Aviation-Piston	177	0.15	0.0023	182
Boeing DC-3 R1820 R1820-86	General Aviation-Piston	4.2	0.0035	5.5E-05	4.3
Boeing DC-6 R1820 R-2800-CB17	General Aviation-Piston	9.2	0.0078	1.2E-04	9.4
Cessna 172 Skyhawk TSIO36 IO-360-L2A	General Aviation-Piston	15	0.013	2.0E-04	15
Cessna 182 IO360 NONE	General Aviation-Piston	8.3	0.0071	1.1E-04	8.5
Cessna 206 TIO540 IO-540-AC	General Aviation-Piston	5.8	0.0049	7.7E-05	5.9
Cessna 206 TIO540 TIO-540-AJ1A	General Aviation-Piston	11	0.010	1.5E-04	12
EADS Socata TB-9 Tampico IO320 NONE	General Aviation-Piston	30	0.026	4.0E-04	31
Piper PA-24 Comanche TIO540 NONE	General Aviation-Piston	52	0.044	6.9E-04	54
Piper PA-28 Cherokee Series IO320 O-320-D3G	General Aviation-Piston	1.2	0.0011	1.7E-05	1.3
Piper PA-30 Twin Comanche IO320 NONE	General Aviation-Piston	1.4	0.0012	1.9E-05	1.4
Raytheon Beech Baron 58 TIO540 NONE	General Aviation-Piston	124	0.11	0.0016	127
Cessna 208 Caravan PT6A14 NONE	General Aviation-Turbo	185	0	0.0057	186
Cessna 441 Conquest II TPE8 NONE	General Aviation-Turbo	183	0	0.0056	185
DeHavilland DHC-6-200 Twin Otter PT6A27 NONE	General Aviation-Turbo	544	0	0.017	549
Piper PA-42 Cheyenne Series PT6A41 NONE	General Aviation-Turbo	18	0	5.5E-04	18
A109	Helicopter	10	0.0082	1.3E-04	10
B206L	Helicopter	6.9	0.0058	9.1E-05	7.0
Bell 206L-4T Long Ranger 250B17 NONE	Helicopter	1.2	0.0010	1.6E-05	1.2
Bell 407 / Rolls-Royce 250-C47B 250B17 NONE	Helicopter	1.8	0.0015	2.4E-05	1.8
Bell 430 250B17 NONE	Helicopter	1.6	0.0014	2.1E-05	1.7
EC130	Helicopter	86	0.073	0.0011	89
R22	Helicopter	4.6	0.0039	6.1E-05	4.7
R44	Helicopter	4.7	0.0040	6.2E-05	4.8
SA350D	Helicopter	10	0.0082	1.3E-04	10
C-130E	Military	10	0	3.1E-04	10
C130HP	Military	10	0	2.9E-04	10
F15A	Military	13	0	4.0E-04	13
F-18	Military	30	0	9.2E-04	30
F5E	Military	6.4	0	2.0E-04	6.4
S61	Military	5.7	0	1.8E-04	5.8
SA341G	Military	6.5	0	2.0E-04	6.5
Sikorsky S-76 Spirit T70070 NONE	Military	4.7	0	1.4E-04	4.7

Notes:

[1] Aircraft name shown is consistent with the aircraft name provided in AEDT.

[2] AEDT estimates CO_2 emissions only. CH_4 and N_2O emissions were estimated based on EPA Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

Abbreviations:

AEDT - Aviation Environmental Design Tool
CH_4 - methane
CO_2 - carbon dioxide
EPA - US Environmental Protection Agency
MT/yr - metric tons per year
N_2O - nitrogen dioxide

Table B-2. Modeled GHG Emissions by Aircraft Types, 2037
Mineta San Jose International Airport
San Jose, California

