Climate Change Technical Report

for the East San Fernando Valley Transit Corridor

May 2017

Metro

Prepared by the
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Acronyms and Abbreviations

AA	Alternatives Analysis
AB	Assembly Bill
ADA	Americans with Disabilities Act
BRT	bus rapid transit
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DEIR	draft environmental impact report
DEIS	draft environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HCFCs	hydrochlorofluorocarbons
HFCs	hydrofluorocarbons
I	Interstate
IPCC	Intergovernmental Panel on Climate Change
LRT	light rail transit
LRTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MMT	million metric tons
MPO	Metropolitan Planning Organization
MSF	maintenance and storage facility
MT	metric tons
N_2O	nitrous oxide

NEPA	National Environmental Policy Act
OCS	overhead contact system
OPR	Office of Planning and Research
PFCs	perfluorocarbons
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF_6	sulfur hexafluoride
SR	State Route
TOD	transit-oriented development
TPSS	traction power substations
TSM	Transportation Systems Management
VMT	vehicle miles traveled

Chapter 1
Introduction

1.1 Study Background

What Is the East San Fernando Valley Transit Corridor?

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a draft environmental impact statement (DEIS)/draft environmental impact report (DEIR) for the East San Fernando Valley Transit Corridor Project. The DEIS/DEIR is being prepared with the FTA as the lead agency under the National Environmental Policy Act (NEPA) and Metro as the lead agency under the California Environmental Quality Act (CEQA).

The DEIS/DEIR and related engineering are being undertaken by Metro, in close coordination with the Cities of Los Angeles and San Fernando. The DEIS/DEIR will be a combined document, complying with the most recent state and federal environmental laws. The project's public/community outreach component is being undertaken as an integrated parallel effort to the DEIS/DEIR.

Prior to the initiation of the DEIS/DEIR, an Alternatives Analysis (AA) was received by the Metro Board in January 2013 to study the East San Fernando Valley Transit Corridor and define, screen, and recommend alternatives for future study. This study enabled Metro, the City of Los Angeles, and the City of San Fernando to evaluate a range of new public transit service alternatives that can accommodate future population growth and transit demand while being compatible with existing land uses and future development opportunities. The study considered the Sepulveda Pass Corridor, which is another Measure R project, and the proposed California High Speed Rail Project. Both of these projects may be directly served by a future transit project in the project study area. The Sepulveda Pass Corridor could eventually link the west Los Angeles area to the eastern San Fernando Valley and the California High Speed Rail Project via the project corridor. As part of the January 2013 AA, most of Sepulveda Boulevard was eliminated as an alignment option, as was the alignment extending to Lakeveiw Terrace. As a result of the AA, the modal recommendations were for bus rapid transit (BRT) and light rail transit (LRT).

As a result of the alternatives screening process and feedback received during the public scoping period, a curb-running BRT, median-running BRT, median-running low-floor LRT/tram, and a median-running LRT were identified as the four build alternatives, along with the Transportation Systems Management (TSM) and No-Build Alternatives, to be carried forward for analysis in this DEIS/DEIR.

1.1.1 Study Area

Where Is the Study Area Located?

The East San Fernando Valley Transit Corridor project study area is located in the San Fernando Valley in the County of Los Angeles. Generally, the project study area extends from the City of San Fernando and the Sylmar/San Fernando Metrolink station in the north to the Van Nuys Metro Orange Line station in the City of Los Angeles in the south. However, the project study area used

for the environmental issue described in this report could vary from this general project study area, depending on the needs of the analysis. For the purposes of the analysis contained in this report, the project study area coincides with the general project study area.

The eastern San Fernando Valley includes two major north/south arterial roadways, Sepulveda and Van Nuys Boulevards, spanning approximately 10 to 12 miles, and a major north/west arterial roadway, San Fernando Road.

Several freeways traverse or border the eastern San Fernando Valley. These include the Ventura Freeway (US-101), the San Diego Freeway (Interstate [I] 405), the Golden State Freeway (I-5), the Ronald Reagan Freeway (State Route [SR] 118), and the Foothill Freeway (I-210). The Hollywood Freeway (SR-170) is located east of the project study area. In addition to Metro Local and Metro Rapid bus service, the Metro Orange Line (Orange Line) BRT service, the Metrolink Ventura Line commuter rail service, Amtrak inter-city rail service, and the Metrolink Antelope Valley Line commuter rail service are the major transit services that provide interregional trips in the project study area.

Land uses in the project study area include neighborhood and regional commercial land uses as well as government and residential land uses. Specifically, land uses in the project study area include government services at the Van Nuys Civic Center, retail shopping along the project corridor, and medium- to high-density residential uses throughout the project study area. Notable land uses in the eastern San Fernando Valley include The Village at Sherman Oaks, Panorama Mall, Whiteman Airport, Van Nuys Airport, Mission Community Hospital, Kaiser Permanente Hospital, Van Nuys Auto Row, and several schools, youth centers, and recreational centers.

1.1.2 Alternatives Considered

What Alternatives Are under Consideration?

The following six alternatives, including four build alternatives, a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative;
- TSM Alternative;
- Build Alternative 1 – Curb-Running BRT Alternative;
- Build Alternative 2 – Median-Running BRT Alternative;
- Build Alternative 3 – Low-Floor LRT/Tram Alternative; and
- Build Alternative 4 –LRT Alternative.

All build alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south, with the exception of Build Alternative 4, which includes a 2.5-mile segment within a Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of Panorama City and Van Nuys.

1.1.2.1 No-Build Alternative

The No-Build Alternative represents projected conditions in 2040 without implementation of the project. No new transportation infrastructure would be built within the project study area, aside from projects that are currently under construction or funded for construction and operation by 2040.

These projects include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No-Build Alternative include:

- Existing Freeways – I-5, and I=105, SR-118, and US-101;
- Existing Transitway – Metro Orange Line;
- Existing Bus Service – Metro Rapid and Metro Local Shuttle;
- Los Angeles Department of Transportation Commuter Express and DASH;
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities; and
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid bus system, upgrades to the Metrolink system, and the proposed California High Speed Rail Project.

This alternative establishes a baseline for comparison with other alternatives in terms of potential environmental effects, including adverse and beneficial environmental effects.

1.1.2.2 TSM Alternative

The TSM Alternative enhances the No-Build Alternative and emphasizes transportation system upgrades, which may include relatively low-cost transit service improvements. It represents efficient and feasible improvements to transit service, such as increased bus frequencies and minor modifications to the roadway network. Additional TSM Alternative transit improvements that may be considered include, but are not limited to, traffic signalization improvements, bus stop amenities/improvements, and bus schedule restructuring (Figure 1-1).

The TSM Alternative considers the existing bus network, enhanced operating hours, and increased bus frequencies for Metro Rapid Line 761 and Local Line 233. Under this alternative, the Metro Rapid Line 761 and Metro Local Line 233 bus routes would retain the existing stop locations. This alternative would add 20 additional buses to the existing Metro Local 233 and Metro Rapid 761 bus routes. These buses would be similar to the existing Metro 60-foot articulated buses, and each bus would have the capacity to serve up to 75 passengers (57 seats x 1.30 passenger loading standard). Buses would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

The existing Metro Division 15 maintenance and storage facility (MSF) located in Sun Valley would be able to accommodate the 20 additional buses with implementation of the TSM Alternative. Operational changes would include reduced headway (elapsed time between buses) times for Metro Rapid Line 761 and Metro Local Line 233, as follows:

- Metro Rapid Line 761 would operate with headways reduced from 10 minutes to 8 minutes during peak hours (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m. on weekdays) and from 17.5 minutes to 12 minutes during off-peak hours.
- Metro Local Line 233 would operate with headways reduced from 12 minutes to 8 minutes during peak hours and from 20 minutes to 16 minutes during off-peak hours.

Figure 1-1: TSM Alternative

Source: STV, 2014.

1.1.2.3 Build Alternative 1 – Curb-Running BRT Alternative

Under the Curb-Running BRT Alternative, the BRT guideway would incorporate 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would be similar to the Metro Wilshire BRT Project. The lanes would be dedicated curb-running bus lanes for Metro Rapid Line 761 and Metro Local Line 233 as well as for other transit lines that operate on short segments of Van Nuys Boulevard. In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue (Metro Line 761). Metro Line 233 would continue north on Van Nuys Boulevard to Lakeview Terrace. These improvements would result in an improved Metro Rapid Line 761 (hereafter referred to as 761X) and an improved Metro Local Line 233 (hereafter referred to as 233X). The route of the Curb-Running BRT Alternative is illustrated in Figure 1-2.

From the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within roadway travel lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, Metro Rapid Line 761X would turn southwest and travel south within a curb-running dedicated bus lane along Van Nuys Boulevard.
- The alternative would continue to be curb running along Van Nuys Boulevard until reaching the Metro Orange Line Van Nuys station where Metro Rapid Line 761X service would be integrated into mixed-flow traffic.
- Metro Line 761X would then continue south to Westwood as under existing conditions, though it should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233X would operate similar to how it currently operates between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. However, Metro Local Line 233X would operate with improvements over existing service because it would utilize the BRT guideway where its route overlaps with the guideway along Van Nuys Boulevard.

Transit service would not be confined to only the dedicated curb lanes. Buses would still have the option to operate within the remaining mixed-flow lanes to bypass right-turning vehicles, a bicyclist, or another bus at a bus stop.

The Curb-Running BRT Alternative would operate in dedicated bus lanes, sharing the lanes with bicycles and right-turning vehicles. However, on San Fernando Road and Truman Street, no dedicated bus lanes would be provided. The Curb-Running BRT Alternative would include 18 bus stops.

Figure 1-2: Build Alternative 1 – Curb-Running BRT Alternative

Source: KOA and ICF International, 2014.

1.1.2.4 Build Alternative 2 – Median-Running BRT Alternative

The Median-Running BRT Alternative would consist of approximately 6.7 miles of dedicated median-running bus lanes between San Fernando Road and the Metro Orange Line and have operational standards similar to the Metro Orange Line. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink station and San Fernando Road/Van Nuys Boulevard. The Median-Running BRT Alternative is illustrated in Figure 1-3.

Similar to the Curb-Running BRT Alternative, the Median-Running BRT (Metro Rapid Line 761X) would operate as follows from the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within mixed-flow lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, the route would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- Upon reaching the Van Nuys Metro Orange Line station, the dedicated guideway would end and the Metro Rapid Line 761X service would then be integrated into mixed-flow traffic.
- The route would then continue south to Westwood, similar to the existing route. Similar to Build Alternative 1, it should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233 would operate similar to existing conditions between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. Metro Rapid bus stops that currently serve the 794 and 734 lines on the northern part of the alignment along Truman Street and San Fernando Road would be upgraded and have design enhancements that would be Americans with Disabilities Act (ADA) compliant. These stops would also serve the redirected 761X line:

1. Sylmar/San Fernando Metrolink Station;
2. Hubbard Station;
3. Maclay Station;
4. Paxton Station; and
5. Van Nuys/San Fernando Station.

Along the Van Nuys Boulevard segment, bus stop platforms would be constructed in the median. Seventeen new median bus stops would be included.

Figure 1-3: Build Alternative 2 – Median-Running BRT Alternative

Source: KOA and ICF International, 2014.

1.1.2.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

The Low-Floor LRT/Tram Alternative would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south. The Low-Floor LRT/Tram Alternative would operate in a dedicated median guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The low-floor LRT/tram alternative would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate in a dedicated median guideway. It would include 28 stations. The route of the Low-Floor LRT/Tram Alternative is illustrated in Figure 1-4.

The Low-Floor LRT/Tram Alternative would operate along the following route:

- From the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate within a dedicated median guideway on San Fernando Road.
- At Wolfskill Street, the low-floor LRT/tram would operate within mixed-flow travel lanes on San Fernando Road to Van Nuys Boulevard.
- At Van Nuys Boulevard, the low-floor LRT/tram would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- The low-floor LRT/tram would continue to operate in the median along Van Nuys Boulevard until reaching its terminus at the Van Nuys Metro Orange Line station.

Based on Metro's Operations Plan for the East San Fernando Valley Transit Corridor Project, the Low-Floor LRT/Tram Alternative would assume a travel speed similar to that of the Median-Running BRT Alternative, with speed improvements of 18 percent during peak hours/peak direction and 15 percent during off-peak hours.

The Low-Floor LRT/Tram Alternative would operate using low-floor articulated vehicles that would be electrically powered by overhead wires. This alternative would include supporting facilities, such as an overhead contact system (OCS), traction power substations (TPSS), signaling devices, and an MSF.

Because the Low-Floor LRT/Tram Alternative would fulfill the current functions of the existing Metro Rapid Line 761 and Metro Local Line 233, these bus routes would be modified to maintain service only to areas outside of the project corridor. Thus, Metro Rapid Line 761 (referred to as 761S with reduced service) would operate only between the Metro Orange Line and Westwood, and Metro Local Line 233 (referred to as 233S with reduced service) would operate only between San Fernando Road and Glenoaks Boulevard. It should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Stations for the Low-Floor LRT/Tram Alternative would be constructed at various intervals along the route. There are portions of the route where stations would be closer together and other portions where they would be farther apart. Twenty-eight stations are proposed with the Low-Floor LRT/Tram Alternative. The 28 proposed low-floor LRT/tram stations would be ADA compliant.

Figure 1-4: Build Alternative 3 – Low-Floor LRT/Tram Alternative

Source: KOA and ICF International, 2014.

1.1.2.6 Build Alternative 4 – LRT Alternative

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would be powered by overhead electrical wires (Figure 1-5). Under Build Alternative 4, the LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink station along San Fernando Road south to Van Nuys Boulevard and from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. The LRT Alternative includes a segment in an exclusive right-of-way in the Antelope Valley Metrolink railroad corridor, a segment within a semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

The LRT Alternative would be similar to other street-running LRT lines that currently operate in the Los Angeles area, such as the Metro Blue Line, Metro Gold Line, and Metro Exposition Line. The LRT Alternative would travel along the median for most of the route, with a subway of approximately 2.5 miles in length between Vanowen Street and Nordhoff Street. On the surface-running segment, the LRT Alternative would operate at prevailing traffic speeds and be controlled by standard traffic signals.

Stations would be constructed at approximately 1-mile intervals along the entire route. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. The entry portals would provide access to stairs, escalators, and elevators that would lead to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would require a number of additional elements to support vehicle operations, including an OCS, TPSS, communications and signaling buildings, and an MSF.

Figure 1-5: Build Alternative 4 – LRT Alternative

Source: KOA and ICF International, 2014.

Chapter 2
Regulatory Framework/Methodology

2.1 Regulatory Framework

2.1.1 Federal Regulations

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases (GHGs) are air pollutants and covered by the Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions. The court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The EPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the health and welfare of current and future generations.
- **Cause or Contribute Finding:** The EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

Although climate change and GHG emissions are concerns at the federal level, no regulations or laws have been enacted to address GHG emissions and climate change specifically at the project level. Neither EPA nor FTA has promulgated explicit guidance or methodology for conducting project-level GHG analysis; however, FTA works with public transportation providers and other key stakeholders to implement strategies to reduce GHG emissions from the transportation sector. FTA's grants, technical assistance, research, and policy leadership all play a role in the agency's efforts to address climate change.[1]

Climate change and its associated effects are also being addressed through various efforts at the federal level, which are designed to improve fuel economy and energy efficiency. These efforts include the National Clean Car Program; Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance; and the Council on Environmental Quality's Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews.

Executive Order 13514, which is focused on reducing GHGs internally through federal programs and operations, directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force. The task force is engaged in developing a national strategy for adaptation to climate change.

[1] Federal Transit Administration. 2010. *Climate Change Flyer*. Available: <http://www.fta.dot.gov/documents/Flyer_ClimateChange_2010.pdf>.

2.1.2 State Regulations

With the passage of several pieces of legislation, including Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with GHG emissions and climate change. A summary of key legislation is provided below.

Executive Order (EO) S-3-05: The goal of this EO is to reduce California's GHG emissions to 1) 2000 levels by 2010, 2) 1990 levels by 2020, and 3) 80% below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

EO S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

EO B-30-15: Signed on April 29, 2015, this order set a goal of achieving GHG emission levels of 40% below 1990 levels by 2030. The 40% below 1990 target was established as an interim goal for the state to achieve in advance of AB 32's emissions target of 80% below 1990 levels by 2050.

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05 while further mandating that the California Air Resources Board (CARB) create a scoping plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

AB 1493, Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Senate Bill (SB) 97: Required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions (OPR 2008). The amendments became effective on March 18, 2010.

SB 375, Sustainable Communities and Climate Protection Act of 2008: Directed CARB to set regional targets for reducing GHG emissions. The new law establishes a "bottom up" approach to ensure that Cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

SB 391, Chapter 585, 2009 California Transportation Plan: This bill requires the state's long-range transportation plan to meet California's climate change goals under AB 32.

SB 32, Global Warming Solutions Act: SB 32 extends and strengthens AB 32's GHG emissions reduction goals and requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030.

2.1.3 Local Regulations

2.1.3.1 Southern California Association of Governments

The passage of SB 375 gave SCAG an additional area of responsibility, providing the agency with a renewed opportunity for integrated planning for the future. The purpose of SB 375 is to implement the state's GHG emissions reduction goals for cars and light trucks. This mandate requires CARB to determine per capita GHG emission reduction targets for each Metropolitan Planning Organization

(MPO) in the state at two points in the future—2020 and 2035. For the SCAG region, CARB set the reduction goal targets at 8% below 2005 per capita emissions levels by 2020 and 13% below 2005 per capita emissions levels by 2035.

Because GHG emissions in the transportation sector are closely related to vehicle miles traveled (VMT), a mandated GHG reduction essentially requires SCAG to devise a regional plan and a series of strategies that will produce a per capita reduction in VMT over the next 25 years. Full implementation of the SCAG 2016–2040 RTP/SCS would achieve per capita GHG emissions reductions of 8% in 2020 and 18% in 2035, surpassing the reduction targets of 8% and 13% for 2020 and 2035, respectively. Improved access and mobility, including increasing public transit capacity, are among the goals and potential benefits of implementation of the SCS portion of the 2016–2040 RTP/SCS (p.113).

2.1.3.2 South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) is responsible for comprehensive air pollution control in the greater Los Angeles area. To provide GHG emissions guidance to local jurisdictions within the South Coast Air Basin, SCAQMD has organized a working group to develop GHG emissions analysis guidance and thresholds and released an interim GHG significance threshold for stationary sources (i.e., industrial projects) where SCAQMD is lead agency. At present, SCAQMD offers no regulations or thresholds for non-SCAQMD lead agency projects.

2.1.3.3 City of Los Angeles

The City of Los Angeles released its climate action plan, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, in May 2007. The plan sets forth a goal of reducing City GHG emissions to 35% below 1990 levels by 2030, one of the most aggressive goals of any big city in the United States. This voluntary plan identifies more than 50 action items, grouped into focus areas, to reduce emissions. Although the emphasis is first on municipal facilities and operations, several measures address programs to reduce emissions in the community.

ClimateLA (City of Los Angeles 2008) is the implementation program that provides detailed information about each action item discussed in the Green LA framework. Action items range from harnessing wind power for electricity production and implementing energy efficiency retrofits in City buildings to converting the City's fleet vehicles to cleaner and more-efficient models and reducing water consumption. Some actions affect only municipal facilities, such as retrofitting City Hall with high-efficiency lighting systems, while others facilitate changes in the private sector, such as rebates for the purchase of energy-efficient appliances. ClimateLA is a living document, reflecting a process of ongoing learning and continuous improvement as technology advances and City departments develop expertise in the methods for lowering GHG emissions.

The Sustainable City pLAn, introduced by Mayor Eric Garcetti in April 2015, identifies goals and strategies for improving Los Angeles' sustainability related to the environment, economy, and equity. One of the initial action steps within the pLAn is the appointment of a Chief Sustainability Officer within 18 key departments. With respect to greenhouse gases, the pLAn commits to increasing solar power generation and increasing energy efficiency. In addition, it accelerates the City's commitment to attaining GHG reductions, with the goals of reducing levels 45% by 2025, 60% by 2035, and 80% by 2050 in comparison to 1990 baseline emissions. The pLAn also puts forth the goal of improving GHG

efficiency[2] by 55% by 2025 and by 75% by 2035 relative to 2009 levels. Other targets identified in the pLAn include a 5% reduction in VMT per capita by 2025 and a 10% reduction by 2035, as well increasing the percentage of trips made by walking, biking, or transit to 35% by 2025 and 50% by 2035.

2.1.3.4 Metro

Published and approved by the Metro Board in June 2012, the Climate Action and Adaptation Plan establishes a framework to identify the areas of greatest opportunity for Metro to reduce GHG emissions and evaluates opportunities based on their costs and the volumes of emissions they reduce. Metro's influence on GHG emissions extends to all of the County's transportation systems. As a first step, the plan focuses on prioritizing the most promising opportunities to reduce emissions from Metro's internal operations by 2020. The Climate Action and Adaptation Plan identified a goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020.

Metro adopted a Green Construction Policy in August 2011 and is committed to using more sustainable construction equipment and vehicles, as well as implementing best practices, to reduce harmful diesel emissions from all Metro construction projects performed on Metro properties and in Metro rights-of-way. The Green Construction Policy encourages the use of construction equipment with technologies such as hybrid drives and specific fuel economy standards, both of which are methods to reduce GHG emissions during the construction period.

2.2 Methodology

The proposed project would generate construction-related and operational emissions. The methodology used to evaluate construction and operational effects is described below.

2.2.1 Evaluation of Construction-Period Impacts

Project construction would be a source of GHG emissions. Such emissions would result from earthmoving and the use of heavy equipment as well as land clearing, ground excavation, cut-and-fill operations, and the reconstruction of roadways. Construction-period GHG emissions are quantified by using the California Emissions Estimator Model (CalEEMod) (version 2013.2.2). CalEEMod has been approved by SCAQMD for emissions estimations within the South Coast Air Basin. Consistent with SCAQMD-recommended methodology, total construction-period emissions are amortized over a 30-year period, then added to the opening-year GHG emissions total to arrive at the annual tons per year total, which accounts for construction and operations emissions.

2.2.2 Evaluation of Operations-Period Impacts

Operations-period GHG emissions would result from transit vehicle and maintenance facility operations as well as changes in local VMT related to local traffic redistribution, changes in roadway network travel speeds, and mode-shift effects that would occur because of the proposed project.

CalEEMod was used to estimate emissions related to maintenance facility operations that would result from trips made by workers; facility energy demands related to lighting, temperature control, and water conveyance; and area sources, such as the use of consumer products, periodic application

[2] GHG efficiency is measured by the amount of GHGs emitted per dollar of economic productivity.

of architectural coatings, the use of landscaping equipment, etc., that would occur during long-term project operations. In calculating mobile-source emissions, CalEEMod relies on EMFAC2011 emissions factors and default trip generation rates and distances. Area-source emissions were compiled using CalEEMod default assumptions.

Fixed guideway transit vehicle operations emissions were calculated by applying Los Angeles Department of Water and Power carbon intensity factors to the annual estimate of system electricity demand. Propulsion and station electricity demand were established by determining the per-mile energy demand for Metro's existing LRT lines and applying that consumption rate to the proposed 9.2-mile alignment.

Emissions related to changes in local VMT and roadway network travel speeds were calculated using traffic data (VMT apportioned into 5 mph speed bins) that were derived from a micro-simulation model that captures project effects and CT-EMFAC2014 emissions factors.

Each build alternative was compared against existing conditions, which "normally constitute[s] the baseline physical conditions by which a lead agency determines whether an impact is significant" under Section 15125(a) of the State CEQA Guidelines. Because Alternative 3 would have the greatest traffic impacts, the Existing (2012) with Alternative 3 scenario presents the worst-case scenario for GHG emissions relative to any of the other "existing plus project" scenarios. Thus, to evaluate, analyze, and compare each of the alternatives, the qualitative analysis for the other build alternatives extrapolates from the quantitative analysis for the Existing (2012) with Alternative 3 scenario. In addition, the emissions of each build alternative have been evaluated against the No-Build Alternative for a future baseline (2040) analysis.

2.3 Significance Thresholds

Significance thresholds are used to determine whether a project may have a significant environmental effect. The significance thresholds, as defined by federal and state regulations, are outlined below.

2.3.1 Federal

NEPA does not include specific significance thresholds. According to the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the determination of significance under NEPA is based on context and intensity.[3] The CEQA thresholds (described below) encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Therefore, the CEQA thresholds listed below also apply to NEPA for the project and its alternatives.

The CEQA thresholds (described below) encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Therefore, the CEQA thresholds listed below also apply to NEPA for the proposed project alternatives.

[3] Code of Federal Regulations. *CEQ Regulations for Implementing NEPA, 40 Code of Federal Regulations, Part 1508, Terminology and Index*. Available: <http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm>. Accessed: February 21, 2013.

2.3.2 State

CEQA does not describe specific significance thresholds. According to OPR, significance thresholds for a given environmental effect are at the discretion of the lead agency and are the levels at which the lead agency finds the effects of the project to be significant.[4]

2.3.2.1 State CEQA Guidelines

The State CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (State CEQA Guidelines, Section 15382).

The State CEQA Guidelines do not describe specific significance thresholds. However, Appendix G of the State CEQA Guidelines lists a variety of potentially significant effects, which are often used as thresholds or guidance in developing thresholds for determining impact significance. Accordingly, for purposes of this DEIS/DEIR, a project would have a significant effect related to GHG emissions under CEQA if it would:

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

The State CEQA Guidelines also state that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations above.

Although SCAQMD has a regulatory role in the South Coast Air Basin, it has not adopted or proposed any quantitative thresholds that would be applicable to the proposed project. As such, project GHG emissions are evaluated for consistency with California's AB 32 (Global Warming Solutions Act of 2006) emissions reduction goals to determine significance.

2.3.2.2 L.A. CEQA Thresholds Guide

The City's *L.A. CEQA Threshold Guide* does not contain thresholds for climate change impacts related to GHG emissions. As such, project GHG emissions are evaluated for consistency with AB 32 emissions reduction goals to determine significance.

[4] Governor's Office of Planning and Research. 1994. *Thresholds of Significance: Criteria for Defining Environmental Significance.* September. Available: <http://ceres.ca.gov/ceqa/more/tas/Threshold.html>. Accessed: February 21, 2013.

Chapter 3
Affected Environment/Existing Conditions

3.1 Description of Relevant Pollutants

GHGs include CO_2, CH_4, N_2O, and fluorinated gases. Presented below is a description of each GHG and their known sources.

Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N_2O) is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential gases.

- *Chlorofluorocarbons (CFCs)* are GHGs and covered under the 1987 Montreal Protocol. CFCs are used in refrigeration, air-conditioning, packaging, insulation, solvents, or aerosol propellants. Because they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are GHGs and covered under the Kyoto Protocol.
- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong GHGs.
- *Sulfur Hexafluoride (SF_6)* is a colorless gas that is soluble in alcohol and ether and slightly soluble in water. SF_6 is a strong GHG and used primarily in electrical transmission and distribution systems as a dielectric.[5]
- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in items that serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.

[5] An electrical insulator that is highly resistant to the flow of an electric current.

3.2 California GHG Emissions

California is the second-largest emitter of GHGs in the United States (Texas is the largest GHG emitter) and the sixteenth largest GHG emitter in the world.[6] However, because of more stringent air pollutant emission regulations and mild climate, in 2001, California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services). In 2010, California produced 452 million metric tons (MMT) of CO_2-equivalent (CO_2e)[7] emissions, of which, 38% were from transportation sources, 21% from activities related to electric power generation, and 19% from industrial sources.[8] Other major sources of state GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities compose the balance of California's GHG emissions.[9]

Climate change could affect the natural environment in California in the following ways, among others:

- Rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta due to ocean expansion.
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality.
- Reduced snow pack and streamflow in the Sierra Nevada, affecting winter recreation and water supplies.
- Potential increase in the severity of winter storms, affecting peak streamflows and flooding.
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield.
- Changes in the distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million (i.e., by 2040) (California Energy Commission [CEC] 2005). As such, the number of people that could be affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Changes similar to those noted above for California would also occur in other parts of the world, with regional variations in resources affected and vulnerability to adverse effects.

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[6] California Energy Commission. 2006. *Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report.* California Climate Change Center, California Energy Commission Staff Paper, Sacramento, CA. Report CEC-500-2006-077.

[7] GHG emissions, other than CO_2, are commonly converted into CO_2 equivalents, which take into account the differing global warming potential (GWP) of different gases. For example, the Intergovernmental Panel on Climate Change (IPCC) finds that N_2O has a GWP of 310, and CH_4 has a GWP of 21. Thus, the emission of 1 ton of N_2O and 1 ton of CH_4 is represented as the emission of 310 tons of CO_2e and 21 tons of CO_2e, respectively. This allows for the summation of different GHG emissions into a single total.

[8] California Air Resources Board. 2013. *California Greenhouse Gas Inventory for 2000–2010 by Category, as Defined in the Scoping Plan.*

[9] *Ibid*.

GHG emissions in California are attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (CEC 2006) as well as natural processes.

3.3 Project Vicinity Mobile-Source Emissions

The estimate of daily VMT that occurs within the project vicinity under the existing/baseline condition is approximately 5.3 million. This generates approximately 996,578 metric tons of CO_2e emissions per year.

Chapter 4
Environmental Consequences/ Environmental Impacts

4.1 No-Build Alternative

4.1.1 Generation of GHG Emissions

No construction activities would be undertaken under the No-Build Alternative, and no construction-related GHG emissions would be generated.

The No-Build Alternative would not involve any new project facilities or services. As a result, it would not generate new GHG emissions. No project-related impacts under CEQA or NEPA would occur as a result of the No-Build Alternative. Future conditions in 2040 under the No-Build Alternative represent the future baseline against which proposed project alternatives are compared. As shown in Table 4-1, traffic operations in 2012 and 2040 under no-build conditions would result in annual emissions of approximately 72 MMT of CO_2e under the 2012 scenario and approximately 61 MMT of CO_2e under the 2040 scenario. Emissions were calculated using traffic data from the SCAG region (with VMT apportioned into 5 mph speed bins), as derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors. The fleet assumed by the model takes into consideration the fuel efficiency of recent vehicle models as well as older models that will continue to operate but phased out over time. Because of regional population growth, more cars are assumed to be in operation in 2040 relative to existing conditions.

Table 4-1. Baseline Conditions – GHG Emissions

Phase	CO_2e (metric tons)
Operation	
2012 Traffic Emissions	71,942,145
2040 Traffic Emissions	60,993,074
Source: Emissions modeling by ICF (2016) (Appendix A).	

4.1.2 Potential for Conflict with GHG Reduction Plans

The No-Build Alternative would not involve construction activities and would not affect capacity on roadways in the project vicinity. It would not conflict with Metro Climate Action and Adaptation Plan, GreenLA, ClimateLA, Sustainable City pLAn, SB 375, or AB 32 Scoping Plan measures, nor would it be inconsistent in with the goals of reducing local and statewide GHG emissions. No project-related impacts under CEQA or NEPA would occur as a result of the No-Build Alternative; however, the No-Build Alternative would not include transit system improvements that could help achieve the goals of those plans.

4.2 TSM Alternative

4.2.1 Generation of GHG Emissions

The TSM Alternative may include minor physical improvements to bus stops and roadways; consequently, there would be no or very minor construction-related GHG emissions.

Operation of the TSM Alternative would result in GHG emissions stemming from the use of motor vehicles. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under the TSM Alternative would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that the TSM Alternative would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 TSM Alternative would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 TSM Alternative, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-2, traffic operations in 2040 under the TSM Alternative would result in annual emissions of approximately 3,000 MT of CO2e compared with the future (2040) baseline condition with respect to vehicle emissions, an increase of 0.005%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). The TSM Alternative would result in a negligible increase in GHG emissions compared with the baseline because of increased bus service and lower operational efficiency on roadways in the project vicinity. The lower operational efficiency would result from the additional delays on project vicinity roadways relative to 2040 baseline conditions. Impacts are addressed below.

Table 4-2. TSM Alternative – GHG Emissions in 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	60,996,107
2040 Baseline Traffic Emissions	60,993,074
Net Operational Emissions	3,033
TOTAL	**3,033**
Percent Change Compared to 2040 Baseline	**0.005%**
Source: Emissions modeling by ICF (2016) (Appendix A).	

4.2.2 Potential for Conflict with GHG Reduction Plans

SB 375 supports the state's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Specifically, SB 375 requires regional transportation plans to include a policy element that describes the transportation issues in the region, identifies and quantifies regional needs, and describes the desired short-range and long-range transportation goals, and pragmatic objective and policy statements. SB 375 also recommended the quantification of indicators of means of travel and transit accessibility.

As directed by SB 375, SCAG's primary goal with the RTP/SCS is to provide a vision for future growth in Southern California that will decrease per capita greenhouse gas emissions from automobiles and light trucks, with goals of an 8% reduction by 2020 and an 18% reduction by 2035. The 2016-2040 RTP/SCS identifies improved access and mobility as one of its goals (p.64). The TSM Alternative would increase bus frequencies and enhance transit capacity, which would support the RTP/SCS goal of improved accessibility and mobility in its implementation of SB 375. Therefore, the TSM Alternative would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

The Metro Climate Action and Adaptation Plan identified the goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020. As identified in the Transportation Impacts Report, operation of the TSM Alternative would result in approximately 500 new transit trips per day (KOA 2015). Given that increased ridership would be achieved along the alignment compared with the future 2040 baseline conditions, the TSM Alternative would contribute to a decrease in GHG emissions from Metro buses per boarding, as additional transit boardings would occur with a marginal increase in service. The increase in GHG emissions under the TSM Alternative would occur as a result of minor increases in congestion due to the additional buses on the street network. Despite an overall increase in GHG emissions occurring as a result of increased congestion, the TSM Alternative would reduce Metro's emissions per transit boarding and would not conflict with the 5% GHG emissions reduction per boarding goal.

The Sustainable City pLAn outlines goals of GHG emission reductions of 45% by 2025, 60% by 2035, and 80% by 2050 in comparison to 1990 baseline emissions, as well as reductions in VMT per capita and increases in the percentage of trips made by walking, biking, and transit. Operation of the TSM Alternative would result in new transit trips, thereby contributing to reductions in VMT per capita and increases in the percentage of trips made by transit. Because mode-shift from cars to more efficient public transit vehicles would occur, the TSM Alternative would not conflict with the pLAn GHG reduction goals.

Operation of TSM Alternative is predicted to result in GHG emissions of approximately 3,000 metric tons (MT) over the future (2040) baseline conditions (an increase of 0.005%) based on vehicles operating at less efficient speeds due to increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit-oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode-shift from passenger vehicle to transit, bicycle, and walking trips.

Overall, the TSM Alternative would not conflict with AB 32, SB 32, or SB 375 or Metro and City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

4.3 Build Alternative 1 – Curb-Running BRT Alternative

4.3.1 Generation of GHG Emissions

Construction activities under Alternative 1 would involve roadway and sidewalk modifications as well as the installation of canopies at stops. These activities would result in the emission of approximately 1,280 metric tons of CO_2e over the course of the construction period, as shown in Table 4-3. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 43 metric tons of CO_2e.

Table 4-3. Alternative 1 – GHG Emissions in 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	60,995,897
2040 Baseline Traffic Emissions	60,993,074
Net Operational Emissions	2,823
Construction	
Roadway, Sidewalks, and Stations	1,281
30-Year Amortization of Construction Emissions	43
TOTAL	**2,866**
Percent Change Compared to 2040 Baseline	**0.005%**
Source: Emissions modeling by ICF (2016) (Appendix A).	

Operation of Alternative 1 would result in GHG emissions stemming from the use of motor vehicles. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 1 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that Alternative 1 would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 Alternative 1 scenario would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 Alternative 1 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-3, traffic operations in 2040 under Alternative 1 would result in annual emissions of approximately 2,800 MT of CO_2e compared with future (2040) baseline vehicle emissions, an increase of 0.005%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins).

Including the amortized construction emissions, total GHG emission resulting from the implementation of Build Alternative 1 would be 0.005% greater than under the future (2040) baseline condition. The projected increases in GHG generation are due to construction emissions as well as increased bus service and the lower operational efficiency of roadways in the project vicinity. Impacts related to GHG emissions are discussed below.

4.3.2 Potential for Conflict with GHG Reduction Plans

Alternative 1 would introduce a curb-running BRT service capable of increasing transit capacity, which would support the SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 1 would not conflict with the goals of SB 375 and the SCAG RTP/SCS. The 2016-2040 RTP/SCS identifies improved accessibility and mobility as one of its goals (p. 64). Alternative 1 would introduce BRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved accessibility and mobility in its implementation of SB 375. Although Alternative 1 would result in greater GHG emissions than under the future (2040) baseline condition, it would not conflict with the goals of SB 375 and the SCAG RTP/SCS in that it would provide a new transit service that would contribute to a larger rapid transit network. Such rapid transit systems are a recognized method of achieving transportation-related GHG emissions reductions.

The Metro Climate Action and Adaptation Plan identified the goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020. As identified in the Transportation Impacts Report, operation of Alternative 1 would result in approximately 3,000 new transit trips per day (KOA 2015). Given that increased ridership would be achieved with an increase of 10 Metro buses operating along the alignment compared with the future (2040) baseline, Alternative 1 would contribute to a decrease in GHG emissions per boarding and would not conflict with the 5% GHG emissions reduction per boarding goal. In addition, construction activities would comply with the Metro Green Construction Policy.

The Sustainable City pLAn outlines GHG emissions reduction goals of 45% by 2025, 60% by 2035, and 80% by 2050 compared with 1990 baseline emissions as well as reductions in VMT per capita and increases in the percentage of trips made by walking, biking, and transit. Operation of Alternative 1 would result in new transit trips, thereby contributing to reductions in VMT per capita and increases in the percentage of trips made by transit. Because mode-shift from cars to more efficient public transit vehicles would occur, Alternative 1 would not conflict with the Sustainable City pLAn GHG reduction goals.

Although the Alternative 1 year 2040 traffic scenario predicts a certain level of mode-shift from passenger vehicle to transit, bicycle, and walking trips based on existing land use patterns, additional mode-shift would most likely occur as a result of future transit-oriented development (TOD)/redevelopment that this project may facilitate. Because these potential changes are not well understood and difficult to quantify, potential future transportation-source GHG emissions reductions were not included in the modeling.

Without considering a future mode shift to transit, bicycle, and walking trips, operation of Alternative 1 is predicted to result in GHG emissions reductions under the 2012 scenario and increases of approximately 2,800 MT (a 0.005% increase) compared with future (2040) baseline conditions, with vehicles operating at less efficient speeds because of increased congestion. However, future transportation-source GHG emissions reductions could offset this minimal increase as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking.

Overall, Alternative 1 does not conflict with AB 32, SB 32, or SB 375 or Metro or City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impact would occur under CEQA, and no adverse effects would occur under NEPA.

4.4 Build Alternative 2 – Median-Running BRT Alternative

4.4.1 Generation of GHG Emissions

Construction activities under Alternative 2 would involve roadway, bus stop, and sidewalk modifications to allow for a median-running BRT service. These activities would result in the emission of approximately 2,170 metric tons of CO_2e, as shown in Table 4-4. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 72 MT of CO_2e.

Table 4-4. Alternative 2 – GHG Emissions in 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	60,993,238
2040 Baseline Traffic Emissions	60,993,074
Net Operational Traffic Emissions	165
Construction	
Roadway, Sidewalks, and Stations	2,168
30-Year Amortization of Construction Emissions	72
TOTAL	**237**
Percent Change Compared to 2040 Baseline	**0.0004%**
Source: Emissions modeling by ICF (2015) (Appendix A).	

Operation of Alternative 2 would result in GHG emissions stemming from the use of motor vehicles in the project vicinity. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 2 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that Alternative 2 would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 Alternative 2 scenario would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 Alternative 2 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-4, without considering a future mode shift to transit, bicycle, and walking trips, traffic operations in 2040 under Alternative 2 would result in annual emissions of approximately 165 MT of CO_2e compared with future (2040) baseline vehicle emissions, an increase of less than one-thousandth of 1%. Similar to Alternative 1, the projected increases in GHG emissions would be due to construction emissions as well increased bus service and the lower operational efficiency of roadways in the project vicinity. Emissions were calculated using traffic data that were derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins).

Including the amortized construction emissions, total GHG emission resulting from the implementation of Build Alternative 2 would be 0.0004% greater than the future (2040) baseline condition. Impacts due to GHG emissions are discussed below.

4.4.2 Potential for Conflict with GHG Reduction Plans

Alternative 2 would introduce a BRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 2 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

Similar to Alternative 1, Alternative 2 would contribute to a decrease in GHG emissions per boarding and would not conflict with the goal of achieving 5% GHG emissions reduction per boarding identified in the Metro Climate Action and Adaptation Plan. Alternative 2's construction activities would also comply with the Metro Green Construction Policy.

Similar to Alternative 1, Alternative 2 would not conflict with the Sustainable City pLAn GHG emissions reduction goals.

Although the 2040 traffic scenario under Alternative 2 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, an additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Operation of Alternative 2 is predicted to result in GHG emissions reductions compared with 2012 existing conditions. Without considering future mode shift, emissions would increase by approximately 165 MT compared with future (2040) baseline conditions (a 0.0004% increase), based on vehicles operating at less efficient speeds because of increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 2 would not conflict with AB 32, SB 32, or SB 375 or Metro or City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

4.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

4.5.1 Generation of GHG Emissions

Construction activities under Alternative 3 would involve roadway and sidewalk modifications to allow for median-running Low-Floor LRT/Tram service. In addition, Alternative 3 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, and the installation of TPSS units. In total, these activities would result in the emission of approximately 4,025 metric tons of CO_2e, as shown in Table 4-5. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 134 metric tons of CO_2e.

Operation of Alternative 3 would result in GHG emissions stemming from the use of motor vehicles, operation of an MSF, and electricity consumption for vehicle propulsion and station operation. As shown in Table 4-5, project operation under the 2012 Alternative 3 scenario would result in reductions in mobile-source GHG emissions (760 MT) relative to the 2012 no-build scenario. However, because of amortized construction emissions, as well as ongoing transit vehicle propulsion and maintenance facility emissions, the 2012 Alternative 3 scenario would result in a 0.019% increase in emissions compared with the 2012 baseline scenario. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). Operation of the MSF would be responsible for an additional 1,420 MT of CO_2e being emitted annually. LRT vehicle propulsion and station operation would result in the emission of 12,900 MT of CO_2e per year.

Table 4-5. Alternative 3 – GHG Emissions in 2012

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	71,941,386
2012 Baseline Traffic Emissions	71,942,145
Net Operational Traffic Emissions	(760)
Maintenance Facility	1,416
Vehicle Propulsion and Stations	12,904
Construction	
Roadway/Track, Sidewalks, Stations	3,116
Maintenance Facility	562
TPSS, Bridges, and Other	347
30-year Amortization of Construction Emissions	134
TOTAL	**13,694**
Percent Change Compared to 2012 Baseline	**0.019%**
Source: Emissions modeling by ICF (2016) (Appendix A).	

Similar to Alternatives 1 and 2, the projected increases in GHG emissions under Alternative 3 would be due to construction activities as well as the introduction of low-floor LRT/tram service, which would result in emissions from the electricity used to power it. Because Alternative 3 would result in an increase in GHG emissions compared with the 2012 no-build scenario, such changes would be significant under CEQA. No adverse effects would occur under NEPA because the increase would result from the provision of an additional high-capacity transit service in an urban setting and would not represent a substantial increase in the context of global GHG emissions.

In the longer term, as shown in Table 4-6, traffic operations under the 2040 Alternative 3 scenario would result in the annual emission of approximately 44,000 MT of CO_2e above future (2040) baseline-condition vehicle emissions, an increase of approximately 0.072%. Including the amortized construction emissions, implementation of Alternative 3 would result in a 0.096% increase in GHG emissions compared with future (2040) baseline emissions.

Table 4-6. Alternative 3 – GHG Emissions in 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	61,037,093
2040 Baseline Traffic Emissions	60,993,074
Net Operational Traffic Emissions	44,019
Maintenance Facility	1,416
Vehicle Propulsion and Stations	12,904
Construction	
Roadway/Track, Sidewalks, Stations	3,116
Maintenance Facility	562
TPSS, Bridges, and Other	347
30-year Amortization of Construction Emissions	134
TOTAL	**58,473**
Percent Change Compared to 2040 Baseline	**0.096%**
Source: Emissions modeling by ICF (2016) (Appendix A).	

4.5.2 Potential for Conflict with GHG Reduction Plans

Alternative 3 would introduce a Low-Floor LRT/Tram service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 3 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

A goal of the Metro Climate Action and Adaptation Plan is to reduce Metro's GHG emissions per boarding by 5% between 2010 and 2020. As identified in the Transportation Impacts Report, operation of Alternative 3 would result in approximately 8,500 new transit trips (KOA 2015). Because increased ridership on energy-efficient low-floor LRT/tram vehicles would be achieved without substantially increasing GHG emissions relative to the future (2040) baseline, Alternative 3 would not conflict with the goal of a 5% GHG emissions reduction per boarding. In addition, construction activities would comply with the Metro Green Construction Policy.

Alternative 3 would not conflict with the Sustainable City pLAn GHG reduction goals. Although the 2040 traffic scenario under Alternative 3 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Without considering future mode shift to transit, bicycle and walking trips, operation of Alternative 3 is predicted to result in GHG emissions of approximately 58,000 MT CO_2e over the future (2040) baseline conditions (an increase of 0.096%), with vehicles operating at less efficient speeds because of increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit-oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 3 does not conflict with AB 32, SB 32, or SB 375 or Metro or City of Los Angeles goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. Alternative 3 would be supportive of these policies in the long run because it would improve transit service and result in mobility improvements by providing the increased capacity necessary to move more people more efficiently along the corridor. However, in the interim, Alternative 3 would result in an increase of GHG emissions over future baseline conditions because of lower vehicle speeds and increased congestion in mixed-flow vehicle lanes. Therefore, Alternative 3 would result in a significant impact with respect to GHG emissions under CEQA.

4.6 Build Alternative 4 – LRT Alternative

4.6.1 Generation of GHG Emissions

Alternative 4 would involve construction activities and changes to roadways and sidewalks to accommodate LRT service. This would include construction of a tunnel and three subterranean stations. In addition, Alternative 4 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, the LRT and heavy rail bridges over the Pacoima Wash, and the installation of TPSS units. MSF Site 2 and the cut-and-cover method of tunnel construction were assumed because these would result in the greatest impacts with respect to GHG emissions. In total, these activities would result in the emission of approximately 19,900 metric tons of CO_2e, as shown in Table 4-7. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 663 metric tons of CO_2e.