Aircraft Name[1]	Category	2037 Annual Emissions Below Mixing Height[2] (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
Bombardier Challenger 600 1TL001 NONE	Business	1,310	0	0.040	1,322
Bombardier Global 5000 Business 4BR009 NONE	Business	499	0	0.015	504
Bombardier Global Express 4BR009 NONE	Business	1,616	0	0.050	1,631
Bombardier Learjet 25 CJ6106 NONE	Business	0	0	0	0
Bombardier Learjet 35A/36A (C-21A) TFE731 NONE	Business	271	0	0.0083	274
Cessna 500 Citation I 1PW036 NONE	Business	50	0	0.0015	51
Cessna 525 CitationJet 10PW099 NONE	Business	705	0	0.022	712
Cessna 550 Citation II PW530 NONE	Business	517	0	0.016	522
Cessna 560 Citation V PW530 NONE	Business	103	0	0.0032	104
Cessna 560 Citation XLS BIZMEDIUMJET_F NONE	Business	1,021	0	0.031	1,030
Cessna 650 Citation III 1AS002 NONE	Business	27	0	8.4E-04	27
Cessna 680 Citation Sovereign BIZMEDIUMJET_F NONE	Business	599	0	0.018	605
Cessna 750 Citation X 6AL024 NONE	Business	3,867	0	0.12	3,902
CESSNA CITATION 510 PW615F NONE	Business	139	0	0.0043	140
Dassault Falcon 20-D CF700D NONE	Business	0	0	0	0
Eclipse 500 / PW610F PW610F-A NONE	Business	11	0	3.5E-04	12
Gulfstream G550 3BR001 NONE	Business	2,159	0	0.066	2,179
Gulfstream II MK511 NONE	Business	0	0	0	0
Gulfstream II-B 1RR016 NONE	Business	0	0	0	0
Gulfstream IV-SP 1RR019 NONE	Business	1,079	0	0.033	1,089
Israel IAI-1125 Astra 1AS002 NONE	Business	177	0	0.0054	179
Mitsubishi MU-300 Diamond 1PW037 NONE	Business	66	0	0.0020	67
Pre-Release of G650ER ANP	Business	644	0	0.020	650
Airbus A300F4-600 Series 1PW056 NONE	Commercial	0	0	0	0
Airbus A319-100 Series 3IA006 SOP	Commercial	19,736	0	0.61	19,917
Airbus A320-200 Series 1CM008 NONE	Commercial	4,878	0	0.15	4,923
Airbus A321-200 Series 1IA005 NONE	Commercial	15,523	0	0.48	15,665
Airbus A330-200 Series	Commercial	3,728	0	0.11	3,762
Airbus A330-300 Series 1GE033 NONE	Commercial	0	0	0	0
Airbus A340-200 Series 1CM010 NONE	Commercial	0	0	0	0
Airbus A340-600 Series 8RR045 NONE	Commercial	0	0	0	0
Airbus A350-900 series	Commercial	3,428	0	0.11	3,459
B787-8R 2GE048 NONE	Commercial	4,765	0	0.15	4,809
Boeing 717-200 Series 4BR007 NONE	Commercial	0	0	0	0
Boeing 727-200 Series 1PW011 NONE	Commercial	0	0	0	0
Boeing 737-400 Series 1CM006 TFAP	Commercial	0	0	0	0
Boeing 737-500 Series 1CM006 TFAP	Commercial	0	0	0	0
Boeing 737-700 Series 3CM032 NONE	Commercial	9,886	0	0.30	9,976
Boeing 737-800 MAX 17CM083 NONE	Commercial	140,612	0	4.3	141,901
Boeing 737-800 Series 4CM042 NONE	Commercial	33,360	0	1.0	33,666
Boeing 747-400 Series Freighter	Commercial	29	0	9.0E-04	30
Boeing 757-200 Series 1PW039 NONE	Commercial	5.4	0	1.7E-04	5.5
Boeing 757-300 Series 5RR039 B	Commercial	6.8	0	2.1E-04	6.9
Boeing 767-200 Series 2GE039 NONE	Commercial	0	0	0	0
Boeing 767-300 Series 1PW043 NONE	Commercial	3,059	0	0.094	3,087
Boeing 767-400 ER 2GE055 NONE	Commercial	79	0	0.0024	80
Boeing 777-200-ER 6GE090 NONE	Commercial	164	0	0.0051	166
Boeing 777-300 ER	Commercial	2,978	0	0.092	3,006
Boeing DC-8 Series 70 1CM003 NONE	Commercial	0	0	0	0
Boeing MD-10-30 3GE074 NONE	Commercial	0	0	0	0
Boeing MD-83 4PW071 NONE	Commercial	0	0	0	0
Boeing MD-90 1IA004 NONE	Commercial	0	0	0	0
Bombardier CRJ-700-LR 8GE110 NONE	Commuter	0	0	0	0
Bombardier CRJ-900 8GE107 NONE	Commuter	18	0	5.5E-04	18
Bombardier de Havilland Dash 8 Q400 PW123 NONE	Commuter	68	0	0.0021	68
Embraer ERJ145 6AL008 NONE	Commuter	1,364	0	0.042	1,376
Embraer ERJ175 8GE108 NONE	Commuter	9,319	0	0.29	9,404