Operation of Alternative 4 would result in GHG emissions stemming from the use of motor vehicles, operation of a MSF, and electricity consumption for vehicle propulsion and station operation. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions from motor vehicles operating in the project vicinity relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 4 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario, operational traffic-related GHG emissions reductions under the 2012 Alternative 4 scenario would be greater than those identified in Table 4-5.

Table 4-7. Alternative 4 – GHG Emissions in 2040

Phase	CO_2e (metric tons)
Operation	
Traffic Emissions	60,964,076
2040 Baseline Traffic Emissions	60,993,074
Net Operational Traffic Emissions	(28,998)
Maintenance Facility	1,416
Vehicle Propulsion and Stations	12,904
Construction	
Roadway/Track, Sidewalks, Aboveground Stations	3,618
Tunnels and Belowground Stations (Cut and Cover)	15,366
Maintenance Facility	562
TPSS, Bridges, and Other	347
30-year Amortization of Construction Emissions	663
TOTAL	**(14,015)**
Percent Change Compared to 2040 Baseline	**(0.023%)**
Source: Emissions modeling by ICF (2016) (Appendix A).	

Although there would be emissions associated with the new MSF and LRT vehicle propulsion system under the 2012 Alternative 4 scenario that would not occur under the 2012 no-build scenario, the reductions in emissions from motor vehicles would offset emissions from the MSF and LRT propulsion such that overall operational emissions would be minor. Because of the minor change in GHG emissions under the 2012 Alternative 4 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-7, traffic operations in 2040 under Alternative 4 would result in an annual emissions reduction of approximately 29,000 MT of CO_2e compared with the future (2040) baseline condition with respect to vehicle emissions, a decrease of 0.05%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). Operation of the MSF would be responsible for an additional 1,420 MT of CO_2e emitted annually. LRT vehicle propulsion and station operation would result in the emission of 12,900 MT of CO_2e per year.

Including the amortized construction emissions, implementation of Alternative 4 would result in a 0.023% reduction in GHG emissions compared with future (2040) baseline conditions.

4.6.2 Potential for Conflict with GHG Reduction Plans

Alternative 4 would provide new LRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 4 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

A goal of the Metro Climate Action and Adaptation Plan is to reduce Metro's GHG emissions per boarding by 5% between 2010 and 2020. As identified in the Transportation Impacts Report, operation of Alternative 4 would result in approximately 8,600 new transit trips (KOA 2015). Because

increased ridership would be achieved while decreasing overall GHG emissions relative to future (2040) baseline conditions, Alternative 4 would contribute to a decrease in GHG emissions per boarding and would not conflict with the goal of a 5% GHG emissions reduction per boarding. In addition, construction activities would comply with the Metro Green Construction Policy.

Alternative 4 would not conflict with the Sustainable City pLAn GHG reduction goals.

Although the 2040 traffic scenario under Alternative 4 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Operation of Alternative 4 is predicted to result in GHG emissions reductions (or minor increases under the 2012 Alternative 4 scenario). In addition, GHG emissions reductions of approximately 15,000 MT below future (2040) baseline conditions would occur, based on predicted future travel behavior and existing land use patterns (i.e., non-TOD). This estimate would most likely be reduced further by future transportation-source GHG emissions reductions as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 4 would not conflict with AB 32, SB 32, or SB 375 or Metro or City of Los Angeles goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities.

4.7 Cumulative Impacts

GHG emissions and climate change are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective. Climate change is the result of cumulative global emissions. No single project, when considered in isolation, can cause climate change because a single project's emissions are not enough to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions and GHGs are emitted by innumerable sources worldwide, global climate change will have a significant cumulative impact on the natural environment as well as human development and activity. As such, GHGs and climate change are cumulatively considerable, even though the contribution may be individually limited (SCAQMD 2008). SCAQMD methodology and thresholds are thus cumulative in nature.

As discussed above, the project would not exceed the threshold of significance and would be consistent with adopted plans and regulations that aim to reduce GHG emissions, with the exception of Alternatives 3 and 4. Alternatives 3 and 4 would result in potentially cumulatively considerable impacts because they would increase, compared with existing baseline conditions, GHG emissions related to transit vehicle propulsion and station and MSF operations. Therefore, under Alternative 3, the project would contribute to a cumulatively significant impact related to GHG emissions and climate change. For all other alternatives, however, GHG emissions would not be cumulatively considerable.

Chapter 5
Mitigation Measures

5.1 Operational Mitigation Measures

The GHG emissions increases from implementation of Alternatives 3 and 4 would result primarily from transit vehicle propulsion, with additional emissions increases associated with station and MSF operations, which are necessary for project operation. Feasible mitigation measures to reduce GHG emissions have been explored. As specified in Metro's June 2012 Climate Action and Adaptation Plan, Metro has investigated on-board storage of regenerative braking energy for all new rail cars. A study prepared for Bay Area Rapid Transit found that regenerative braking energy storage, in combination with different propulsion systems and changes to lighting and ventilation, could result in a per-mile reduction in electricity usage of 43% (Metro 2010).

5.2 Construction Mitigation Measures

No mitigation measures are required.

Chapter 6
Impacts Remaining After Mitigation

6.1 No-Build Alternative

No impacts would occur as a result of construction and operation of the No-Build Alternative.

6.2 Transportation System Management Alternative

Impacts due to construction and operation of the TSM Alternative would be less than significant under CEQA and minor adverse under NEPA.

6.3 Build Alternative 1 – Curb-Running BRT Alternative

Impacts due to the construction and operation of Alternative 1 would be less than significant under CEQA and minor adverse under NEPA.

6.4 Build Alternative 2 – Median-Running BRT Alternative

Impacts due to construction and operation of Alternative 2 would be less than significant under CEQA and minor adverse under NEPA.

6.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

Impacts due to construction of Alternative 3 would be less than significant under CEQA and minor adverse under NEPA. Impacts due to operation of Alternative 3 would be minor adverse under NEPA, but significant and unavoidable under CEQA.

6.6 Build Alternative 4 – LRT Alternative

Impacts due to construction and operation of Alternative 4 would be less than significant under CEQA and minor adverse under NEPA. Because net increases in operational GHG emissions could result, such emissions could be cumulatively considerable.

Chapter 7
CEQA Determination

Project operational impacts for CEQA would be less than significant under the TSM Alternative, Alternative 1, and Alternative 2. Project operational impacts for CEQA would be significant and unavoidable under Alternative 3. Project impacts under Alternative 4 would be less than significant, but operational GHG emissions could result in cumulatively considerable impacts. No impacts would occur under the No-Build Alternative.

Chapter 8
References

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Appendix A

CO_2e Calculations

No-Build Alternative

Phase	CO_2e (metric tons)	
Operation		
2012 Traffic Emissions	71,942,145	2012 Baseline
2040 Traffic Emissions	60,993,074	2040 Baseline
Source: Emissions modeling by ICF		

TSM Alternative

Phase	CO_2e (metric tons)		
Operation		Change from Baseline	
2040 Traffic Emissions	60,996,107	3,033	0.005%
2040 TOTAL	60,996,107		
Source: Emissions modeling by ICF			

Alternative 1

Phase	CO_2e (metric tons)		
Operation		Change from Baseline	
2040 Traffic Emissions	60,995,897	2,823	0.005%
Construction			
Roadway, Sidewalks, and Stations	1,281		
30-Year Amortization of Construction Emissions	43		
2040 TOTAL	60,995,940	**2,866**	0.005%
Source: Emissions modeling by ICF			

Alternative 2

Phase	CO_2e (metric tons)		
Operation		Change from Baseline	
2040 Traffic Emissions	60,993,238	165	0.00027%
Construction			
Roadway, Sidewalks, and Stations	2,168		
30-Year Amortization of Construction Emissions	72		
2040 TOTAL	60,993,310	**237**	0.00039%
Source: Emissions modeling by ICF			

Alternative 3

Phase	CO_2e (metric tons)		
Operation		Change from Baseline	
2012 Traffic Emissions	71,941,386	(759)	-0.001%
2040 Traffic Emissions	61,037,093	44,019	0.072%
Maintenance Facility	1,416		
Vehicle Propulsion and Stations	12,904		
Construction			
Roadway/Track, Sidewalks, Stations	3,116		
Maintenance Facility	562		
TPSS, Bridges, and Other	347		
30-Year Amortization of Construction Emissions	134.17		
2012 TOTAL	71,955,840	**13,695**	0.019%
2040 TOTAL	61,051,547	**58,473**	0.096%
Source: Emissions modeling by ICF			

Alternative 4

Phase	CO_2e (metric tons)		
Operation		Change from Baseline	
2040 Traffic Emissions	60,964,076	(28,998)	-0.048%
Maintenance Facility	1,416		
Vehicle Propulsion and Stations	12,904		
Construction			
Roadway/Track, Sidewalks, Aboveground Stations	3,618		
Tunnels and Belowground Stations (Cut and Cover)	15,366		
Maintenance Facility	562		
TPSS, Bridges, and Other	347		
30-Year Amortization of Construction Emissions	663.10		
2040 TOTAL	60,979,059	**(14,015)**	-0.023%
Source: Emissions modeling by ICF			

Propulsion Station Energy Estimate

Fiscal Year 2014 Propulsion Power and Station Consumption Report

Light Rail Energy Consumption (KWh) for FY 2014	**139,376,756**	Source: Metro 2014
Increase to Account for 24-Hour Operation*	**153,314,432 KWh**	

Assumptions: Depending on the line and current timetables, Metro would need to operate from 5 to 12% more trains to operate 24 hours per day with 20-minute headways during late-night hours. A 10% increase in energy is assumed to be conservative. Actual energy consumption required for 24-hour operation may be less.

LRT Lines	**Distance**
Blue Line	22.17 miles
Expo Line	8.83 miles
Green Line	19.64 miles
Gold Line	19.51 miles
Total	**70.15 miles**
LRT Energy Consumption/Mile/Year (24-Hour Operation)	2,185,522.90 KWh

ESFV Tram/LRT Distance	**9.2 miles**
Projected Annual Energy Consumption for ESFV Propulsion and Stations	**20,106,811 KWh**

Emission Factors for LADWP Electricity

	ROG	**Nox**	**CO**	**Sox**	**PM10**	**PM2.5**	**C02e**
	0.0071	0.0645	0.0542	0.00039	0.00491	0.00491	491.0958904
Factors	8.41731E-09	7.64671E-08	6.42561E-08	4.62359E-10	5.82098E-09	5.82098E-09	0.000582212

Annual Emissions (tons)

ROG	**Nox**	**CO**	**Sox**	**PM10**	**PM2.5**	**C02e**
0.169	1.538	1.292	0.009	0.117	0.117	11,706.428

Daily Emissions (pounds per day)

ROG	**Nox**	**CO**	**Sox**	**PM10**	**PM2.5**	**C02e**
0.93	8.42	7.08	0.05	0.64	0.64	64,144.81

Maintenance Facility Operational Emissions

Calculations from CalEEMod, mobile emissions from the site accounted for in the regional emissions calculations based on

Daily Emissions (pounds per day)

	ROG	**Nox**	**CO**	**Sox**	**PM10**	**PM2.5**	**C02e**
Area	1.8311	0.00007	0.00725	0	0.00003	0.00003	0.02
Energy	0.0389	0.3537	0.2971	0.00212	0.0269	0.0269	426.9825
Maintenance Facility Total	1.87	0.35377	0.30435	0.00212	0.02693	0.02693	426.9987

Daily Emissions (pounds per day)

	ROG	**Nox**	**CO**	**Sox**	**PM10**	**PM2.5**	**C02e**
Total Stationary-Source Operational Emissions	2.80	8.78	7.38	0.05	0.67	0.67	64,571.81
2040 Total Mobile-Source Operational Emissions (Alternative 3, Net)	145.65	510.34	448.54		1.22	1.65	265,316.87
2040 Total Operational Emissions (Alternative 3, Net)	148.44	519.12	455.93	0.05	1.89	2.32	329,888.68
2040 Total Mobile-Source Operational Emissions (Alternative 4, Net)	-75.65234837	-142.647798	-154.4211538		-9.057258505	-4.157701194	-174927.2915
2040Total Operational Emissions (Alternative 4, Net)	(72.85)	(133.87)	(147.04)	0.05	(8.39)	(3.49)	(110,355.48)

2040 Highway VMT

ESFV 2040 VMT/VHT SUMMARY

PEAK PERIODS

	VMT	Y40 No Build				Y40 TSM				Y40 Alt1				Y40 Alt2				Y40 Alt3				Y40 Alt4			
Bin Name	Speed Bins	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%
5	0.0 - 4.99	8,349,722	3.04%	2,953,125	20.99%	8,350,915	3.04%	2,955,653	21.01%	8,450,667	3.07%	2,969,103	21.11%	8,363,952	3.04%	2,958,615	21.03%	8,438,043	3.07%	2,965,170	21.08%	8,242,105	3.00%	2,930,287	20.83%
10	5.0 - 9.99	12,408,550	4.51%	1,670,416	11.87%	12,523,379	4.56%	1,680,370	11.94%	12,243,426	4.45%	1,644,523	11.69%	12,519,278	4.56%	1,678,578	11.93%	12,479,982	4.54%	1,672,695	11.89%	12,431,994	4.52%	1,681,122	11.95%
15	10.0 - 14.99	17,778,914	6.47%	1,427,390	10.15%	17,520,628	6.37%	1,406,382	10.00%	17,972,565	6.54%	1,442,583	10.26%	17,622,478	6.41%	1,414,261	10.05%	17,747,438	6.46%	1,422,414	10.11%	17,866,776	6.50%	1,437,115	10.22%
20	15.0 - 19.99	27,598,895	10.04%	1,575,272	11.20%	27,840,632	10.13%	1,591,524	11.31%	27,504,607	10.01%	1,570,263	11.16%	27,857,294	10.14%	1,588,110	11.29%	28,144,442	10.24%	1,603,322	11.40%	27,725,559	10.09%	1,582,958	11.25%
25	20.0 - 24.99	35,830,284	13.04%	1,587,256	11.28%	35,827,042	13.03%	1,585,353	11.27%	35,829,899	13.04%	1,586,436	11.28%	35,779,070	13.02%	1,582,334	11.25%	36,026,747	13.11%	1,589,249	11.30%	35,599,401	12.95%	1,576,690	11.21%
30	25.0 - 29.99	48,209,221	17.54%	1,741,653	12.38%	48,022,348	17.47%	1,733,909	12.33%	47,912,426	17.43%	1,732,142	12.31%	47,867,401	17.42%	1,727,969	12.28%	48,013,858	17.47%	1,728,547	12.29%	47,880,467	17.42%	1,730,567	12.30%
35	30.0 - 34.99	46,564,705	16.94%	1,427,737	10.15%	46,826,252	17.04%	1,435,190	10.20%	46,905,668	17.07%	1,439,060	10.23%	46,648,491	16.97%	1,430,568	10.17%	46,334,046	16.86%	1,416,106	10.07%	46,918,293	17.07%	1,439,693	10.24%
40	35.0 - 39.99	25,378,308	9.23%	674,657	4.80%	25,245,184	9.18%	670,556	4.77%	25,336,294	9.22%	673,443	4.79%	25,474,582	9.27%	676,999	4.81%	25,371,433	9.23%	671,715	4.78%	25,521,361	9.29%	678,533	4.82%
45	40.0 - 44.99	13,343,121	4.85%	314,319	2.23%	13,290,148	4.84%	312,918	2.22%	13,190,178	4.80%	310,889	2.21%	13,308,009	4.84%	313,403	2.23%	13,100,877	4.77%	307,453	2.19%	13,227,641	4.81%	311,560	2.22%
50	45.0 - 49.99	12,027,237	4.38%	252,816	1.80%	12,077,352	4.39%	253,780	1.80%	12,121,533	4.41%	255,000	1.81%	12,069,579	4.39%	253,611	1.80%	12,011,823	4.37%	251,433	1.79%	12,062,422	4.39%	253,562	1.80%
55	50.0 - 54.99	5,702,577	2.07%	108,932	0.77%	5,597,016	2.04%	106,913	0.76%	5,648,070	2.05%	107,958	0.77%	5,614,729	2.04%	107,205	0.76%	5,458,354	1.99%	104,064	0.74%	5,634,837	2.05%	107,646	0.77%
60	55.0 - 59.99	4,464,262	1.62%	77,610	0.55%	4,549,920	1.66%	79,127	0.56%	4,526,668	1.65%	78,750	0.56%	4,566,634	1.66%	79,366	0.56%	4,822,533	1.75%	83,655	0.59%	4,611,810	1.68%	80,123	0.57%
65	60.0 - 64.99	6,014,675	2.19%	96,614	0.69%	6,008,882	2.19%	96,456	0.69%	6,019,653	2.19%	96,710	0.69%	5,967,283	2.17%	95,779	0.68%	5,804,942	2.11%	92,772	0.66%	5,926,756	2.16%	95,123	0.68%
70	65.0 - 69.99	4,542,083	1.65%	66,761	0.47%	4,533,763	1.65%	66,604	0.47%	4,528,088	1.65%	66,580	0.47%	4,531,612	1.65%	66,587	0.47%	4,488,811	1.63%	65,748	0.47%	4,534,348	1.65%	66,633	0.47%
75	70.0 - 74.99	6,653,691	2.42%	93,063	0.66%	6,651,473	2.42%	92,998	0.66%	6,657,966	2.42%	93,146	0.66%	6,655,047	2.42%	93,053	0.66%	6,618,417	2.41%	92,225	0.66%	6,646,522	2.42%	92,945	0.66%
80	75.0 - 80.00	737	0.00%	9	0.00%	742	0.00%	9	0.00%	736	0.00%	9	0.00%	737	0.00%	9	0.00%	740	0.00%	9	0.00%	742	0.00%	9	0.00%
	TOTAL	274,866,981	100.0%	14,067,630	100.0%	274,865,675	100.0%	14,067,743	100.0%	274,848,444	100.0%	14,066,598	100.0%	274,846,178	100.0%	14,066,447	100.0%	274,862,485	100.0%	14,066,576	100.0%	274,831,032	100.0%	14,064,565	100.0%

OFF-PEAK PERIODS

	VMT	Y40 No Build				Y40 TSM				Y40 Alt1				Y40 Alt2				Y40 Alt3				Y40 Alt4			
Bin Name	Speed Bins	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%	VMT	%	VHT	%
5	0.0 - 4.99	1,436,521	0.55%	571,637	8.83%	1,424,275	0.54%	569,122	8.79%	1,436,759	0.55%	571,972	8.83%	1,423,046	0.54%	568,947	8.79%	1,442,386	0.55%	572,894	8.85%	1,442,268	0.55%	572,777	8.85%
10	5.0 - 9.99	710,993	0.27%	98,413	1.52%	718,524	0.27%	100,598	1.55%	708,106	0.27%	97,927	1.51%	711,421	0.27%	99,633	1.54%	720,126	0.27%	98,999	1.53%	743,628	0.28%	101,171	1.56%
15	10.0 - 14.99	1,184,602	0.45%	96,230	1.49%	1,184,782	0.45%	96,400	1.49%	1,156,831	0.44%	94,442	1.46%	1,156,821	0.44%	94,493	1.46%	1,144,482	0.44%	93,261	1.44%	1,168,582	0.44%	96,611	1.49%
20	15.0 - 19.99	1,774,890	0.67%	98,647	1.52%	1,766,675	0.67%	98,356	1.52%	1,830,058	0.70%	102,024	1.58%	1,809,056	0.69%	101,170	1.56%	1,770,445	0.67%	98,748	1.53%	1,687,690	0.64%	93,937	1.45%
25	20.0 - 24.99	4,828,274	1.84%	207,894	3.21%	4,910,231	1.87%	211,193	3.26%	4,875,172	1.85%	209,463	3.24%	4,849,270	1.84%	208,871	3.23%	4,796,678	1.82%	206,833	3.19%	4,870,619	1.85%	210,055	3.24%
30	25.0 - 29.99	16,000,817	6.08%	560,661	8.66%	15,956,861	6.07%	558,676	8.63%	15,903,775	6.05%	556,956	8.60%	15,892,573	6.04%	556,806	8.60%	15,993,040	6.08%	560,336	8.65%	15,953,592	6.07%	558,822	8.63%
35	30.0 - 34.99	37,000,684	14.07%	1,093,560	16.89%	37,070,368	14.10%	1,095,424	16.92%	37,100,721	14.11%	1,096,125	16.93%	37,212,211	14.15%	1,099,629	16.98%	37,112,569	14.11%	1,096,288	16.93%	37,147,311	14.13%	1,096,633	16.94%
40	35.0 - 39.99	31,383,264	11.93%	834,180	12.88%	31,194,239	11.86%	829,123	12.80%	31,134,925	11.84%	827,611	12.78%	31,265,541	11.89%	830,847	12.83%	31,345,624	11.92%	833,019	12.87%	31,251,421	11.89%	830,081	12.82%
45	40.0 - 44.99	15,645,313	5.95%	366,664	5.66%	15,703,336	5.97%	368,241	5.69%	15,773,290	6.00%	370,028	5.71%	15,689,655	5.97%	367,739	5.68%	15,816,430	6.01%	370,699	5.73%	15,786,170	6.00%	369,853	5.71%
50	45.0 - 49.99	24,481,024	9.31%	509,296	7.87%	24,614,161	9.36%	512,017	7.91%	24,653,162	9.38%	512,812	7.92%	24,429,049	9.29%	508,213	7.85%	24,393,342	9.28%	507,226	7.83%	24,655,502	9.38%	512,283	7.91%
55	50.0 - 54.99	17,700,484	6.73%	338,049	5.22%	17,637,158	6.71%	336,736	5.20%	17,645,815	6.71%	336,894	5.20%	17,821,590	6.78%	340,454	5.26%	17,935,158	6.82%	342,416	5.29%	17,867,837	6.80%	340,815	5.26%
60	55.0 - 59.99	18,091,857	6.88%	314,496	4.86%	18,032,099	6.86%	313,470	4.84%	18,019,320	6.85%	313,194	4.84%	17,998,635	6.84%	312,875	4.83%	17,678,122	6.72%	307,169	4.74%	17,898,776	6.81%	310,583	4.80%
65	60.0 - 64.99	29,538,331	11.23%	471,269	7.28%	29,594,725	11.25%	472,156	7.29%	29,601,861	11.26%	472,256	7.29%	29,551,002	11.24%	471,512	7.28%	29,658,234	11.28%	473,267	7.31%	29,504,530	11.22%	470,283	7.26%
70	65.0 - 69.99	36,344,480	13.82%	537,438	8.30%	36,311,338	13.81%	536,943	8.29%	36,266,660	13.79%	536,280	8.28%	36,267,927	13.79%	536,344	8.28%	36,277,768	13.80%	536,410	8.28%	36,103,692	13.73%	533,389	8.24%
75	70.0 - 74.99	26,840,781	10.21%	376,833	5.82%	26,842,287	10.21%	376,866	5.82%	26,838,097	10.21%	376,806	5.82%	26,864,571	10.22%	377,190	5.83%	26,873,578	10.22%	377,219	5.83%	26,846,204	10.21%	376,560	5.82%
80	75.0 - 80.00	7,572	0.00%	98	0.00%	7,577	0.00%	99	0.00%	7,594	0.00%	99	0.00%	7,604	0.00%	99	0.00%	7,618	0.00%	99	0.00%	7,609	0.00%	99	0.00%
	TOTAL	262,969,885	100.0%	6,475,366	100.0%	262,968,636	100.0%	6,475,417	100.0%	262,952,147	100.0%	6,474,890	100.0%	262,949,971	100.0%	6,474,821	100.0%	262,965,600	100.0%	6,474,884	100.0%	262,935,431	100.0%	6,473,951	100.0%

ESFV 2012 Sunnyvale VMT/VHT SUMMARY

PEAK PERIODS

	VMT	Y12 No Build				Y12 Build (Alt 3)			
Bin Name	Speed Bins	VMT	%	VHT	%	VMT	%	VHT	%
5	0.0 - 4.99	1,336,887	0.62%	567,477	7.38%	1,335,782	0.62%	565,183	7.35%
10	5.0 - 9.99	2,666,487	1.23%	345,309	4.49%	2,673,976	1.23%	351,287	4.57%
15	10.0 - 14.99	5,401,389	2.49%	430,339	5.60%	5,392,087	2.49%	425,187	5.53%
20	15.0 - 19.99	10,031,671	4.63%	567,903	7.38%	10,041,154	4.63%	571,179	7.43%
25	20.0 - 24.99	24,885,926	11.49%	1,085,479	14.11%	24,878,711	11.48%	1,083,425	14.09%
30	25.0 - 29.99	42,811,006	19.76%	1,567,114	20.38%	42,792,392	19.75%	1,563,311	20.33%
35	30.0 - 34.99	42,919,182	19.81%	1,304,877	16.97%	42,949,364	19.82%	1,310,593	17.04%
40	35.0 - 39.99	23,907,364	11.04%	635,227	8.26%	23,891,249	11.03%	632,571	8.23%
45	40.0 - 44.99	12,298,662	5.68%	290,093	3.77%	12,307,586	5.68%	291,377	3.79%
50	45.0 - 49.99	15,215,923	7.02%	318,282	4.14%	15,212,238	7.02%	317,714	4.13%
55	50.0 - 54.99	9,154,638	4.23%	175,943	2.29%	9,153,371	4.23%	175,759	2.29%
60	55.0 - 59.99	6,662,205	3.08%	116,030	1.51%	6,660,470	3.07%	115,819	1.51%
65	60.0 - 64.99	5,526,244	2.55%	88,642	1.15%	5,517,246	2.55%	87,790	1.14%
70	65.0 - 69.99	5,377,948	2.48%	79,548	1.03%	5,389,402	2.49%	80,593	1.05%
75	70.0 - 74.99	8,450,102	3.90%	118,127	1.54%	8,446,494	3.90%	117,815	1.53%
80	75.0 - 80.00	997	0.00%	13	0.00%	996	0.00%	12	0.00%
	TOTAL	216,646,632	100.0%	7,690,403	100.0%	216,642,517	100.0%	7,689,616	100.0%

OFF-PEAK PERIODS

	VMT	Y12 No Build				Y12 Build (Alt 3)			
Bin Name	Speed Bins	VMT	%	VHT	%	VMT	%	VHT	%
5	0.0 - 4.99	351,099	0.17%	140,128	3.08%	351,114	0.17%	140,207	3.08%
10	5.0 - 9.99	200,108	0.10%	26,743	0.59%	200,083	0.10%	26,680	0.59%
15	10.0 - 14.99	279,333	0.14%	21,509	0.47%	279,266	0.14%	21,462	0.47%
20	15.0 - 19.99	794,918	0.39%	44,372	0.97%	794,729	0.39%	44,340	0.97%
25	20.0 - 24.99	6,866,764	3.40%	291,982	6.41%	6,868,117	3.40%	292,191	6.42%
30	25.0 - 29.99	16,169,968	8.02%	593,450	13.03%	16,167,250	8.01%	593,064	13.03%
35	30.0 - 34.99	25,041,807	12.41%	732,913	16.10%	25,039,390	12.41%	732,656	16.09%
40	35.0 - 39.99	19,932,711	9.88%	535,473	11.76%	19,931,769	9.88%	535,403	11.76%
45	40.0 - 44.99	6,014,140	2.98%	141,090	3.10%	6,013,094	2.98%	141,022	3.10%
50	45.0 - 49.99	12,696,914	6.29%	262,992	5.78%	12,692,998	6.29%	262,709	5.77%
55	50.0 - 54.99	13,966,089	6.92%	268,359	5.89%	13,974,168	6.93%	268,958	5.91%
60	55.0 - 59.99	13,533,376	6.71%	235,410	5.17%	13,528,194	6.71%	235,063	5.16%
65	60.0 - 64.99	15,946,119	7.90%	254,302	5.59%	15,947,802	7.91%	254,414	5.59%
70	65.0 - 69.99	32,669,580	16.19%	481,688	10.58%	32,671,105	16.20%	481,773	10.58%
75	70.0 - 74.99	37,261,262	18.47%	522,309	11.47%	37,261,275	18.47%	522,310	11.47%
80	75.0 - 80.00	11,659	0.01%	151	0.00%	11,659	0.01%	151	0.00%
	TOTAL	201,735,848	100.0%	4,552,870	100.0%	201,732,015	100.0%	4,552,404	100.0%

TOTAL DAILY

	VMT	Y12 No Build				Y12 Build (Alt 3)			
Bin Name	Speed Bins	VMT	%	VHT	%	VMT	%	VHT	%
5	0.0 - 4.99	1,687,986	0.40%	707,605	5.78%	1,686,896	0.40%	705,390	5.76%
10	5.0 - 9.99	2,866,596	0.69%	372,052	3.04%	2,874,059	0.69%	377,967	3.09%
15	10.0 - 14.99	5,680,722	1.36%	451,848	3.69%	5,671,353	1.36%	446,650	3.65%
20	15.0 - 19.99	10,826,589	2.59%	612,275	5.00%	10,835,883	2.59%	615,519	5.03%
25	20.0 - 24.99	31,752,690	7.59%	1,377,462	11.25%	31,746,828	7.59%	1,375,616	11.24%
30	25.0 - 29.99	58,980,974	14.10%	2,160,564	17.65%	58,959,642	14.09%	2,156,376	17.61%
35	30.0 - 34.99	67,960,989	16.24%	2,037,790	16.64%	67,988,754	16.25%	2,043,249	16.69%
40	35.0 - 39.99	43,840,075	10.48%	1,170,700	9.56%	43,823,018	10.47%	1,167,974	9.54%
45	40.0 - 44.99	18,312,802	4.38%	431,183	3.52%	18,320,679	4.38%	432,399	3.53%
50	45.0 - 49.99	27,912,837	6.67%	581,275	4.75%	27,905,236	6.67%	580,423	4.74%
55	50.0 - 54.99	23,120,728	5.53%	444,302	3.63%	23,127,539	5.53%	444,717	3.63%
60	55.0 - 59.99	20,195,581	4.83%	351,439	2.87%	20,188,664	4.83%	350,882	2.87%
65	60.0 - 64.99	21,472,363	5.13%	342,943	2.80%	21,465,049	5.13%	342,204	2.80%
70	65.0 - 69.99	38,047,528	9.09%	561,236	4.58%	38,060,507	9.10%	562,366	4.59%
75	70.0 - 74.99	45,711,365	10.93%	640,436	5.23%	45,707,769	10.93%	640,124	5.23%
80	75.0 - 80.00	12,656	0.00%	164	0.00%	12,655	0.00%	164	0.00%
	TOTAL	418,382,480	100.00%	12,243,273	100.00%	418,374,532	100.00%	12,242,019	100.00%

2040

	No Build		TSM		Alt 1		Alt 2		Alt 3		Alt 4	
Bin Name	VMT	%	VMT	%	VMT	%	VMT	%	VMT	%	VMT	%
5	9,786,243	1.82%	9,775,190	1.82%	9,887,427	1.84%	9,786,998	1.82%	9,880,429	1.84%	9,684,373	1.80%
10	13,119,543	2.44%	13,241,903	2.46%	12,951,532	2.41%	13,230,699	2.46%	13,200,108	2.45%	13,175,622	2.45%
15	18,963,516	3.53%	18,705,410	3.48%	19,129,395	3.56%	18,779,299	3.49%	18,891,919	3.51%	19,035,358	3.54%
20	29,373,785	5.46%	29,607,307	5.50%	29,334,666	5.45%	29,666,350	5.52%	29,914,887	5.56%	29,413,249	5.47%
25	40,658,558	7.56%	40,737,272	7.57%	40,705,071	7.57%	40,628,340	7.55%	40,823,425	7.59%	40,470,020	7.53%
30	64,210,038	11.94%	63,979,209	11.90%	63,816,202	11.87%	63,759,974	11.86%	64,006,898	11.90%	63,834,059	11.87%
35	83,565,389	15.54%	83,896,620	15.60%	84,006,388	15.62%	83,860,702	15.59%	83,446,615	15.52%	84,065,604	15.63%
40	56,761,571	10.55%	56,439,423	10.49%	56,471,219	10.50%	56,740,123	10.55%	56,717,057	10.55%	56,772,782	10.56%
45	28,988,434	5.39%	28,993,484	5.39%	28,963,469	5.39%	28,997,664	5.39%	28,917,307	5.38%	29,013,811	5.40%
50	36,508,261	6.79%	36,691,513	6.82%	36,774,695	6.84%	36,498,627	6.79%	36,405,166	6.77%	36,717,924	6.83%
55	23,403,060	4.35%	23,234,174	4.32%	23,293,885	4.33%	23,436,319	4.36%	23,393,512	4.35%	23,502,673	4.37%
60	22,556,119	4.19%	22,582,019	4.20%	22,545,987	4.19%	22,565,269	4.20%	22,500,655	4.18%	22,510,586	4.19%
65	35,553,006	6.61%	35,603,606	6.62%	35,621,514	6.62%	35,518,285	6.60%	35,463,176	6.59%	35,431,286	6.59%
70	40,886,563	7.60%	40,845,101	7.59%	40,794,748	7.59%	40,799,540	7.59%	40,766,579	7.58%	40,638,039	7.56%
70+	33,502,781	6.23%	33,502,079	6.23%	33,504,393	6.23%	33,527,958	6.23%	33,500,352	6.23%	33,501,076	6.23%
Total	**537,836,867**	100.00%	**537,834,311**	100.00%	**537,800,591**	100.00%	**537,796,149**	100.00%	**537,828,085**	100.00%	**537,766,463**	100.00%

2012

	No Build		Alt 3	
Bin Name	VMT	%	VMT	%
5	1,687,986	0.40%	1,686,896	0.40%
10	2,866,596	0.69%	2,874,059	0.69%
15	5,680,722	1.36%	5,671,353	1.36%
20	10,826,589	2.59%	10,835,883	2.59%
25	31,752,690	7.59%	31,746,828	7.59%
30	58,980,974	14.10%	58,959,642	14.09%
35	67,960,989	16.24%	67,988,754	16.25%
40	43,840,075	10.48%	43,823,018	10.47%
45	18,312,802	4.38%	18,320,679	4.38%
50	27,912,837	6.67%	27,905,236	6.67%
55	23,120,728	5.53%	23,127,539	5.53%
60	20,195,581	4.83%	20,188,664	4.83%
65	21,472,363	5.13%	21,465,049	5.13%
70	38,047,528	9.09%	38,060,507	9.10%
70+	45,724,021	10.93%	45,720,424	10.93%
Total	**418,382,480**	**100.00%**	**418,374,532**	**100.00%**

Project Traffic Operation Emissions Summary (2040)

Pounds per Day	Project Emissions						Alternative - No Build Emissions					
Pollutant Name	No Build	TSM	Alt 1	Alt 2	Alt 3	Alt 4	TSM	Alt 1	Alt 2	Alt 3	Alt 4	g/lb
HC	65,742	65,751	65,791	65,754	65,896	65,664	8	49	12	154	(78)	453.592
ROG	60,862	60,870	60,912	60,874	61,008	60,787	8	49	11	146	(76)	
TOG	72,515	72,524	72,567	72,528	72,685	72,429	9	53	14	170	(85)	
CO	530,143	530,155	530,156	530,144	530,592	529,989	12	12	1	449	(154)	
NOx	168,455	168,480	168,528	168,527	168,966	168,313	25	73	71	510	(143)	
CO2	368,122,873	368,141,193	368,139,867	368,123,810	368,388,190	367,947,946	18,319	16,993	937	265,317	(174,927)	
CH4	9,974	9,975	9,977	9,976	9,994	9,965	1	3	2	21	(8)	
PM10	62,523	62,523	62,519	62,518	62,524	62,514	(0)	(4)	(4)	1	(9)	
PM2.5	25,606	25,606	25,604	25,604	25,607	25,602	0	(1)	(2)	2	(4)	
Benzene	1,302	1,302	1,303	1,303	1,305	1,301	0	1	0	3	(1)	
Acrolein	39	39	39	39	40	39	0	0	0	0	(0)	
Acetaldehyde	1,053	1,053	1,053	1,053	1,056	1,052	0	0	0	3	(1)	
Formaldehyde	2,379	2,380	2,380	2,380	2,385	2,378	0	1	1	6	(2)	
Butadiene	196	196	196	196	197	196	0	0	0	0	(0)	
Naphthalene	75	75	75	75	75	75	0	0	0	0	(0)	
POM	38	38	38	38	38	38	0	0	0	0	(0)	
Diesel PM	497	497	497	497	497	497	0	(0)	(0)	0	(0)	
DEOG	12,356	12,358	12,359	12,359	12,389	12,347	2	3	3	33	(9)	

Tons per Year	Project Emissions						Alternative - No Build Emissions					
Pollutant Name	No Build	TSM	Alt 1	Alt 2	Alt 3	Alt 4	TSM	Alt 1	Alt 2	Alt 3	Alt 4	
HC	11,998	11,999	12,007	12,000	12,026	11,984	1	9	2	28	(14)	
ROG	11,107	11,109	11,116	11,110	11,134	11,093	1	9	2	27	(14)	
TOG	13,234	13,236	13,244	13,236	13,265	13,218	2	10	3	31	(15)	
CO	96,751	96,753	96,753	96,751	96,833	96,723	2	3	0	82	(28)	
NOx	30,743	30,748	30,756	30,756	30,836	30,717	4	13	13	93	(26)	
CO2	60,946,837	60,949,870	60,949,651	60,946,992	60,990,763	60,917,876	3,033	2,814	155	43,926	(28,961)	metric tons
CH4	1,651	1,651	1,652	1,652	1,655	1,650	-	0	0	3	(1)	metric tons
CO2e	60,993,074	60,996,107	60,995,897	60,993,238	61,037,093	60,964,076	3,033	2,823	165	44,019	(28,998)	metric tons
PM10	11,410	11,410	11,410	11,410	11,411	11,409	-	(0)	(1)	0	(1)	* GWP of 28 used for CH4
PM2.5	4,673	4,673	4,673	4,673	4,673	4,672	-	(0)	(0)	0	(1)	per Myhre et al. 2013
Benzene	238	238	238	238	238	237	-	0	-	1	(0)	
Acrolein	7	7	7	7	7	7	-	-	-	-	-	
Acetaldehyde	192	192	192	192	193	192	0	0	0	1	-	
Formaldehyde	434	434	434	434	435	434	-	-	-	1	(0)	
Butadiene	36	36	36	36	36	36	-	-	-	-	-	
Naphthalene	14	14	14	14	14	14	-	-	-	-	-	
POM	7	7	7	7	7	7	-	-	-	-	-	
Diesel PM	91	91	91	91	91	91	-	-	-	0	-	
DEOG	2,255	2,255	2,256	2,256	2,261	2,253	0	1	1	6	(2)	
						Increase in CO2e	0.005%	0.005%	0.0004%	0.096%	-0.023%	

Project Traffic Operation Emissions Summary (2012)

Pounds per Day	Project Emissions		Alternative - No Build Emissions
Pollutant Name	No Build	Alt 3	Alt 3
ROG	187,182	187,173	(9)
CO	2,223,083	2,223,028	(55)
NOx	707,749	707,736	(13)
PM10	63,339	63,338	(1)
PM2.5	33,706	33,706	(0)
Benzene	4,326	4,326	(0)
Acrolein	146	146	(0)
Acetaldehyde	3,238	3,238	(0)
Formaldehyde	7,503	7,503	(0)
Butadiene	714	714	(0)
Naphthalene	220	220	(0)
POM	183	183	(0)
Diesel PM	12,973	12,973	(0)
DEOG	36,946	36,944	(2)

Tons per Year	Project Emissions		Alternative - No Build Emissions	
Pollutant Name	No Build	Alt 3	Alt 3	
HC	36,269	36,268	(1)	
ROG	34,161	34,159	(2)	
TOG	40,321	40,319	(2)	
CO	405,712	405,702	(10)	
NOx	129,164	129,162	(2)	
CO2	71,812,679	71,811,919	(760)	metric tons
CH4	4,624	4,624	-	metric tons
CO2e	71,942,145	71,941,386	(760)	metric tons
PM10	11,560	11,559	(0)	
PM2.5	6,151	6,151	-	
Benzene	789	789	-	
Acrolein	27	27	-	
Acetaldehyde	591	591	-	
Formaldehyde	1,369	1,369	-	
Butadiene	130	130	-	
Naphthalene	40	40	-	
POM	34	34	-	
Diesel PM	2,368	2,368	-	
DEOG	6,743	6,742	(0)	

* GWP of 28 used for CH4 per Myhre et al. 2013

Alternative 1: Roads, Sidewalks, and Stations

ESFV Alt 1 Roadway, Sidewalks, and Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4,500.00	1000sqft	103.31	4,500,000.00	0
Other Non-Asphalt Surfaces	6.20	1000sqft	0.14	6,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2019
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curb-running BRT with construction starting in June 2017 for an 18-month duration

Land Use - Roadway: 4.5 million square feet of road to be repaved
Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks and ramps ~ 6,200 sf

Construction Phase - 18-month construction starting in June 2017, construction to occur 6 days/week ~ 470 days of construction
Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/striping

Grading - Material Imported: 500 cy paving materials + 4.5 M sf- 4 inch dpt (55,556 cy) + 1,050 cy PCC pads = 57,106 cy
Material Exported: 4.5 M sf with 4" dept (55,556 cy) + 1,050 cy 9 PCC pads + 1,218 cy for SW/curb/Misc removal = 57,824 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,253,100.00	97,152.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	6,759,300.00	0.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	220.00	120.00
tblConstructionPhase	NumDays	120.00	320.00
tblConstructionPhase	NumDays	220.00	30.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	104.00
tblGrading	MaterialExported	0.00	57,824.00
tblGrading	MaterialImported	0.00	57,106.00
tblProjectCharacteristics	OperationalYear	2014	2019

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					
2017	0.5201	5.8592	4.5895	6.8700e-003	3.0804	0.2678	3.3481	1.6297	0.2464	1.8760	0.0000	624.8989	624.8989	0.1048	0.0000	627.0993
2018	1.1728	5.0000	4.4555	7.4400e-003	3.1437	0.2330	3.3767	1.6461	0.2146	1.8607	0.0000	651.3631	651.3631	0.1203	0.0000	653.8884
Total	**1.6929**	**10.8592**	**9.0450**	**0.0143**	**6.2240**	**0.5008**	**6.7248**	**3.2758**	**0.4609**	**3.7367**	**0.0000**	**1,276.2620**	**1,276.2620**	**0.2250**	**0.0000**	**1,280.9877**

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					
2017	0.1209	1.3124	2.9283	6.8700e-003	1.2253	0.0216	1.2468	0.6429	0.0203	0.6632	0.0000	624.8985	624.8985	0.1048	0.0000	627.0989
2018	0.8272	1.0305	3.5741	7.4400e-003	1.2592	0.0190	1.2783	0.6521	0.0180	0.6701	0.0000	651.3627	651.3627	0.1203	0.0000	653.8880
Total	**0.9481**	**2.3428**	**6.5024**	**0.0143**	**2.4845**	**0.0406**	**2.5251**	**1.2950**	**0.0383**	**1.3334**	**0.0000**	**1,276.2612**	**1,276.2612**	**0.2250**	**0.0000**	**1,280.9869**

	ROG	NOx	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	**44.00**	**78.43**	**28.11**	**0.00**	**60.08**	**91.90**	**62.45**	**60.47**	**91.68**	**64.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	21.5102	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182
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	**21.5102**	**5.4000e-004**	**0.0581**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.1118**	**0.1118**	**3.0000e-004**	**0.0000**	**0.1182**

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	21.5102	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182
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	**21.5102**	**5.4000e-004**	**0.0581**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.1118**	**0.1118**	**3.0000e-004**	**0.0000**	**0.1182**

	ROG	NOx	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	Site Preparation	Site Preparation	6/1/2017	6/8/2018	6	320	
2	Paving	Paving	6/9/2018	10/26/2018	6	120	
3	Architectural Coating	Architectural Coating	10/27/2018	12/7/2018	5	30	Striping

Acres of Grading (Site Preparation Phase): 104

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	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
Site Preparation	7	18.00	0.00	14,366.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	379.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9523	0.0000	2.9523	1.5959	0.0000	1.5959	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4427	4.7354	3.6048	3.5800e-003		0.2520	0.2520		0.2319	0.2319	0.0000	332.2858	332.2858	0.1018	0.0000	334.4238
Total	**0.4427**	**4.7354**	**3.6048**	**3.5800e-003**	**2.9523**	**0.2520**	**3.2043**	**1.5959**	**0.2319**	**1.8277**	**0.0000**	**332.2858**	**332.2858**	**0.1018**	**0.0000**	**334.4238**

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	0.0709	1.1142	0.8857	3.0600e-003	0.1101	0.0156	0.1257	0.0290	0.0143	0.0434	0.0000	275.6621	275.6621	2.0400e-003	0.0000	275.7050
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0181	1.7000e-004	0.0182	4.7900e-003	1.5000e-004	4.9500e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.0774**	**1.1237**	**0.9847**	**3.2900e-003**	**0.1281**	**0.0158**	**0.1439**	**0.0338**	**0.0145**	**0.0483**	**0.0000**	**292.6131**	**292.6131**	**2.9600e-003**	**0.0000**	**292.6755**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1514	0.0000	1.1514	0.6224	0.0000	0.6224	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.1886	1.9436	3.5800e-003		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	332.2854	332.2854	0.1018	0.0000	334.4234
Total	**0.0435**	**0.1886**	**1.9436**	**3.5800e-003**	**1.1514**	**5.8000e-003**	**1.1572**	**0.6224**	**5.8000e-003**	**0.6282**	**0.0000**	**332.2854**	**332.2854**	**0.1018**	**0.0000**	**334.4234**

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	0.0709	1.1142	0.8857	3.0600e-003	0.0637	0.0156	0.0792	0.0177	0.0143	0.0320	0.0000	275.6621	275.6621	2.0400e-003	0.0000	275.7050
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0102	1.7000e-004	0.0104	2.8700e-003	1.5000e-004	3.0300e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.0774**	**1.1237**	**0.9847**	**3.2900e-003**	**0.0739**	**0.0158**	**0.0896**	**0.0205**	**0.0145**	**0.0350**	**0.0000**	**292.6131**	**292.6131**	**2.9600e-003**	**0.0000**	**292.6755**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9523	0.0000	2.9523	1.5959	0.0000	1.5959	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2940	3.1242	2.4821	2.6800e-003		0.1620	0.1620		0.1491	0.1491	0.0000	244.8260	244.8260	0.0762	0.0000	246.4266
Total	**0.2940**	**3.1242**	**2.4821**	**2.6800e-003**	**2.9523**	**0.1620**	**3.1143**	**1.5959**	**0.1491**	**1.7449**	**0.0000**	**244.8260**	**244.8260**	**0.0762**	**0.0000**	**246.4266**