Table B-2. Modeled GHG Emissions by Aircraft Types, 2037
Mineta San Jose International Airport
San Jose, California

Aircraft Name[1]	Category	2037 Annual Emissions Below Mixing Height[2] (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
Embraer ERJ190 10GE132 NONE	Commuter	23	0	7.1E-04	23
1985 1-ENG COMP TIO540 NONE	General Aviation-Piston	48	0.041	6.3E-04	49
Boeing DC-3 R1820 R1820-86	General Aviation-Piston	0	0	0	0
Boeing DC-6 R1820 R-2800-CB17	General Aviation-Piston	0	0	0	0
Cessna 172 Skyhawk TSIO36 IO-360-L2A	General Aviation-Piston	10	0.0084	1.3E-04	10
Cessna 182 IO360 NONE	General Aviation-Piston	8.3	0.0071	1.1E-04	8.5
Cessna 206 TIO540 IO-540-AC	General Aviation-Piston	10	0.0083	1.3E-04	10
Cessna 206 TIO540 TIO-540-AJ1A	General Aviation-Piston	7.6	0.0065	1.0E-04	7.8
EADS Socata TB-9 Tampico IO320 NONE	General Aviation-Piston	13	0.011	1.7E-04	13
Piper PA-24 Comanche TIO540 NONE	General Aviation-Piston	33	0.028	4.4E-04	34
Piper PA-28 Cherokee Series IO320 O-320-D3G	General Aviation-Piston	1.2	0.0011	1.7E-05	1.3
Piper PA-30 Twin Comanche IO320 NONE	General Aviation-Piston	1.4	0.0012	1.9E-05	1.4
Raytheon Beech Baron 58 TIO540 NONE	General Aviation-Piston	43	0.036	5.7E-04	44
Cessna 208 Caravan PT6A14 NONE	General Aviation-Turbo	76	0	0.0023	76
Cessna 441 Conquest II TPE8 NONE	General Aviation-Turbo	20	0	6.2E-04	20
DeHavilland DHC-6-200 Twin Otter PT6A27 NONE	General Aviation-Turbo	197	0	0.0060	198
Piper PA-42 Cheyenne Series PT6A41 NONE	General Aviation-Turbo	11	0	3.5E-04	11
A109	Helicopter	5.3	0.0045	7.0E-05	5.4
B206L	Helicopter	2.1	0.0018	2.8E-05	2.2
Bell 206L-4T Long Ranger 250B17 NONE	Helicopter	1.2	0.0010	1.6E-05	1.2
Bell 407 / Rolls-Royce 250-C47B 250B17 NONE	Helicopter	0	0	0	0
Bell 430 250B17 NONE	Helicopter	0	0	0	0
EC130	Helicopter	27	0.023	3.6E-04	28
R22	Helicopter	1.4	0.0012	1.9E-05	1.5
R44	Helicopter	1.5	0.0012	1.9E-05	1.5
SA350D	Helicopter	0	0	0	0
C-130E	Military	25	0	7.8E-04	26
C130HP	Military	24	0	7.5E-04	25
F15A	Military	13	0	4.0E-04	13
F-18	Military	30	0	9.2E-04	30
F5E	Military	0	0	0	0
S61	Military	5.7	0	1.8E-04	5.8
SA341G	Military	0	0	0	0
Sikorsky S-76 Spirit T70070 NONE	Military	4.7	0	1.4E-04	4.7

Notes:
[1] Aircraft name shown is consistent with the aircraft name provided in AEDT.

[2] AEDT estimates CO_2 emissions only. CH_4 and N_2O emissions were estimated based on EPA Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

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