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	0.0520	0.7750	0.6506	2.2900e-003	0.1057	0.0117	0.1174	0.0275	0.0107	0.0382	0.0000	202.9802	202.9802	1.5500e-003	0.0000	203.0128
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	4.3300e-003	6.4600e-003	0.0671	1.7000e-004	0.0135	1.2000e-004	0.0136	3.5900e-003	1.1000e-004	3.7000e-003	0.0000	12.2251	12.2251	6.4000e-004	0.0000	12.2386
Total	**0.0564**	**0.7815**	**0.7176**	**2.4600e-003**	**0.1193**	**0.0118**	**0.1310**	**0.0311**	**0.0108**	**0.0419**	**0.0000**	**215.2052**	**215.2052**	**2.1900e-003**	**0.0000**	**215.2513**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1514	0.0000	1.1514	0.6224	0.0000	0.6224	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0326	0.1412	1.4550	2.6800e-003		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	244.8257	244.8257	0.0762	0.0000	246.4263
Total	**0.0326**	**0.1412**	**1.4550**	**2.6800e-003**	**1.1514**	**4.3500e-003**	**1.1557**	**0.6224**	**4.3500e-003**	**0.6267**	**0.0000**	**244.8257**	**244.8257**	**0.0762**	**0.0000**	**246.4263**

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	0.0520	0.7750	0.6506	2.2900e-003	0.0593	0.0117	0.0710	0.0161	0.0107	0.0268	0.0000	202.9802	202.9802	1.5500e-003	0.0000	203.0128
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	4.3300e-003	6.4600e-003	0.0671	1.7000e-004	7.6600e-003	1.2000e-004	7.7800e-003	2.1500e-003	1.1000e-004	2.2600e-003	0.0000	12.2251	12.2251	6.4000e-004	0.0000	12.2386
Total	**0.0564**	**0.7815**	**0.7176**	**2.4600e-003**	**0.0670**	**0.0118**	**0.0788**	**0.0182**	**0.0108**	**0.0291**	**0.0000**	**215.2052**	**215.2052**	**2.1900e-003**	**0.0000**	**215.2513**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0967	1.0298	0.8697	1.3400e-003		0.0563	0.0563		0.0518	0.0518	0.0000	122.2125	122.2125	0.0381	0.0000	123.0114
Paving	0.1353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2320**	**1.0298**	**0.8697**	**1.3400e-003**		**0.0563**	**0.0563**		**0.0518**	**0.0518**	**0.0000**	**122.2125**	**122.2125**	**0.0381**	**0.0000**	**123.0114**

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	3.1600e-003	4.7200e-003	0.0490	1.3000e-004	9.8600e-003	9.0000e-005	9.9500e-003	2.6200e-003	8.0000e-005	2.7000e-003	0.0000	8.9234	8.9234	4.7000e-004	0.0000	8.9333
Total	**3.1600e-003**	**4.7200e-003**	**0.0490**	**1.3000e-004**	**9.8600e-003**	**9.0000e-005**	**9.9500e-003**	**2.6200e-003**	**8.0000e-005**	**2.7000e-003**	**0.0000**	**8.9234**	**8.9234**	**4.7000e-004**	**0.0000**	**8.9333**

3.3 Paving - 2018

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	0.0165	0.0714	1.0157	1.3400e-003		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	122.2123	122.2123	0.0381	0.0000	123.0113
Paving	0.1353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1518**	**0.0714**	**1.0157**	**1.3400e-003**		**2.2000e-003**	**2.2000e-003**		**2.2000e-003**	**2.2000e-003**	**0.0000**	**122.2123**	**122.2123**	**0.0381**	**0.0000**	**123.0113**

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	3.1600e-003	4.7200e-003	0.0490	1.3000e-004	5.5900e-003	9.0000e-005	5.6800e-003	1.5700e-003	8.0000e-005	1.6500e-003	0.0000	8.9234	8.9234	4.7000e-004	0.0000	8.9333
Total	**3.1600e-003**	**4.7200e-003**	**0.0490**	**1.3000e-004**	**5.5900e-003**	**9.0000e-005**	**5.6800e-003**	**1.5700e-003**	**8.0000e-005**	**1.6500e-003**	**0.0000**	**8.9234**	**8.9234**	**4.7000e-004**	**0.0000**	**8.9333**

3.4 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4800e-003	0.0301	0.0278	4.0000e-005		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375
Total	**0.5674**	**0.0301**	**0.0278**	**4.0000e-005**		**2.2600e-003**	**2.2600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**3.8299**	**3.8299**	**3.6000e-004**	**0.0000**	**3.8375**

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	0.0200	0.0298	0.3093	7.9000e-004	0.0623	5.6000e-004	0.0629	0.0166	5.2000e-004	0.0171	0.0000	56.3661	56.3661	2.9600e-003	0.0000	56.4284
Total	**0.0200**	**0.0298**	**0.3093**	**7.9000e-004**	**0.0623**	**5.6000e-004**	**0.0629**	**0.0166**	**5.2000e-004**	**0.0171**	**0.0000**	**56.3661**	**56.3661**	**2.9600e-003**	**0.0000**	**56.4284**

3.4 Architectural Coating - 2018

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	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	1.9300e-003	0.0275	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375
Total	**0.5633**	**1.9300e-003**	**0.0275**	**4.0000e-005**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**3.8299**	**3.8299**	**3.6000e-004**	**0.0000**	**3.8375**

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	0.0200	0.0298	0.3093	7.9000e-004	0.0353	5.6000e-004	0.0359	9.9200e-003	5.2000e-004	0.0104	0.0000	56.3661	56.3661	2.9600e-003	0.0000	56.4284
Total	**0.0200**	**0.0298**	**0.3093**	**7.9000e-004**	**0.0353**	**5.6000e-004**	**0.0359**	**9.9200e-003**	**5.2000e-004**	**0.0104**	**0.0000**	**56.3661**	**56.3661**	**2.9600e-003**	**0.0000**	**56.4284**

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
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.530902	0.057841	0.178699	0.124790	0.039063	0.006298	0.016951	0.033908	0.002496	0.003149	0.003689	0.000536	0.001678

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					
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	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					
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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	21.5102	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182
Unmitigated	21.5102	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182

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	5.2216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	16.2832					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-003	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182
Total	**21.5102**	**5.4000e-004**	**0.0581**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.1118**	**0.1118**	**3.0000e-004**	**0.0000**	**0.1182**

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	5.2216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	16.2832					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-003	5.4000e-004	0.0581	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.1118	0.1118	3.0000e-004	0.0000	0.1182
Total	**21.5102**	**5.4000e-004**	**0.0581**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.1118**	**0.1118**	**3.0000e-004**	**0.0000**	**0.1182**

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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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 Vegetation

Alternative 2: Roads, Sidewalks, and Stations

ESFV Alt 2 Roadway, Sidewalks, and Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3,600.00	1000sqft	82.64	3,600,000.00	0
Other Non-Asphalt Surfaces	310.00	1000sqft	7.12	310,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Median-running BRT with construction starting in June 2017 for an 24-month duration

Land Use - 3.6 million square feet of road to be repaved
Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, and stations ~ 310,000 sf

Construction Phase - 24-month construction starting in June 2017, construction to occur 6 days/week ~ 625 days of construction
Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/striping

Grading - Material Imported: 118,944 cy paving/PCC excavation + 8,815 cy SW/curbs + 3,006 plaforms/canopy = 130,765 cy
Material Exported: 59,932 cy for paving/PCC + 1,429 cy platform/canopy + 80,359 cy for SW/curb/Misc removal = 141,720 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	1,955,000.00	97,152.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	5,865,000.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	35.00
tblConstructionPhase	NumDays	110.00	180.00
tblConstructionPhase	NumDays	60.00	410.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	90.00

tblGrading	MaterialExported	0.00	141,720.00
tblGrading	MaterialImported	0.00	130,765.00
tblProjectCharacteristics	OperationalYear	2014	2020

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					
2017	0.5804	6.8068	5.3428	9.4800e-003	4.0367	0.2810	4.3178	2.1137	0.2585	2.3722	0.0000	859.3478	859.3478	0.1065	0.0000	861.5847
2018	0.7771	8.3050	6.8768	0.0128	4.0558	0.3449	4.4007	2.1195	0.3173	2.4368	0.0000	1,142.2644	1,142.2644	0.1597	0.0000	1,145.6184
2019	0.7118	0.7650	1.0287	1.9900e-003	0.0706	0.0409	0.1115	0.0188	0.0378	0.0566	0.0000	160.0485	160.0485	0.0333	0.0000	160.7481
Total	**2.0693**	**15.8768**	**13.2483**	**0.0243**	**8.1632**	**0.6668**	**8.8300**	**4.2519**	**0.6136**	**4.8656**	**0.0000**	**2,161.6607**	**2,161.6607**	**0.2996**	**0.0000**	**2,167.9512**

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					
2017	0.1812	2.2600	3.6815	9.4800e-003	1.6212	0.0348	1.6560	0.8384	0.0325	0.8708	0.0000	859.3474	859.3474	0.1065	0.0000	861.5843
2018	0.2865	2.6755	5.2797	0.0128	1.6353	0.0448	1.6801	0.8430	0.0419	0.8849	0.0000	1,142.2638	1,142.2638	0.1597	0.0000	1,145.6178
2019	0.6536	0.0891	1.1490	1.9900e-003	0.0400	2.4100e-003	0.0424	0.0113	2.3600e-003	0.0136	0.0000	160.0484	160.0484	0.0333	0.0000	160.7480
Total	**1.1212**	**5.0246**	**10.1102**	**0.0243**	**3.2965**	**0.0820**	**3.3786**	**1.6926**	**0.0768**	**1.7693**	**0.0000**	**2,161.6596**	**2,161.6596**	**0.2996**	**0.0000**	**2,167.9501**

	ROG	NOx	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	**45.82**	**68.35**	**23.69**	**0.00**	**59.62**	**87.70**	**61.74**	**60.19**	**87.49**	**63.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.6642	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025
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	**18.6642**	**4.6000e-004**	**0.0502**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0970**	**0.0970**	**2.6000e-004**	**0.0000**	**0.1025**

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	18.6642	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025
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	**18.6642**	**4.6000e-004**	**0.0502**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0970**	**0.0970**	**2.6000e-004**	**0.0000**	**0.1025**

	ROG	NOx	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	Site Preparation	Site Preparation	6/1/2017	9/21/2018	6	410	
2	Paving	Paving	9/22/2018	4/19/2019	6	180	
3	Architectural Coating	Architectural Coating	4/20/2019	5/30/2019	6	35	Striping

Acres of Grading (Site Preparation Phase): 90

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	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
Site Preparation	7	18.00	0.00	34,061.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	328.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7667	0.0000	3.7667	2.0433	0.0000	2.0433	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4427	4.7354	3.6048	3.5800e-003		0.2520	0.2520		0.2319	0.2319	0.0000	332.2858	332.2858	0.1018	0.0000	334.4238
Total	**0.4427**	**4.7354**	**3.6048**	**3.5800e-003**	**3.7667**	**0.2520**	**4.0187**	**2.0433**	**0.2319**	**2.2751**	**0.0000**	**332.2858**	**332.2858**	**0.1018**	**0.0000**	**334.4238**

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	0.1312	2.0619	1.6390	5.6700e-003	0.2520	0.0289	0.2808	0.0656	0.0265	0.0921	0.0000	510.1110	510.1110	3.7800e-003	0.0000	510.1905
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0181	1.7000e-004	0.0182	4.7900e-003	1.5000e-004	4.9500e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.1377**	**2.0714**	**1.7379**	**5.9000e-003**	**0.2700**	**0.0290**	**0.2990**	**0.0704**	**0.0267**	**0.0971**	**0.0000**	**527.0621**	**527.0621**	**4.7000e-003**	**0.0000**	**527.1609**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4690	0.0000	1.4690	0.7969	0.0000	0.7969	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.1886	1.9436	3.5800e-003		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	332.2854	332.2854	0.1018	0.0000	334.4234
Total	**0.0435**	**0.1886**	**1.9436**	**3.5800e-003**	**1.4690**	**5.8000e-003**	**1.4748**	**0.7969**	**5.8000e-003**	**0.8027**	**0.0000**	**332.2854**	**332.2854**	**0.1018**	**0.0000**	**334.4234**

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	0.1312	2.0619	1.6390	5.6700e-003	0.1419	0.0289	0.1708	0.0386	0.0265	0.0651	0.0000	510.1110	510.1110	3.7800e-003	0.0000	510.1905
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0102	1.7000e-004	0.0104	2.8700e-003	1.5000e-004	3.0300e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.1377**	**2.0714**	**1.7379**	**5.9000e-003**	**0.1522**	**0.0290**	**0.1812**	**0.0415**	**0.0267**	**0.0682**	**0.0000**	**527.0621**	**527.0621**	**4.7000e-003**	**0.0000**	**527.1609**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7667	0.0000	3.7667	2.0433	0.0000	2.0433	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4872	5.1766	4.1126	4.4400e-003		0.2685	0.2685		0.2470	0.2470	0.0000	405.6606	405.6606	0.1263	0.0000	408.3126
Total	**0.4872**	**5.1766**	**4.1126**	**4.4400e-003**	**3.7667**	**0.2685**	**4.0352**	**2.0433**	**0.2470**	**2.2903**	**0.0000**	**405.6606**	**405.6606**	**0.1263**	**0.0000**	**408.3126**

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	0.1595	2.3763	1.9947	7.0300e-003	0.2597	0.0358	0.2954	0.0684	0.0329	0.1013	0.0000	622.3670	622.3670	4.7600e-003	0.0000	622.4669
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	7.1700e-003	0.0107	0.1112	2.8000e-004	0.0224	2.0000e-004	0.0226	5.9500e-003	1.9000e-004	6.1300e-003	0.0000	20.2561	20.2561	1.0600e-003	0.0000	20.2785
Total	**0.1667**	**2.3870**	**2.1058**	**7.3100e-003**	**0.2821**	**0.0360**	**0.3180**	**0.0744**	**0.0331**	**0.1074**	**0.0000**	**642.6232**	**642.6232**	**5.8200e-003**	**0.0000**	**642.7454**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4690	0.0000	1.4690	0.7969	0.0000	0.7969	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0540	0.2340	2.4109	4.4400e-003		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003	0.0000	405.6601	405.6601	0.1263	0.0000	408.3121
Total	**0.0540**	**0.2340**	**2.4109**	**4.4400e-003**	**1.4690**	**7.2000e-003**	**1.4762**	**0.7969**	**7.2000e-003**	**0.8041**	**0.0000**	**405.6601**	**405.6601**	**0.1263**	**0.0000**	**408.3121**

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	0.1595	2.3763	1.9947	7.0300e-003	0.1496	0.0358	0.1854	0.0414	0.0329	0.0743	0.0000	622.3670	622.3670	4.7600e-003	0.0000	622.4669
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	7.1700e-003	0.0107	0.1112	2.8000e-004	0.0127	2.0000e-004	0.0129	3.5600e-003	1.9000e-004	3.7500e-003	0.0000	20.2561	20.2561	1.0600e-003	0.0000	20.2785
Total	**0.1667**	**2.3870**	**2.1058**	**7.3100e-003**	**0.1623**	**0.0360**	**0.1983**	**0.0450**	**0.0331**	**0.0780**	**0.0000**	**642.6232**	**642.6232**	**5.8200e-003**	**0.0000**	**642.7454**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0693	0.7380	0.6233	9.6000e-004		0.0404	0.0404		0.0371	0.0371	0.0000	87.5856	87.5856	0.0273	0.0000	88.1582
Paving	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1210**	**0.7380**	**0.6233**	**9.6000e-004**		**0.0404**	**0.0404**		**0.0371**	**0.0371**	**0.0000**	**87.5856**	**87.5856**	**0.0273**	**0.0000**	**88.1582**

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	2.2600e-003	3.3800e-003	0.0351	9.0000e-005	7.0700e-003	6.0000e-005	7.1300e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	6.3951	6.3951	3.4000e-004	0.0000	6.4022
Total	**2.2600e-003**	**3.3800e-003**	**0.0351**	**9.0000e-005**	**7.0700e-003**	**6.0000e-005**	**7.1300e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**6.3951**	**6.3951**	**3.4000e-004**	**0.0000**	**6.4022**

3.3 Paving - 2018

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	0.0118	0.0512	0.7279	9.6000e-004		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	87.5855	87.5855	0.0273	0.0000	88.1581
Paving	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0635**	**0.0512**	**0.7279**	**9.6000e-004**		**1.5700e-003**	**1.5700e-003**		**1.5700e-003**	**1.5700e-003**	**0.0000**	**87.5855**	**87.5855**	**0.0273**	**0.0000**	**88.1581**

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	2.2600e-003	3.3800e-003	0.0351	9.0000e-005	4.0000e-003	6.0000e-005	4.0700e-003	1.1300e-003	6.0000e-005	1.1800e-003	0.0000	6.3951	6.3951	3.4000e-004	0.0000	6.4022
Total	**2.2600e-003**	**3.3800e-003**	**0.0351**	**9.0000e-005**	**4.0000e-003**	**6.0000e-005**	**4.0700e-003**	**1.1300e-003**	**6.0000e-005**	**1.1800e-003**	**0.0000**	**6.3951**	**6.3951**	**3.4000e-004**	**0.0000**	**6.4022**

3.3 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0670	0.7020	0.6752	1.0500e-003		0.0380	0.0380		0.0350	0.0350	0.0000	94.1855	94.1855	0.0298	0.0000	94.8113
Paving	0.0565					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1235**	**0.7020**	**0.6752**	**1.0500e-003**		**0.0380**	**0.0380**		**0.0350**	**0.0350**	**0.0000**	**94.1855**	**94.1855**	**0.0298**	**0.0000**	**94.8113**

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	2.2700e-003	3.3900e-003	0.0352	1.0000e-004	7.7300e-003	7.0000e-005	7.7900e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.7158	6.7158	3.4000e-004	0.0000	6.7230
Total	**2.2700e-003**	**3.3900e-003**	**0.0352**	**1.0000e-004**	**7.7300e-003**	**7.0000e-005**	**7.7900e-003**	**2.0500e-003**	**6.0000e-005**	**2.1100e-003**	**0.0000**	**6.7158**	**6.7158**	**3.4000e-004**	**0.0000**	**6.7230**

3.3 Paving - 2019

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	0.0129	0.0559	0.7956	1.0500e-003		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	94.1854	94.1854	0.0298	0.0000	94.8112
Paving	0.0565					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0694**	**0.0559**	**0.7956**	**1.0500e-003**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**94.1854**	**94.1854**	**0.0298**	**0.0000**	**94.8112**

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	2.2700e-003	3.3900e-003	0.0352	1.0000e-004	4.3800e-003	7.0000e-005	4.4400e-003	1.2300e-003	6.0000e-005	1.2900e-003	0.0000	6.7158	6.7158	3.4000e-004	0.0000	6.7230
Total	**2.2700e-003**	**3.3900e-003**	**0.0352**	**1.0000e-004**	**4.3800e-003**	**7.0000e-005**	**4.4400e-003**	**1.2300e-003**	**6.0000e-005**	**1.2900e-003**	**0.0000**	**6.7158**	**6.7158**	**3.4000e-004**	**0.0000**	**6.7230**

3.4 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0321	0.0322	5.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4761
Total	**0.5675**	**0.0321**	**0.0322**	**5.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4761**

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	0.0185	0.0276	0.2862	8.0000e-004	0.0629	5.5000e-004	0.0635	0.0167	5.1000e-004	0.0172	0.0000	54.6790	54.6790	2.8000e-003	0.0000	54.7377
Total	**0.0185**	**0.0276**	**0.2862**	**8.0000e-004**	**0.0629**	**5.5000e-004**	**0.0635**	**0.0167**	**5.1000e-004**	**0.0172**	**0.0000**	**54.6790**	**54.6790**	**2.8000e-003**	**0.0000**	**54.7377**

3.4 Architectural Coating - 2019

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	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2000e-004	2.2500e-003	0.0321	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4761
Total	**0.5634**	**2.2500e-003**	**0.0321**	**5.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4761**

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	0.0185	0.0276	0.2862	8.0000e-004	0.0356	5.5000e-004	0.0362	0.0100	5.1000e-004	0.0105	0.0000	54.6790	54.6790	2.8000e-003	0.0000	54.7377
Total	**0.0185**	**0.0276**	**0.2862**	**8.0000e-004**	**0.0356**	**5.5000e-004**	**0.0362**	**0.0100**	**5.1000e-004**	**0.0105**	**0.0000**	**54.6790**	**54.6790**	**2.8000e-003**	**0.0000**	**54.7377**

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
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.530094	0.057664	0.178835	0.124843	0.039181	0.006319	0.017052	0.034445	0.002509	0.003148	0.003693	0.000531	0.001685

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					
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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	18.6642	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025
Unmitigated	18.6642	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025

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	4.5307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.1288					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7200e-003	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025
Total	**18.6642**	**4.6000e-004**	**0.0502**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0970**	**0.0970**	**2.6000e-004**	**0.0000**	**0.1025**

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	4.5307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.1288					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7200e-003	4.6000e-004	0.0502	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0970	0.0970	2.6000e-004	0.0000	0.1025
Total	**18.6642**	**4.6000e-004**	**0.0502**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0970**	**0.0970**	**2.6000e-004**	**0.0000**	**0.1025**

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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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 Vegetation

Alternative 3: Roads, Sidewalks, and Stations

ESFV Alt 3 Roadway/Tracks, Sidewalks, and Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3,240.00	1000sqft	74.38	3,240,000.00	0
Other Non-Asphalt Surfaces	695.47	1000sqft	15.97	695,470.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Median-running LRT/Tram with construction starting in June 2017 for an 24-month duration

Land Use - 3.24 million square feet of road to be repaved
Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, and stations ~ 695,470 sf

Construction Phase - 24-month construction starting in June 2017, construction to occur 6 days/week ~ 625 days of construction
Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/striping

Grading - Material Imported: 53,250 cy paving + 22,193 cy SW/curbs + 15,335 plaforms + 168,083 cy track work = 258,861 cy
Material Exported: 40,000 cy for paving + 11,344 cy platform + 22,206 cy for SW/curb/Misc removal + 168,083 cy track work = 241,633 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	1,967,735.00	97,152.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	5,903,205.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	35.00
tblConstructionPhase	NumDays	110.00	180.00
tblConstructionPhase	NumDays	60.00	410.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	5/30/2019	5/22/2019

tblConstructionPhase	PhaseStartDate	4/20/2019	4/12/2019
tblGrading	AcresOfGrading	0.00	90.00
tblGrading	MaterialExported	0.00	241,633.00
tblGrading	MaterialImported	0.00	258,861.00
tblProjectCharacteristics	OperationalYear	2014	2020

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					
2017	0.6902	8.5321	6.7142	0.0142	4.2605	0.3052	4.5656	2.1705	0.2808	2.4513	0.0000	1,286.1901	1,286.1901	0.1097	0.0000	1,288.4935
2018	0.9054	10.2934	8.5459	0.0187	4.2860	0.3748	4.6608	2.1787	0.3448	2.5235	0.0000	1,663.0384	1,663.0384	0.1637	0.0000	1,666.4760
2019	0.7063	0.7653	1.0313	2.0000e-003	0.0712	0.0409	0.1121	0.0189	0.0378	0.0567	0.0000	160.5486	160.5486	0.0333	0.0000	161.2487
Total	**2.3019**	**19.5908**	**16.2914**	**0.0349**	**8.6177**	**0.7209**	**9.3386**	**4.3681**	**0.6634**	**5.0315**	**0.0000**	**3,109.7771**	**3,109.7771**	**0.3067**	**0.0000**	**3,116.2182**

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					
2017	0.2910	3.9853	5.0530	0.0142	1.7450	0.0590	1.8039	0.8714	0.0547	0.9261	0.0000	1,286.1897	1,286.1897	0.1097	0.0000	1,288.4931
2018	0.4148	4.6639	6.9488	0.0187	1.7656	0.0747	1.8403	0.8784	0.0694	0.9478	0.0000	1,663.0378	1,663.0378	0.1637	0.0000	1,666.4754
2019	0.6481	0.0894	1.1516	2.0000e-003	0.0403	2.4100e-003	0.0428	0.0113	2.3700e-003	0.0137	0.0000	160.5485	160.5485	0.0333	0.0000	161.2486
Total	**1.3538**	**8.7385**	**13.1534**	**0.0349**	**3.5509**	**0.1361**	**3.6870**	**1.7611**	**0.1265**	**1.8876**	**0.0000**	**3,109.7760**	**3,109.7760**	**0.3067**	**0.0000**	**3,116.2171**

	ROG	NOx	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	**41.19**	**55.39**	**19.26**	**0.00**	**58.80**	**81.12**	**60.52**	**59.68**	**80.93**	**62.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	18.7858	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032
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	**18.7858**	**4.7000e-004**	**0.0506**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0977**	**0.0977**	**2.6000e-004**	**0.0000**	**0.1032**

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	18.7858	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032
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	**18.7858**	**4.7000e-004**	**0.0506**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0977**	**0.0977**	**2.6000e-004**	**0.0000**	**0.1032**

	ROG	NOx	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	Site Preparation	Site Preparation	6/1/2017	9/21/2018	6	410	
2	Paving	Paving	9/22/2018	4/19/2019	6	180	
3	Architectural Coating	Architectural Coating	4/12/2019	5/22/2019	6	35	Striping

Acres of Grading (Site Preparation Phase): 90

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	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
Site Preparation	7	18.00	0.00	62,562.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	331.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7796	0.0000	3.7796	2.0452	0.0000	2.0452	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4427	4.7354	3.6048	3.5800e-003		0.2520	0.2520		0.2319	0.2319	0.0000	332.2858	332.2858	0.1018	0.0000	334.4238
Total	**0.4427**	**4.7354**	**3.6048**	**3.5800e-003**	**3.7796**	**0.2520**	**4.0316**	**2.0452**	**0.2319**	**2.2771**	**0.0000**	**332.2858**	**332.2858**	**0.1018**	**0.0000**	**334.4238**

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	0.2410	3.7871	3.0104	0.0104	0.4628	0.0530	0.5158	0.1205	0.0488	0.1692	0.0000	936.9532	936.9532	6.9500e-003	0.0000	937.0992
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0181	1.7000e-004	0.0182	4.7900e-003	1.5000e-004	4.9500e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.2475**	**3.7967**	**3.1094**	**0.0106**	**0.4809**	**0.0532**	**0.5340**	**0.1253**	**0.0489**	**0.1742**	**0.0000**	**953.9043**	**953.9043**	**7.8700e-003**	**0.0000**	**954.0697**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4741	0.0000	1.4741	0.7976	0.0000	0.7976	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.1886	1.9436	3.5800e-003		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	332.2854	332.2854	0.1018	0.0000	334.4234
Total	**0.0435**	**0.1886**	**1.9436**	**3.5800e-003**	**1.4741**	**5.8000e-003**	**1.4799**	**0.7976**	**5.8000e-003**	**0.8034**	**0.0000**	**332.2854**	**332.2854**	**0.1018**	**0.0000**	**334.4234**

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	0.2410	3.7871	3.0104	0.0104	0.2607	0.0530	0.3137	0.0709	0.0488	0.1196	0.0000	936.9532	936.9532	6.9500e-003	0.0000	937.0992
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0102	1.7000e-004	0.0104	2.8700e-003	1.5000e-004	3.0300e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.2475**	**3.7967**	**3.1094**	**0.0106**	**0.2709**	**0.0532**	**0.3241**	**0.0738**	**0.0489**	**0.1227**	**0.0000**	**953.9043**	**953.9043**	**7.8700e-003**	**0.0000**	**954.0697**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7796	0.0000	3.7796	2.0452	0.0000	2.0452	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4872	5.1766	4.1126	4.4400e-003		0.2685	0.2685		0.2470	0.2470	0.0000	405.6606	405.6606	0.1263	0.0000	408.3126
Total	**0.4872**	**5.1766**	**4.1126**	**4.4400e-003**	**3.7796**	**0.2685**	**4.0481**	**2.0452**	**0.2470**	**2.2922**	**0.0000**	**405.6606**	**405.6606**	**0.1263**	**0.0000**	**408.3126**

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	0.2930	4.3647	3.6637	0.0129	0.4770	0.0657	0.5426	0.1256	0.0604	0.1861	0.0000	1,143.1410	1,143.1410	8.7400e-003	0.0000	1,143.3245
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	7.1700e-003	0.0107	0.1112	2.8000e-004	0.0224	2.0000e-004	0.0226	5.9500e-003	1.9000e-004	6.1300e-003	0.0000	20.2561	20.2561	1.0600e-003	0.0000	20.2785
Total	**0.3001**	**4.3754**	**3.7749**	**0.0132**	**0.4994**	**0.0659**	**0.5652**	**0.1316**	**0.0606**	**0.1922**	**0.0000**	**1,163.3971**	**1,163.3971**	**9.8000e-003**	**0.0000**	**1,163.6030**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4741	0.0000	1.4741	0.7976	0.0000	0.7976	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0540	0.2340	2.4109	4.4400e-003		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003	0.0000	405.6601	405.6601	0.1263	0.0000	408.3121
Total	**0.0540**	**0.2340**	**2.4109**	**4.4400e-003**	**1.4741**	**7.2000e-003**	**1.4813**	**0.7976**	**7.2000e-003**	**0.8048**	**0.0000**	**405.6601**	**405.6601**	**0.1263**	**0.0000**	**408.3121**

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	0.2930	4.3647	3.6637	0.0129	0.2748	0.0657	0.3405	0.0760	0.0604	0.1364	0.0000	1,143.1410	1,143.1410	8.7400e-003	0.0000	1,143.3245
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	7.1700e-003	0.0107	0.1112	2.8000e-004	0.0127	2.0000e-004	0.0129	3.5600e-003	1.9000e-004	3.7500e-003	0.0000	20.2561	20.2561	1.0600e-003	0.0000	20.2785
Total	**0.3001**	**4.3754**	**3.7749**	**0.0132**	**0.2875**	**0.0659**	**0.3534**	**0.0796**	**0.0606**	**0.1402**	**0.0000**	**1,163.3971**	**1,163.3971**	**9.8000e-003**	**0.0000**	**1,163.6030**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0693	0.7380	0.6233	9.6000e-004		0.0404	0.0404		0.0371	0.0371	0.0000	87.5856	87.5856	0.0273	0.0000	88.1582
Paving	0.0466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1158**	**0.7380**	**0.6233**	**9.6000e-004**		**0.0404**	**0.0404**		**0.0371**	**0.0371**	**0.0000**	**87.5856**	**87.5856**	**0.0273**	**0.0000**	**88.1582**

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	2.2600e-003	3.3800e-003	0.0351	9.0000e-005	7.0700e-003	6.0000e-005	7.1300e-003	1.8800e-003	6.0000e-005	1.9400e-003	0.0000	6.3951	6.3951	3.4000e-004	0.0000	6.4022
Total	**2.2600e-003**	**3.3800e-003**	**0.0351**	**9.0000e-005**	**7.0700e-003**	**6.0000e-005**	**7.1300e-003**	**1.8800e-003**	**6.0000e-005**	**1.9400e-003**	**0.0000**	**6.3951**	**6.3951**	**3.4000e-004**	**0.0000**	**6.4022**

3.3 Paving - 2018

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	0.0118	0.0512	0.7279	9.6000e-004		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	87.5855	87.5855	0.0273	0.0000	88.1581
Paving	0.0466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0584**	**0.0512**	**0.7279**	**9.6000e-004**		**1.5700e-003**	**1.5700e-003**		**1.5700e-003**	**1.5700e-003**	**0.0000**	**87.5855**	**87.5855**	**0.0273**	**0.0000**	**88.1581**

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	2.2600e-003	3.3800e-003	0.0351	9.0000e-005	4.0000e-003	6.0000e-005	4.0700e-003	1.1300e-003	6.0000e-005	1.1800e-003	0.0000	6.3951	6.3951	3.4000e-004	0.0000	6.4022
Total	**2.2600e-003**	**3.3800e-003**	**0.0351**	**9.0000e-005**	**4.0000e-003**	**6.0000e-005**	**4.0700e-003**	**1.1300e-003**	**6.0000e-005**	**1.1800e-003**	**0.0000**	**6.3951**	**6.3951**	**3.4000e-004**	**0.0000**	**6.4022**

3.3 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0670	0.7020	0.6752	1.0500e-003		0.0380	0.0380		0.0350	0.0350	0.0000	94.1855	94.1855	0.0298	0.0000	94.8113
Paving	0.0509					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1179**	**0.7020**	**0.6752**	**1.0500e-003**		**0.0380**	**0.0380**		**0.0350**	**0.0350**	**0.0000**	**94.1855**	**94.1855**	**0.0298**	**0.0000**	**94.8113**

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	2.2700e-003	3.3900e-003	0.0352	1.0000e-004	7.7300e-003	7.0000e-005	7.7900e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	6.7158	6.7158	3.4000e-004	0.0000	6.7230
Total	**2.2700e-003**	**3.3900e-003**	**0.0352**	**1.0000e-004**	**7.7300e-003**	**7.0000e-005**	**7.7900e-003**	**2.0500e-003**	**6.0000e-005**	**2.1100e-003**	**0.0000**	**6.7158**	**6.7158**	**3.4000e-004**	**0.0000**	**6.7230**

3.3 Paving - 2019

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	0.0129	0.0559	0.7956	1.0500e-003		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	94.1854	94.1854	0.0298	0.0000	94.8112
Paving	0.0509					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0638**	**0.0559**	**0.7956**	**1.0500e-003**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**94.1854**	**94.1854**	**0.0298**	**0.0000**	**94.8112**

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	2.2700e-003	3.3900e-003	0.0352	1.0000e-004	4.3800e-003	7.0000e-005	4.4400e-003	1.2300e-003	6.0000e-005	1.2900e-003	0.0000	6.7158	6.7158	3.4000e-004	0.0000	6.7230
Total	**2.2700e-003**	**3.3900e-003**	**0.0352**	**1.0000e-004**	**4.3800e-003**	**7.0000e-005**	**4.4400e-003**	**1.2300e-003**	**6.0000e-005**	**1.2900e-003**	**0.0000**	**6.7158**	**6.7158**	**3.4000e-004**	**0.0000**	**6.7230**

3.4 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0321	0.0322	5.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4761
Total	**0.5675**	**0.0321**	**0.0322**	**5.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4761**

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	0.0186	0.0278	0.2888	8.0000e-004	0.0635	5.5000e-004	0.0640	0.0169	5.1000e-004	0.0174	0.0000	55.1791	55.1791	2.8200e-003	0.0000	55.2383
Total	**0.0186**	**0.0278**	**0.2888**	**8.0000e-004**	**0.0635**	**5.5000e-004**	**0.0640**	**0.0169**	**5.1000e-004**	**0.0174**	**0.0000**	**55.1791**	**55.1791**	**2.8200e-003**	**0.0000**	**55.2383**

3.4 Architectural Coating - 2019

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	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2000e-004	2.2500e-003	0.0321	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4761
Total	**0.5634**	**2.2500e-003**	**0.0321**	**5.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4761**

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	0.0186	0.0278	0.2888	8.0000e-004	0.0360	5.5000e-004	0.0365	0.0101	5.1000e-004	0.0106	0.0000	55.1791	55.1791	2.8200e-003	0.0000	55.2383
Total	**0.0186**	**0.0278**	**0.2888**	**8.0000e-004**	**0.0360**	**5.5000e-004**	**0.0365**	**0.0101**	**5.1000e-004**	**0.0106**	**0.0000**	**55.1791**	**55.1791**	**2.8200e-003**	**0.0000**	**55.2383**

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
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.530094	0.057664	0.178835	0.124843	0.039181	0.006319	0.017052	0.034445	0.002509	0.003148	0.003693	0.000531	0.001685

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					
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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	18.7858	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032
Unmitigated	18.7858	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032

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	4.5602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.2208					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7600e-003	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032
Total	**18.7858**	**4.7000e-004**	**0.0506**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0977**	**0.0977**	**2.6000e-004**	**0.0000**	**0.1032**

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	4.5602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.2208					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7600e-003	4.7000e-004	0.0506	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0977	0.0977	2.6000e-004	0.0000	0.1032
Total	**18.7858**	**4.7000e-004**	**0.0506**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0977**	**0.0977**	**2.6000e-004**	**0.0000**	**0.1032**

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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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 Vegetation

Alternative 4: Roadway/Tracks, Sidewalks, and At-Grade Stations

ESFV Alt 4 Roadway/Tracks, Sidewalks, and At-Grade Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2,250.00	1000sqft	51.65	2,250,000.00	0
Other Non-Asphalt Surfaces	2,069.00	1000sqft	47.50	2,069,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2021
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 36-month construction period beginning in June 2017

Land Use - 2.25 million square feet of road to be repaved
Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, direct fixation/ballasted track, at-grade stations ~ 2,069,051sf = 47.5 ac

Construction Phase - 36-month construction starting in June 2017, construction to occur 6 days/week ~ 640 days of construction
Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/striping

Grading - Material Imported: 32,778 cy paving + 11,913 cy SW/curbs/barriers + 15,709 plaforms + 273,588 cy track work = 333,988 cy
Material Exported: 27,778 cy for paving + 7,854 cy platform + 10,320 cy for SW/curb/Misc removal + 237,024 cy track work = 282,975 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,159,500.00	97,152.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	6,478,500.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	40.00
tblConstructionPhase	NumDays	110.00	200.00
tblConstructionPhase	NumDays	60.00	400.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	100.00
tblGrading	MaterialExported	0.00	282,975.00
tblGrading	MaterialImported	0.00	333,988.00
tblGrading	MaterialSiltContent	6.90	4.30
tblGrading	MeanVehicleSpeed	7.10	40.00
tblProjectCharacteristics	OperationalYear	2014	2021

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					
2017	0.7537	9.5301	7.5075	0.0170	4.0858	0.3191	4.4050	1.7166	0.2936	2.0102	0.0000	1,533.0909	1,533.0909	0.1115	0.0000	1,535.4328
2018	0.9388	11.0583	9.1979	0.0213	4.1109	0.3813	4.4922	1.7246	0.3508	2.0754	0.0000	1,892.8090	1,892.8090	0.1631	0.0000	1,896.2343
2019	0.7034	0.8520	1.1846	2.3400e-003	0.0881	0.0454	0.1335	0.0234	0.0420	0.0654	0.0000	185.9004	185.9004	0.0373	0.0000	186.6841
Total	**2.3958**	**21.4403**	**17.8900**	**0.0406**	**8.2848**	**0.7459**	**9.0307**	**3.4647**	**0.6864**	**4.1511**	**0.0000**	**3,611.8004**	**3,611.8004**	**0.3120**	**0.0000**	**3,618.3512**

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					
2017	0.3545	4.9832	5.8463	0.0170	1.6966	0.0729	1.7696	0.7004	0.0676	0.7679	0.0000	1,533.0905	1,533.0905	0.1115	0.0000	1,535.4324
2018	0.4605	5.5667	7.6879	0.0213	1.7168	0.0882	1.8051	0.7072	0.0819	0.7890	0.0000	1,892.8084	1,892.8084	0.1631	0.0000	1,896.2337
2019	0.6388	0.1031	1.3177	2.3400e-003	0.0499	2.7500e-003	0.0527	0.0140	2.7000e-003	0.0167	0.0000	185.9003	185.9003	0.0373	0.0000	186.6839
Total	**1.4538**	**10.6530**	**14.8519**	**0.0406**	**3.4634**	**0.1639**	**3.6273**	**1.4215**	**0.1521**	**1.5736**	**0.0000**	**3,611.7992**	**3,611.7992**	**0.3120**	**0.0000**	**3,618.3500**

	ROG	NOx	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	**39.32**	**50.31**	**16.98**	**0.00**	**58.20**	**78.02**	**59.83**	**58.97**	**77.84**	**62.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	20.6165	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132
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	**20.6165**	**5.1000e-004**	**0.0553**	**0.0000**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.1072**	**0.1072**	**2.8000e-004**	**0.0000**	**0.1132**

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	20.6165	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132
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	**20.6165**	**5.1000e-004**	**0.0553**	**0.0000**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.1072**	**0.1072**	**2.8000e-004**	**0.0000**	**0.1132**

	ROG	NOx	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	Site Preparation	Site Preparation	6/1/2017	9/10/2018	6	400	
2	Paving	Paving	9/11/2018	5/1/2019	6	200	
3	Architectural Coating	Architectural Coating	5/2/2019	6/17/2019	6	40	

Acres of Grading (Site Preparation Phase): 100

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	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
Site Preparation	7	18.00	0.00	77,120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	363.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4955	0.0000	3.4955	1.5627	0.0000	1.5627	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4427	4.7354	3.6048	3.5800e-003		0.2520	0.2520		0.2319	0.2319	0.0000	332.2858	332.2858	0.1018	0.0000	334.4238
Total	**0.4427**	**4.7354**	**3.6048**	**3.5800e-003**	**3.4955**	**0.2520**	**3.7475**	**1.5627**	**0.2319**	**1.7945**	**0.0000**	**332.2858**	**332.2858**	**0.1018**	**0.0000**	**334.4238**

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	0.3045	4.7851	3.8037	0.0132	0.5723	0.0670	0.6393	0.1492	0.0616	0.2108	0.0000	1,183.8541	1,183.8541	8.7800e-003	0.0000	1,184.0385
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0181	1.7000e-004	0.0182	4.7900e-003	1.5000e-004	4.9500e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.3110**	**4.7946**	**3.9027**	**0.0134**	**0.5904**	**0.0671**	**0.6575**	**0.1540**	**0.0617**	**0.2157**	**0.0000**	**1,200.8051**	**1,200.8051**	**9.7000e-003**	**0.0000**	**1,201.0090**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3632	0.0000	1.3632	0.6094	0.0000	0.6094	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.1886	1.9436	3.5800e-003		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	332.2854	332.2854	0.1018	0.0000	334.4234
Total	**0.0435**	**0.1886**	**1.9436**	**3.5800e-003**	**1.3632**	**5.8000e-003**	**1.3690**	**0.6094**	**5.8000e-003**	**0.6152**	**0.0000**	**332.2854**	**332.2854**	**0.1018**	**0.0000**	**334.4234**

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	0.3045	4.7851	3.8037	0.0132	0.3232	0.0670	0.3901	0.0880	0.0616	0.1496	0.0000	1,183.8541	1,183.8541	8.7800e-003	0.0000	1,184.0385
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	6.4400e-003	9.5100e-003	0.0990	2.3000e-004	0.0102	1.7000e-004	0.0104	2.8700e-003	1.5000e-004	3.0300e-003	0.0000	16.9511	16.9511	9.2000e-004	0.0000	16.9705
Total	**0.3110**	**4.7946**	**3.9027**	**0.0134**	**0.3334**	**0.0671**	**0.4005**	**0.0909**	**0.0617**	**0.1527**	**0.0000**	**1,200.8051**	**1,200.8051**	**9.7000e-003**	**0.0000**	**1,201.0090**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4955	0.0000	3.4955	1.5627	0.0000	1.5627	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4657	4.9486	3.9315	4.2400e-003		0.2567	0.2567		0.2361	0.2361	0.0000	387.7901	387.7901	0.1207	0.0000	390.3253
Total	**0.4657**	**4.9486**	**3.9315**	**4.2400e-003**	**3.4955**	**0.2567**	**3.7521**	**1.5627**	**0.2361**	**1.7988**	**0.0000**	**387.7901**	**387.7901**	**0.1207**	**0.0000**	**390.3253**

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	0.3539	5.2719	4.4253	0.0156	0.5861	0.0793	0.6655	0.1542	0.0730	0.2272	0.0000	1,380.7465	1,380.7465	0.0106	0.0000	1,380.9681
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	6.8500e-003	0.0102	0.1063	2.7000e-004	0.0214	1.9000e-004	0.0216	5.6800e-003	1.8000e-004	5.8600e-003	0.0000	19.3638	19.3638	1.0200e-003	0.0000	19.3852
Total	**0.3607**	**5.2821**	**4.5315**	**0.0159**	**0.6075**	**0.0795**	**0.6871**	**0.1599**	**0.0732**	**0.2331**	**0.0000**	**1,400.1103**	**1,400.1103**	**0.0116**	**0.0000**	**1,400.3533**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3632	0.0000	1.3632	0.6094	0.0000	0.6094	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0516	0.2237	2.3047	4.2400e-003		6.8800e-003	6.8800e-003		6.8800e-003	6.8800e-003	0.0000	387.7896	387.7896	0.1207	0.0000	390.3248
Total	**0.0516**	**0.2237**	**2.3047**	**4.2400e-003**	**1.3632**	**6.8800e-003**	**1.3701**	**0.6094**	**6.8800e-003**	**0.6163**	**0.0000**	**387.7896**	**387.7896**	**0.1207**	**0.0000**	**390.3248**

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	0.3539	5.2719	4.4253	0.0156	0.3370	0.0793	0.4163	0.0931	0.0730	0.1660	0.0000	1,380.7465	1,380.7465	0.0106	0.0000	1,380.9681
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	6.8500e-003	0.0102	0.1063	2.7000e-004	0.0121	1.9000e-004	0.0123	3.4100e-003	1.8000e-004	3.5800e-003	0.0000	19.3638	19.3638	1.0200e-003	0.0000	19.3852
Total	**0.3607**	**5.2821**	**4.5315**	**0.0159**	**0.3491**	**0.0795**	**0.4286**	**0.0965**	**0.0732**	**0.1696**	**0.0000**	**1,400.1103**	**1,400.1103**	**0.0116**	**0.0000**	**1,400.3533**

3.3 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0774	0.8238	0.6957	1.0700e-003		0.0451	0.0451		0.0415	0.0415	0.0000	97.7700	97.7700	0.0304	0.0000	98.4091
Paving	0.0325					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1098**	**0.8238**	**0.6957**	**1.0700e-003**		**0.0451**	**0.0451**		**0.0415**	**0.0415**	**0.0000**	**97.7700**	**97.7700**	**0.0304**	**0.0000**	**98.4091**

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	2.5300e-003	3.7700e-003	0.0392	1.0000e-004	7.8900e-003	7.0000e-005	7.9600e-003	2.1000e-003	7.0000e-005	2.1600e-003	0.0000	7.1387	7.1387	3.8000e-004	0.0000	7.1466
Total	**2.5300e-003**	**3.7700e-003**	**0.0392**	**1.0000e-004**	**7.8900e-003**	**7.0000e-005**	**7.9600e-003**	**2.1000e-003**	**7.0000e-005**	**2.1600e-003**	**0.0000**	**7.1387**	**7.1387**	**3.8000e-004**	**0.0000**	**7.1466**

3.3 Paving - 2018

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	0.0132	0.0571	0.8125	1.0700e-003		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003	0.0000	97.7699	97.7699	0.0304	0.0000	98.4090
Paving	0.0325					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0457**	**0.0571**	**0.8125**	**1.0700e-003**		**1.7600e-003**	**1.7600e-003**		**1.7600e-003**	**1.7600e-003**	**0.0000**	**97.7699**	**97.7699**	**0.0304**	**0.0000**	**98.4090**

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	2.5300e-003	3.7700e-003	0.0392	1.0000e-004	4.4700e-003	7.0000e-005	4.5400e-003	1.2600e-003	7.0000e-005	1.3200e-003	0.0000	7.1387	7.1387	3.8000e-004	0.0000	7.1466
Total	**2.5300e-003**	**3.7700e-003**	**0.0392**	**1.0000e-004**	**4.4700e-003**	**7.0000e-005**	**4.5400e-003**	**1.2600e-003**	**7.0000e-005**	**1.3200e-003**	**0.0000**	**7.1387**	**7.1387**	**3.8000e-004**	**0.0000**	**7.1466**

3.3 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0741	0.7766	0.7470	1.1600e-003		0.0421	0.0421		0.0387	0.0387	0.0000	104.2052	104.2052	0.0330	0.0000	104.8976
Paving	0.0352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1093**	**0.7766**	**0.7470**	**1.1600e-003**		**0.0421**	**0.0421**		**0.0387**	**0.0387**	**0.0000**	**104.2052**	**104.2052**	**0.0330**	**0.0000**	**104.8976**

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	2.5100e-003	3.7500e-003	0.0389	1.1000e-004	8.5500e-003	7.0000e-005	8.6200e-003	2.2700e-003	7.0000e-005	2.3400e-003	0.0000	7.4303	7.4303	3.8000e-004	0.0000	7.4382
Total	**2.5100e-003**	**3.7500e-003**	**0.0389**	**1.1000e-004**	**8.5500e-003**	**7.0000e-005**	**8.6200e-003**	**2.2700e-003**	**7.0000e-005**	**2.3400e-003**	**0.0000**	**7.4303**	**7.4303**	**3.8000e-004**	**0.0000**	**7.4382**

3.3 Paving - 2019

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	0.0143	0.0619	0.8802	1.1600e-003		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	104.2051	104.2051	0.0330	0.0000	104.8975
Paving	0.0352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0495**	**0.0619**	**0.8802**	**1.1600e-003**		**1.9000e-003**	**1.9000e-003**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**104.2051**	**104.2051**	**0.0330**	**0.0000**	**104.8975**

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	2.5100e-003	3.7500e-003	0.0389	1.1000e-004	4.8400e-003	7.0000e-005	4.9200e-003	1.3600e-003	7.0000e-005	1.4300e-003	0.0000	7.4303	7.4303	3.8000e-004	0.0000	7.4382
Total	**2.5100e-003**	**3.7500e-003**	**0.0389**	**1.1000e-004**	**4.8400e-003**	**7.0000e-005**	**4.9200e-003**	**1.3600e-003**	**7.0000e-005**	**1.4300e-003**	**0.0000**	**7.4303**	**7.4303**	**3.8000e-004**	**0.0000**	**7.4382**

3.4 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3300e-003	0.0367	0.0368	6.0000e-005		2.5800e-003	2.5800e-003		2.5800e-003	2.5800e-003	0.0000	5.1065	5.1065	4.3000e-004	0.0000	5.1156
Total	**0.5682**	**0.0367**	**0.0368**	**6.0000e-005**		**2.5800e-003**	**2.5800e-003**		**2.5800e-003**	**2.5800e-003**	**0.0000**	**5.1065**	**5.1065**	**4.3000e-004**	**0.0000**	**5.1156**

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	0.0234	0.0349	0.3619	1.0100e-003	0.0796	6.9000e-004	0.0803	0.0211	6.4000e-004	0.0218	0.0000	69.1584	69.1584	3.5400e-003	0.0000	69.2327
Total	**0.0234**	**0.0349**	**0.3619**	**1.0100e-003**	**0.0796**	**6.9000e-004**	**0.0803**	**0.0211**	**6.4000e-004**	**0.0218**	**0.0000**	**69.1584**	**69.1584**	**3.5400e-003**	**0.0000**	**69.2327**

3.4 Architectural Coating - 2019

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	0.5629					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9000e-004	2.5800e-003	0.0367	6.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	5.1065	5.1065	4.3000e-004	0.0000	5.1156
Total	**0.5635**	**2.5800e-003**	**0.0367**	**6.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**5.1065**	**5.1065**	**4.3000e-004**	**0.0000**	**5.1156**

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	0.0234	0.0349	0.3619	1.0100e-003	0.0451	6.9000e-004	0.0458	0.0127	6.4000e-004	0.0133	0.0000	69.1584	69.1584	3.5400e-003	0.0000	69.2327
Total	**0.0234**	**0.0349**	**0.3619**	**1.0100e-003**	**0.0451**	**6.9000e-004**	**0.0458**	**0.0127**	**6.4000e-004**	**0.0133**	**0.0000**	**69.1584**	**69.1584**	**3.5400e-003**	**0.0000**	**69.2327**

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
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527271	0.057774	0.179409	0.125521	0.039563	0.006393	0.017164	0.035220	0.002536	0.003167	0.003715	0.000530	0.001736

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					
Other Non-Asphalt Surfaces	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
Other Asphalt Surfaces	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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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	20.6165	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132
Unmitigated	20.6165	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132

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	5.0046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	15.6067					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132
Total	**20.6165**	**5.1000e-004**	**0.0553**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.1072**	**0.1072**	**2.8000e-004**	**0.0000**	**0.1132**

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	5.0046					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	15.6067					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1700e-003	5.1000e-004	0.0553	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1072	0.1072	2.8000e-004	0.0000	0.1132
Total	**20.6165**	**5.1000e-004**	**0.0553**	**0.0000**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.1072**	**0.1072**	**2.8000e-004**	**0.0000**	**0.1132**

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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	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 Vegetation

Alternative 4b: Underground Stations and Tunnels (Cut and Cover)

ESFV Alt 4b Underground Stations and Tunnels (Cut and Cover)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	222.57	1000sqft	5.11	222,568.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2020
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 30-month construction duration beginning June 2017

Land Use - Three underground stations have a combined 222,568 gsf

Construction Phase - 30-month construction duration with work occurring 6 days per week ~ 780 days

Off-road Equipment - 4 welders, 2 generator sets, 2 excavators, 1 crane, 4 tractors/loaders/backhoes, and 3 rubber tired dozers

Off-road Equipment - 2 cranes, 3 forklifts, 2 generator sets, 3 tractors/loaders/backhoes, and 4 welders

Grading - Tunnel: 1.716 million cy export and 1.201 million cy import for 13,700 linear feet tunnel
Stations: 200,000 cy export
Acres disturbed: 13,700 linear feet x 25 feet wide cut and cover tunnels x 2 ~ 15.7 acres

Architectural Coating - Stations generally use pre-fabricated cladding/tile on on interiors. Exterior of station not painted/embellished (underground and not visible)

Area Coating - Stations generally use pre-fabricated cladding/tile on on interiors. Exterior of station not painted/embellished (underground and not visible)

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	111,284.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	333,852.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	230.00	250.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	450.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	15.70
tblGrading	MaterialExported	0.00	1,916,000.00
tblGrading	MaterialImported	0.00	1,201,000.00
tblLandUse	LandUseSquareFeet	222,570.00	222,568.00

tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2020

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					
2017	2.2379	29.1387	23.1755	0.0668	7.1395	0.7224	7.8618	3.0113	0.6727	3.6840	0.0000	5,996.5445	5,996.5445	0.2088	0.0000	6,000.9293
2018	3.2002	39.9366	33.6725	0.0989	7.3394	1.0201	8.3595	3.0794	0.9507	4.0301	0.0000	8,736.7581	8,736.7581	0.3226	0.0000	8,743.5330
2019	0.5461	4.2544	4.1551	7.5000e-003	0.1337	0.2340	0.3677	0.0360	0.2224	0.2583	0.0000	619.1733	619.1733	0.1073	0.0000	621.4272
Total	**5.9842**	**73.3297**	**61.0031**	**0.1732**	**14.6126**	**1.9765**	**16.5890**	**6.1267**	**1.8458**	**7.9724**	**0.0000**	**15,352.4759**	**15,352.4759**	**0.6388**	**0.0000**	**15,365.8895**

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					
2017	1.4718	22.1977	21.5034	0.0668	3.2712	0.3120	3.5832	1.3183	0.2879	1.6061	0.0000	5,996.5437	5,996.5437	0.2088	0.0000	6,000.9285
2018	2.1325	30.3691	31.7269	0.0989	3.4511	0.4575	3.9086	1.3815	0.4223	1.8037	0.0000	8,736.7569	8,736.7569	0.3226	0.0000	8,743.5318
2019	0.1264	0.9302	4.2144	7.5000e-003	0.0774	0.0127	0.0901	0.0221	0.0123	0.0345	0.0000	619.1728	619.1728	0.1073	0.0000	621.4267
Total	**3.7307**	**53.4970**	**57.4448**	**0.1732**	**6.7997**	**0.7822**	**7.5818**	**2.7218**	**0.7224**	**3.4443**	**0.0000**	**15,352.4734**	**15,352.4734**	**0.6388**	**0.0000**	**15,365.8870**

	ROG	NOx	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	**37.66**	**27.05**	**5.83**	**0.00**	**53.47**	**60.43**	**54.30**	**55.57**	**60.86**	**56.80**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0624	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003
Energy	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	1,717.1477	1,717.1477	0.0396	0.0114	1,721.5109
Mobile	0.6974	2.4529	9.1087	0.0294	1.9673	0.0405	2.0077	0.5270	0.0373	0.5643	0.0000	2,072.8615	2,072.8615	0.0761	0.0000	2,074.4600
Waste						0.0000	0.0000		0.0000	0.0000	56.0235	0.0000	56.0235	3.3109	0.0000	125.5522
Water						0.0000	0.0000		0.0000	0.0000	16.3288	373.2656	389.5944	1.6859	0.0414	437.8408
Total	**1.7824**	**2.6581**	**9.2839**	**0.0306**	**1.9673**	**0.0561**	**2.0234**	**0.5270**	**0.0529**	**0.5799**	**72.3523**	**4,163.2803**	**4,235.6326**	**5.1125**	**0.0528**	**4,359.3697**

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	1.0624	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003
Energy	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	1,717.1477	1,717.1477	0.0396	0.0114	1,721.5109
Mobile	0.6974	2.4529	9.1087	0.0294	1.9673	0.0405	2.0077	0.5270	0.0373	0.5643	0.0000	2,072.8615	2,072.8615	0.0761	0.0000	2,074.4600
Waste						0.0000	0.0000		0.0000	0.0000	56.0235	0.0000	56.0235	3.3109	0.0000	125.5522
Water						0.0000	0.0000		0.0000	0.0000	16.3288	373.2656	389.5944	1.6856	0.0414	437.8148
Total	**1.7824**	**2.6581**	**9.2839**	**0.0306**	**1.9673**	**0.0561**	**2.0234**	**0.5270**	**0.0529**	**0.5799**	**72.3523**	**4,163.2803**	**4,235.6326**	**5.1122**	**0.0528**	**4,359.3436**

	ROG	NOx	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**	**0.01**	**0.11**	**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	Site Preparation	Site Preparation	6/1/2017	11/7/2018	6	450	
2	Building Construction	Building Construction	11/8/2018	8/26/2019	6	250	
3	Paving	Paving	8/27/2019	10/23/2019	6	50	
4	Architectural Coating	Architectural Coating	10/24/2019	11/27/2019	6	30	

Acres of Grading (Site Preparation Phase): 15.7

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Excavators	2	8.00	162	0.38
Site Preparation	Welders	4	8.00	46	0.45
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Site Preparation	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	4	8.00	46	0.45

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
Site Preparation	16	40.00	0.00	389,625.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	93.00	36.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	19.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.2495	0.0000	4.2495	2.2620	0.0000	2.2620	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.8559	7.6285	5.8737	7.2000e-003		0.4213	0.4213		0.3957	0.3957	0.0000	642.3800	642.3800	0.1673	0.0000	645.8934
Total	**0.8559**	**7.6285**	**5.8737**	**7.2000e-003**	**4.2495**	**0.4213**	**4.6708**	**2.2620**	**0.3957**	**2.6577**	**0.0000**	**642.3800**	**642.3800**	**0.1673**	**0.0000**	**645.8934**

3.2 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3676	21.4891	17.0820	0.0591	2.8499	0.3007	3.1506	0.7387	0.2766	1.0153	0.0000	5,316.4955	5,316.4955	0.0394	0.0000	5,317.3237
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	0.0143	0.0211	0.2199	5.1000e-004	0.0401	3.7000e-004	0.0405	0.0107	3.4000e-004	0.0110	0.0000	37.6690	37.6690	2.0500e-003	0.0000	37.7121
Total	**1.3820**	**21.5103**	**17.3018**	**0.0596**	**2.8900**	**0.3011**	**3.1911**	**0.7493**	**0.2770**	**1.0263**	**0.0000**	**5,354.1645**	**5,354.1645**	**0.0415**	**0.0000**	**5,355.0358**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6573	0.0000	1.6573	0.8822	0.0000	0.8822	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0899	0.6874	4.2016	7.2000e-003		0.0109	0.0109		0.0109	0.0109	0.0000	642.3792	642.3792	0.1673	0.0000	645.8927
Total	**0.0899**	**0.6874**	**4.2016**	**7.2000e-003**	**1.6573**	**0.0109**	**1.6682**	**0.8822**	**0.0109**	**0.8931**	**0.0000**	**642.3792**	**642.3792**	**0.1673**	**0.0000**	**645.8927**

3.2 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3676	21.4891	17.0820	0.0591	1.5912	0.3007	1.8919	0.4297	0.2766	0.7063	0.0000	5,316.4955	5,316.4955	0.0394	0.0000	5,317.3237
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	0.0143	0.0211	0.2199	5.1000e-004	0.0227	3.7000e-004	0.0231	6.3900e-003	3.4000e-004	6.7300e-003	0.0000	37.6690	37.6690	2.0500e-003	0.0000	37.7121
Total	**1.3820**	**21.5103**	**17.3018**	**0.0596**	**1.6139**	**0.3011**	**1.9150**	**0.4361**	**0.2770**	**0.7130**	**0.0000**	**5,354.1645**	**5,354.1645**	**0.0415**	**0.0000**	**5,355.0358**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.2495	0.0000	4.2495	2.2620	0.0000	2.2620	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0975	9.8236	8.0567	0.0105		0.5260	0.5260		0.4944	0.4944	0.0000	926.3958	926.3958	0.2403	0.0000	931.4419
Total	**1.0975**	**9.8236**	**8.0567**	**0.0105**	**4.2495**	**0.5260**	**4.7755**	**2.2620**	**0.4944**	**2.7564**	**0.0000**	**926.3958**	**926.3958**	**0.2403**	**0.0000**	**931.4419**

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9553	29.1304	24.4522	0.0861	3.0029	0.4383	3.4412	0.7942	0.4032	1.1974	0.0000	7,629.4415	7,629.4415	0.0583	0.0000	7,630.6663
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	0.0187	0.0280	0.2906	7.4000e-004	0.0585	5.2000e-004	0.0590	0.0155	4.8000e-004	0.0160	0.0000	52.9455	52.9455	2.7800e-003	0.0000	53.0039
Total	**1.9740**	**29.1584**	**24.7427**	**0.0869**	**3.0614**	**0.4389**	**3.5002**	**0.8097**	**0.4037**	**1.2135**	**0.0000**	**7,682.3870**	**7,682.3870**	**0.0611**	**0.0000**	**7,683.6702**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6573	0.0000	1.6573	0.8822	0.0000	0.8822	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1311	1.0029	6.1302	0.0105		0.0159	0.0159		0.0159	0.0159	0.0000	926.3947	926.3947	0.2403	0.0000	931.4408
Total	**0.1311**	**1.0029**	**6.1302**	**0.0105**	**1.6573**	**0.0159**	**1.6732**	**0.8822**	**0.0159**	**0.8981**	**0.0000**	**926.3947**	**926.3947**	**0.2403**	**0.0000**	**931.4408**

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9553	29.1304	24.4522	0.0861	1.7441	0.4383	2.1825	0.4852	0.4032	0.8885	0.0000	7,629.4415	7,629.4415	0.0583	0.0000	7,630.6663
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	0.0187	0.0280	0.2906	7.4000e-004	0.0332	5.2000e-004	0.0337	9.3200e-003	4.8000e-004	9.8000e-003	0.0000	52.9455	52.9455	2.7800e-003	0.0000	53.0039
Total	**1.9740**	**29.1584**	**24.7427**	**0.0869**	**1.7773**	**0.4389**	**2.2162**	**0.4946**	**0.4037**	**0.8983**	**0.0000**	**7,682.3870**	**7,682.3870**	**0.0611**	**0.0000**	**7,683.6702**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1147	0.8800	0.6674	1.0600e-003		0.0540	0.0540		0.0515	0.0515	0.0000	90.8146	90.8146	0.0200	0.0000	91.2343
Total	**0.1147**	**0.8800**	**0.6674**	**1.0600e-003**		**0.0540**	**0.0540**		**0.0515**	**0.0515**	**0.0000**	**90.8146**	**90.8146**	**0.0200**	**0.0000**	**91.2343**

3.3 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3800e-003	0.0634	0.0894	1.8000e-004	5.0800e-003	9.5000e-004	6.0400e-003	1.4500e-003	8.8000e-004	2.3300e-003	0.0000	15.9528	15.9528	1.2000e-004	0.0000	15.9553
Worker	7.5100e-003	0.0112	0.1164	3.0000e-004	0.0234	2.1000e-004	0.0237	6.2300e-003	1.9000e-004	6.4200e-003	0.0000	21.2080	21.2080	1.1100e-003	0.0000	21.2314
Total	**0.0139**	**0.0746**	**0.2058**	**4.8000e-004**	**0.0285**	**1.1600e-003**	**0.0297**	**7.6800e-003**	**1.0700e-003**	**8.7500e-003**	**0.0000**	**37.1607**	**37.1607**	**1.2300e-003**	**0.0000**	**37.1866**

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	0.0134	0.1331	0.6482	1.0600e-003		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	90.8145	90.8145	0.0200	0.0000	91.2342
Total	**0.0134**	**0.1331**	**0.6482**	**1.0600e-003**		**1.5200e-003**	**1.5200e-003**		**1.5200e-003**	**1.5200e-003**	**0.0000**	**90.8145**	**90.8145**	**0.0200**	**0.0000**	**91.2342**

3.3 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3800e-003	0.0634	0.0894	1.8000e-004	3.2400e-003	9.5000e-004	4.1900e-003	1.0000e-003	8.8000e-004	1.8700e-003	0.0000	15.9528	15.9528	1.2000e-004	0.0000	15.9553
Worker	7.5100e-003	0.0112	0.1164	3.0000e-004	0.0133	2.1000e-004	0.0135	3.7300e-003	1.9000e-004	3.9300e-003	0.0000	21.2080	21.2080	1.1100e-003	0.0000	21.2314
Total	**0.0139**	**0.0746**	**0.2058**	**4.8000e-004**	**0.0165**	**1.1600e-003**	**0.0177**	**4.7300e-003**	**1.0700e-003**	**5.8000e-003**	**0.0000**	**37.1607**	**37.1607**	**1.2300e-003**	**0.0000**	**37.1866**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4470	3.5453	2.8793	4.6900e-003		0.2068	0.2068		0.1972	0.1972	0.0000	399.2996	399.2996	0.0857	0.0000	401.0993
Total	**0.4470**	**3.5453**	**2.8793**	**4.6900e-003**		**0.2068**	**0.2068**		**0.1972**	**0.1972**	**0.0000**	**399.2996**	**399.2996**	**0.0857**	**0.0000**	**401.0993**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0268	0.2594	0.3833	8.0000e-004	0.0225	4.0200e-003	0.0266	6.4300e-003	3.7000e-003	0.0101	0.0000	69.2948	69.2948	5.1000e-004	0.0000	69.3056
Worker	0.0305	0.0456	0.4729	1.3200e-003	0.1040	9.1000e-004	0.1049	0.0276	8.4000e-004	0.0285	0.0000	90.3632	90.3632	4.6200e-003	0.0000	90.4602
Total	**0.0573**	**0.3049**	**0.8562**	**2.1200e-003**	**0.1265**	**4.9300e-003**	**0.1314**	**0.0340**	**4.5400e-003**	**0.0386**	**0.0000**	**159.6581**	**159.6581**	**5.1300e-003**	**0.0000**	**159.7659**

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	0.0596	0.5905	2.8747	4.6900e-003		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	399.2991	399.2991	0.0857	0.0000	401.0988
Total	**0.0596**	**0.5905**	**2.8747**	**4.6900e-003**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**399.2991**	**399.2991**	**0.0857**	**0.0000**	**401.0988**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0268	0.2594	0.3833	8.0000e-004	0.0144	4.0200e-003	0.0184	4.4200e-003	3.7000e-003	8.1200e-003	0.0000	69.2948	69.2948	5.1000e-004	0.0000	69.3056
Worker	0.0305	0.0456	0.4729	1.3200e-003	0.0589	9.1000e-004	0.0598	0.0166	8.4000e-004	0.0174	0.0000	90.3632	90.3632	4.6200e-003	0.0000	90.4602
Total	**0.0573**	**0.3049**	**0.8562**	**2.1200e-003**	**0.0733**	**4.9300e-003**	**0.0782**	**0.0210**	**4.5400e-003**	**0.0255**	**0.0000**	**159.6581**	**159.6581**	**5.1300e-003**	**0.0000**	**159.7659**

3.4 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0357	0.3734	0.3591	5.6000e-004		0.0202	0.0202		0.0186	0.0186	0.0000	50.0987	50.0987	0.0159	0.0000	50.4315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0357**	**0.3734**	**0.3591**	**5.6000e-004**		**0.0202**	**0.0202**		**0.0186**	**0.0186**	**0.0000**	**50.0987**	**50.0987**	**0.0159**	**0.0000**	**50.4315**

3.4 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	1.8000e-003	0.0187	5.0000e-005	4.1100e-003	4.0000e-005	4.1500e-003	1.0900e-003	3.0000e-005	1.1200e-003	0.0000	3.5722	3.5722	1.8000e-004	0.0000	3.5761
Total	**1.2100e-003**	**1.8000e-003**	**0.0187**	**5.0000e-005**	**4.1100e-003**	**4.0000e-005**	**4.1500e-003**	**1.0900e-003**	**3.0000e-005**	**1.1200e-003**	**0.0000**	**3.5722**	**3.5722**	**1.8000e-004**	**0.0000**	**3.5761**

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	6.8600e-003	0.0297	0.4232	5.6000e-004		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	50.0986	50.0986	0.0159	0.0000	50.4315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.8600e-003**	**0.0297**	**0.4232**	**5.6000e-004**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**50.0986**	**50.0986**	**0.0159**	**0.0000**	**50.4315**

3.4 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	1.8000e-003	0.0187	5.0000e-005	2.3300e-003	4.0000e-005	2.3600e-003	6.5000e-004	3.0000e-005	6.9000e-004	0.0000	3.5722	3.5722	1.8000e-004	0.0000	3.5761
Total	**1.2100e-003**	**1.8000e-003**	**0.0187**	**5.0000e-005**	**2.3300e-003**	**4.0000e-005**	**2.3600e-003**	**6.5000e-004**	**3.0000e-005**	**6.9000e-004**	**0.0000**	**3.5722**	**3.5722**	**1.8000e-004**	**0.0000**	**3.5761**

3.5 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8367
Total	**4.0000e-003**	**0.0275**	**0.0276**	**4.0000e-005**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**3.8299**	**3.8299**	**3.2000e-004**	**0.0000**	**3.8367**

3.5 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.3700e-003	0.0142	4.0000e-005	3.1200e-003	3.0000e-005	3.1500e-003	8.3000e-004	3.0000e-005	8.5000e-004	0.0000	2.7149	2.7149	1.4000e-004	0.0000	2.7178
Total	**9.2000e-004**	**1.3700e-003**	**0.0142**	**4.0000e-005**	**3.1200e-003**	**3.0000e-005**	**3.1500e-003**	**8.3000e-004**	**3.0000e-005**	**8.5000e-004**	**0.0000**	**2.7149**	**2.7149**	**1.4000e-004**	**0.0000**	**2.7178**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	1.9300e-003	0.0275	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8367
Total	**4.5000e-004**	**1.9300e-003**	**0.0275**	**4.0000e-005**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**3.8299**	**3.8299**	**3.2000e-004**	**0.0000**	**3.8367**

3.5 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	1.3700e-003	0.0142	4.0000e-005	1.7700e-003	3.0000e-005	1.8000e-003	5.0000e-004	3.0000e-005	5.2000e-004	0.0000	2.7149	2.7149	1.4000e-004	0.0000	2.7178
Total	**9.2000e-004**	**1.3700e-003**	**0.0142**	**4.0000e-005**	**1.7700e-003**	**3.0000e-005**	**1.8000e-003**	**5.0000e-004**	**3.0000e-005**	**5.2000e-004**	**0.0000**	**2.7149**	**2.7149**	**1.4000e-004**	**0.0000**	**2.7178**

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	0.6974	2.4529	9.1087	0.0294	1.9673	0.0405	2.0077	0.5270	0.0373	0.5643	0.0000	2,072.8615	2,072.8615	0.0761	0.0000	2,074.4600
Unmitigated	0.6974	2.4529	9.1087	0.0294	1.9673	0.0405	2.0077	0.5270	0.0373	0.5643	0.0000	2,072.8615	2,072.8615	0.0761	0.0000	2,074.4600

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1,551.31	293.79	151.35	5,188,489	5,188,489
Total	1,551.31	293.79	151.35	5,188,489	5,188,489

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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.530094	0.057664	0.178835	0.124843	0.039181	0.006319	0.017052	0.034445	0.002509	0.003148	0.003693	0.000531	0.001685

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,493.7399	1,493.7399	0.0353	7.3000e-003	1,496.7434
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,493.7399	1,493.7399	0.0353	7.3000e-003	1,496.7434
NaturalGas Mitigated	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	223.4078	223.4078	4.2800e-003	4.1000e-003	224.7674
NaturalGas Unmitigated	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	223.4078	223.4078	4.2800e-003	4.1000e-003	224.7674

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					
General Light Industry	4.1865e+006	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	223.4078	223.4078	4.2800e-003	4.1000e-003	224.7674
Total		**0.0226**	**0.2052**	**0.1724**	**1.2300e-003**		**0.0156**	**0.0156**		**0.0156**	**0.0156**	**0.0000**	**223.4078**	**223.4078**	**4.2800e-003**	**4.1000e-003**	**224.7674**

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					
General Light Industry	4.1865e+006	0.0226	0.2052	0.1724	1.2300e-003		0.0156	0.0156		0.0156	0.0156	0.0000	223.4078	223.4078	4.2800e-003	4.1000e-003	224.7674
Total		**0.0226**	**0.2052**	**0.1724**	**1.2300e-003**		**0.0156**	**0.0156**		**0.0156**	**0.0156**	**0.0000**	**223.4078**	**223.4078**	**4.2800e-003**	**4.1000e-003**	**224.7674**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2.68194e+006	1,493.7399	0.0353	7.3000e-003	1,496.7434
Total		**1,493.7399**	**0.0353**	**7.3000e-003**	**1,496.7434**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2.68194e+006	1,493.7399	0.0353	7.3000e-003	1,496.7434
Total		**1,493.7399**	**0.0353**	**7.3000e-003**	**1,496.7434**

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	1.0624	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003
Unmitigated	1.0624	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.7000e-004	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003
Total	**1.0624**	**3.0000e-005**	**2.8600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.5200e-003**	**5.5200e-003**	**1.0000e-005**	**0.0000**	**5.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8043					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.7000e-004	3.0000e-005	2.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.5200e-003	5.5200e-003	1.0000e-005	0.0000	5.8300e-003
Total	**1.0624**	**3.0000e-005**	**2.8600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.5200e-003**	**5.5200e-003**	**1.0000e-005**	**0.0000**	**5.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	389.5944	1.6856	0.0414	437.8148
Unmitigated	389.5944	1.6859	0.0414	437.8408

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	51.4693 / 0	389.5944	1.6859	0.0414	437.8408
Total		**389.5944**	**1.6859**	**0.0414**	**437.8408**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	51.4693 / 0	389.5944	1.6856	0.0414	437.8148
Total		**389.5944**	**1.6856**	**0.0414**	**437.8148**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	56.0235	3.3109	0.0000	125.5522
Unmitigated	56.0235	3.3109	0.0000	125.5522

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	275.99	56.0235	3.3109	0.0000	125.5522
Total		**56.0235**	**3.3109**	**0.0000**	**125.5522**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	275.99	56.0235	3.3109	0.0000	125.5522
Total		**56.0235**	**3.3109**	**0.0000**	**125.5522**

9.0 Operational Offroad

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

10.0 Vegetation

Maintenance Facility

ESFV Maintenance Facility

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	70.00	1000sqft	26.00	70,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Assuming a 12-month construction period starting June 2017

Land Use - Structures (Admin, Blowdown, Car Wash, Maintenance) total 70,000 square feet on a 26-acre site.

Construction Phase - Assuming a 6-day work week, total construction days would be ~ 310, starting June 2017.

Grading - Site acreage is 26 acres

Demolition - Approximately 2/3 of the maintenance facility site currently occupied by structures ~ 750,000 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area three times daily
Clean paved roads
Tier 4 Final engines

Mobile Commute Mitigation - All Metro employees ride Metro vehicles free of charge

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	20.00
tblConstructionPhase	NumDays	440.00	204.00

tblConstructionPhase	NumDays	30.00	36.00
tblConstructionPhase	NumDays	35.00	20.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	26.00
tblLandUse	LotAcreage	1.61	26.00
tblProjectCharacteristics	OperationalYear	2014	2018

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					
2017	0.3704	3.6187	2.8361	4.6000e-003	0.7116	0.1913	0.9028	0.2220	0.1784	0.4004	0.0000	410.5574	410.5574	0.0715	0.0000	412.0578
2018	0.9552	1.2479	1.0579	1.7300e-003	0.0191	0.0766	0.0957	5.1200e-003	0.0719	0.0770	0.0000	149.7257	149.7257	0.0326	0.0000	150.4108
Total	**1.3256**	**4.8666**	**3.8939**	**6.3300e-003**	**0.7306**	**0.2679**	**0.9985**	**0.2271**	**0.2503**	**0.4774**	**0.0000**	**560.2830**	**560.2830**	**0.1041**	**0.0000**	**562.4685**

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					
2017	0.0782	0.7274	2.3405	4.6000e-003	0.2896	0.0120	0.3016	0.0905	0.0114	0.1018	0.0000	410.5570	410.5570	0.0715	0.0000	412.0574
2018	0.8372	0.1545	1.0767	1.7300e-003	0.0110	2.8700e-003	0.0139	3.1400e-003	2.8100e-003	5.9600e-003	0.0000	149.7255	149.7255	0.0326	0.0000	150.4106
Total	**0.9155**	**0.8819**	**3.4172**	**6.3300e-003**	**0.3006**	**0.0148**	**0.3154**	**0.0936**	**0.0142**	**0.1078**	**0.0000**	**560.2826**	**560.2826**	**0.1041**	**0.0000**	**562.4681**

	ROG	NOx	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	**30.94**	**81.88**	**12.24**	**0.00**	**58.86**	**94.47**	**68.41**	**58.79**	**94.34**	**77.43**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3341	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003
Energy	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	540.0612	540.0612	0.0124	3.5800e-003	541.4335
Mobile	0.2475	0.9015	3.2716	9.2500e-003	0.6186	0.0133	0.6319	0.1657	0.0123	0.1779	0.0000	696.3425	696.3425	0.0270	0.0000	696.9089
Waste						0.0000	0.0000		0.0000	0.0000	17.6196	0.0000	17.6196	1.0413	0.0000	39.4867
Water						0.0000	0.0000		0.0000	0.0000	5.1356	117.3949	122.5305	0.5302	0.0130	137.7044
Total	**0.5887**	**0.9661**	**3.3268**	**9.6400e-003**	**0.6186**	**0.0182**	**0.6368**	**0.1657**	**0.0172**	**0.1829**	**22.7552**	**1,353.8003**	**1,376.5555**	**1.6109**	**0.0166**	**1,415.5352**

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	0.3341	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003
Energy	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	540.0612	540.0612	0.0124	3.5800e-003	541.4335
Mobile	0.2475	0.9015	3.2716	9.2500e-003	0.6186	0.0133	0.6319	0.1657	0.0123	0.1779	0.0000	696.3425	696.3425	0.0270	0.0000	696.9089
Waste						0.0000	0.0000		0.0000	0.0000	17.6196	0.0000	17.6196	1.0413	0.0000	39.4867
Water						0.0000	0.0000		0.0000	0.0000	5.1356	117.3949	122.5305	0.5302	0.0130	137.6962
Total	**0.5887**	**0.9661**	**3.3268**	**9.6400e-003**	**0.6186**	**0.0182**	**0.6368**	**0.1657**	**0.0172**	**0.1829**	**22.7552**	**1,353.8003**	**1,376.5555**	**1.6109**	**0.0166**	**1,415.5270**

	ROG	NOx	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**	**0.01**	**0.12**	**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	6/1/2017	7/12/2017	6	36	
2	Site Preparation	Site Preparation	7/13/2017	8/16/2017	6	30	
3	Building Construction	Building Construction	8/17/2017	4/11/2018	6	204	
4	Paving	Paving	4/12/2018	5/4/2018	6	20	
5	Architectural Coating	Architectural Coating	5/5/2018	5/28/2018	6	20	

Acres of Grading (Site Preparation Phase): 26

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 105,000; Non-Residential Outdoor: 35,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

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	3,411.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	29.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3691	0.0000	0.3691	0.0559	0.0000	0.0559	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0729	0.7686	0.6101	7.2000e-004		0.0383	0.0383		0.0356	0.0356	0.0000	65.9128	65.9128	0.0181	0.0000	66.2925
Total	**0.0729**	**0.7686**	**0.6101**	**7.2000e-004**	**0.3691**	**0.0383**	**0.4074**	**0.0559**	**0.0356**	**0.0915**	**0.0000**	**65.9128**	**65.9128**	**0.0181**	**0.0000**	**66.2925**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0294	0.4626	0.3677	1.2700e-003	0.0292	6.4700e-003	0.0357	8.0100e-003	5.9500e-003	0.0140	0.0000	114.4516	114.4516	8.5000e-004	0.0000	114.4694
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	1.5600e-003	0.0162	4.0000e-005	2.9600e-003	3.0000e-005	2.9900e-003	7.9000e-004	3.0000e-005	8.1000e-004	0.0000	2.7789	2.7789	1.5000e-004	0.0000	2.7820
Total	**0.0305**	**0.4642**	**0.3840**	**1.3100e-003**	**0.0322**	**6.5000e-003**	**0.0387**	**8.8000e-003**	**5.9800e-003**	**0.0148**	**0.0000**	**117.2304**	**117.2304**	**1.0000e-003**	**0.0000**	**117.2515**

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					0.1440	0.0000	0.1440	0.0218	0.0000	0.0218	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5300e-003	0.0370	0.4289	7.2000e-004		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	65.9127	65.9127	0.0181	0.0000	66.2924
Total	**8.5300e-003**	**0.0370**	**0.4289**	**7.2000e-004**	**0.1440**	**1.1400e-003**	**0.1451**	**0.0218**	**1.1400e-003**	**0.0229**	**0.0000**	**65.9127**	**65.9127**	**0.0181**	**0.0000**	**66.2924**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0294	0.4626	0.3677	1.2700e-003	0.0182	6.4700e-003	0.0247	5.3000e-003	5.9500e-003	0.0113	0.0000	114.4516	114.4516	8.5000e-004	0.0000	114.4694
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	1.5600e-003	0.0162	4.0000e-005	1.6800e-003	3.0000e-005	1.7000e-003	4.7000e-004	3.0000e-005	5.0000e-004	0.0000	2.7789	2.7789	1.5000e-004	0.0000	2.7820
Total	**0.0305**	**0.4642**	**0.3840**	**1.3100e-003**	**0.0199**	**6.5000e-003**	**0.0264**	**5.7700e-003**	**5.9800e-003**	**0.0118**	**0.0000**	**117.2304**	**117.2304**	**1.0000e-003**	**0.0000**	**117.2515**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2848	0.0000	0.2848	0.1505	0.0000	0.1505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0726	0.7763	0.5910	5.9000e-004		0.0413	0.0413		0.0380	0.0380	0.0000	54.4731	54.4731	0.0167	0.0000	54.8236
Total	**0.0726**	**0.7763**	**0.5910**	**5.9000e-004**	**0.2848**	**0.0413**	**0.3261**	**0.1505**	**0.0380**	**0.1885**	**0.0000**	**54.4731**	**54.4731**	**0.0167**	**0.0000**	**54.8236**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.5600e-003	0.0162	4.0000e-005	2.9600e-003	3.0000e-005	2.9900e-003	7.9000e-004	3.0000e-005	8.1000e-004	0.0000	2.7789	2.7789	1.5000e-004	0.0000	2.7820
Total	**1.0600e-003**	**1.5600e-003**	**0.0162**	**4.0000e-005**	**2.9600e-003**	**3.0000e-005**	**2.9900e-003**	**7.9000e-004**	**3.0000e-005**	**8.1000e-004**	**0.0000**	**2.7789**	**2.7789**	**1.5000e-004**	**0.0000**	**2.7820**

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					0.1111	0.0000	0.1111	0.0587	0.0000	0.0587	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1400e-003	0.0309	0.3186	5.9000e-004		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	54.4730	54.4730	0.0167	0.0000	54.8235
Total	**7.1400e-003**	**0.0309**	**0.3186**	**5.9000e-004**	**0.1111**	**9.5000e-004**	**0.1120**	**0.0587**	**9.5000e-004**	**0.0596**	**0.0000**	**54.4730**	**54.4730**	**0.0167**	**0.0000**	**54.8235**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	1.5600e-003	0.0162	4.0000e-005	1.6800e-003	3.0000e-005	1.7000e-003	4.7000e-004	3.0000e-005	5.0000e-004	0.0000	2.7789	2.7789	1.5000e-004	0.0000	2.7820
Total	**1.0600e-003**	**1.5600e-003**	**0.0162**	**4.0000e-005**	**1.6800e-003**	**3.0000e-005**	**1.7000e-003**	**4.7000e-004**	**3.0000e-005**	**5.0000e-004**	**0.0000**	**2.7789**	**2.7789**	**1.5000e-004**	**0.0000**	**2.7820**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1815	1.5447	1.0606	1.5700e-003		0.1042	0.1042		0.0979	0.0979	0.0000	140.0953	140.0953	0.0345	0.0000	140.8194
Total	**0.1815**	**1.5447**	**1.0606**	**1.5700e-003**		**0.1042**	**0.1042**		**0.0979**	**0.0979**	**0.0000**	**140.0953**	**140.0953**	**0.0345**	**0.0000**	**140.8194**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2700e-003	0.0536	0.0724	1.4000e-004	3.9500e-003	7.9000e-004	4.7400e-003	1.1300e-003	7.2000e-004	1.8500e-003	0.0000	12.6064	12.6064	9.0000e-005	0.0000	12.6083
Worker	6.6400e-003	9.7900e-003	0.1019	2.4000e-004	0.0186	1.7000e-004	0.0188	4.9400e-003	1.6000e-004	5.1000e-003	0.0000	17.4605	17.4605	9.5000e-004	0.0000	17.4805
Total	**0.0119**	**0.0634**	**0.1743**	**3.8000e-004**	**0.0225**	**9.6000e-004**	**0.0235**	**6.0700e-003**	**8.8000e-004**	**6.9500e-003**	**0.0000**	**30.0669**	**30.0669**	**1.0400e-003**	**0.0000**	**30.0888**

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	0.0191	0.1304	1.0185	1.5700e-003		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	140.0951	140.0951	0.0345	0.0000	140.8192
Total	**0.0191**	**0.1304**	**1.0185**	**1.5700e-003**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**140.0951**	**140.0951**	**0.0345**	**0.0000**	**140.8192**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2700e-003	0.0536	0.0724	1.4000e-004	2.5100e-003	7.9000e-004	3.3000e-003	7.7000e-004	7.2000e-004	1.5000e-003	0.0000	12.6064	12.6064	9.0000e-005	0.0000	12.6083
Worker	6.6400e-003	9.7900e-003	0.1019	2.4000e-004	0.0105	1.7000e-004	0.0107	2.9600e-003	1.6000e-004	3.1200e-003	0.0000	17.4605	17.4605	9.5000e-004	0.0000	17.4805
Total	**0.0119**	**0.0634**	**0.1743**	**3.8000e-004**	**0.0130**	**9.6000e-004**	**0.0140**	**3.7300e-003**	**8.8000e-004**	**4.6200e-003**	**0.0000**	**30.0669**	**30.0669**	**1.0400e-003**	**0.0000**	**30.0888**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1161	1.0119	0.7627	1.1700e-003		0.0650	0.0650		0.0611	0.0611	0.0000	102.9948	102.9948	0.0252	0.0000	103.5241
Total	**0.1161**	**1.0119**	**0.7627**	**1.1700e-003**		**0.0650**	**0.0650**		**0.0611**	**0.0611**	**0.0000**	**102.9948**	**102.9948**	**0.0252**	**0.0000**	**103.5241**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6800e-003	0.0367	0.0517	1.0000e-004	2.9400e-003	5.5000e-004	3.4900e-003	8.4000e-004	5.1000e-004	1.3400e-003	0.0000	9.2191	9.2191	7.0000e-005	0.0000	9.2205
Worker	4.4300e-003	6.6100e-003	0.0686	1.8000e-004	0.0138	1.2000e-004	0.0140	3.6700e-003	1.1000e-004	3.7900e-003	0.0000	12.5076	12.5076	6.6000e-004	0.0000	12.5214
Total	**8.1100e-003**	**0.0433**	**0.1203**	**2.8000e-004**	**0.0168**	**6.7000e-004**	**0.0174**	**4.5100e-003**	**6.2000e-004**	**5.1300e-003**	**0.0000**	**21.7267**	**21.7267**	**7.3000e-004**	**0.0000**	**21.7420**

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	0.0142	0.0970	0.7574	1.1700e-003		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	102.9947	102.9947	0.0252	0.0000	103.5240
Total	**0.0142**	**0.0970**	**0.7574**	**1.1700e-003**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**102.9947**	**102.9947**	**0.0252**	**0.0000**	**103.5240**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6800e-003	0.0367	0.0517	1.0000e-004	1.8700e-003	5.5000e-004	2.4200e-003	5.8000e-004	5.1000e-004	1.0800e-003	0.0000	9.2191	9.2191	7.0000e-005	0.0000	9.2205
Worker	4.4300e-003	6.6100e-003	0.0686	1.8000e-004	7.8300e-003	1.2000e-004	7.9600e-003	2.2000e-003	1.1000e-004	2.3200e-003	0.0000	12.5076	12.5076	6.6000e-004	0.0000	12.5214
Total	**8.1100e-003**	**0.0433**	**0.1203**	**2.8000e-004**	**9.7000e-003**	**6.7000e-004**	**0.0104**	**2.7800e-003**	**6.2000e-004**	**3.4000e-003**	**0.0000**	**21.7267**	**21.7267**	**7.3000e-004**	**0.0000**	**21.7420**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0161**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	5.3000e-004	7.9000e-004	8.1600e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4872	1.4872	8.0000e-005	0.0000	1.4889
Total	**5.3000e-004**	**7.9000e-004**	**8.1600e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4872**	**1.4872**	**8.0000e-005**	**0.0000**	**1.4889**

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	2.7500e-003	0.0119	0.1693	2.2000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7500e-003**	**0.0119**	**0.1693**	**2.2000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	5.3000e-004	7.9000e-004	8.1600e-003	2.0000e-005	9.3000e-004	1.0000e-005	9.5000e-004	2.6000e-004	1.0000e-005	2.8000e-004	0.0000	1.4872	1.4872	8.0000e-005	0.0000	1.4889
Total	**5.3000e-004**	**7.9000e-004**	**8.1600e-003**	**2.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.5000e-004**	**2.6000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**1.4872**	**1.4872**	**8.0000e-005**	**0.0000**	**1.4889**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0201	0.0185	3.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.8141**	**0.0201**	**0.0185**	**3.0000e-005**		**1.5100e-003**	**1.5100e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	2.1000e-004	3.1000e-004	3.2600e-003	1.0000e-005	6.6000e-004	1.0000e-005	6.6000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.5949	0.5949	3.0000e-005	0.0000	0.5956
Total	**2.1000e-004**	**3.1000e-004**	**3.2600e-003**	**1.0000e-005**	**6.6000e-004**	**1.0000e-005**	**6.6000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.5949**	**0.5949**	**3.0000e-005**	**0.0000**	**0.5956**

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	0.8111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	2.4000e-004	0.0000	2.5584
Total	**0.8114**	**1.2900e-003**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**2.4000e-004**	**0.0000**	**2.5584**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	2.1000e-004	3.1000e-004	3.2600e-003	1.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	0.5949	0.5949	3.0000e-005	0.0000	0.5956
Total	**2.1000e-004**	**3.1000e-004**	**3.2600e-003**	**1.0000e-005**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**1.0000e-004**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**0.5949**	**0.5949**	**3.0000e-005**	**0.0000**	**0.5956**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Transit Subsidy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.2475	0.9015	3.2716	9.2500e-003	0.6186	0.0133	0.6319	0.1657	0.0123	0.1779	0.0000	696.3425	696.3425	0.0270	0.0000	696.9089
Unmitigated	0.2475	0.9015	3.2716	9.2500e-003	0.6186	0.0133	0.6319	0.1657	0.0123	0.1779	0.0000	696.3425	696.3425	0.0270	0.0000	696.9089

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	487.90	92.40	47.60	1,631,820	1,631,820
Total	487.90	92.40	47.60	1,631,820	1,631,820

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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.531767	0.058060	0.178534	0.124864	0.038964	0.006284	0.016861	0.033134	0.002486	0.003151	0.003685	0.000540	0.001671

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	469.7971	469.7971	0.0111	2.3000e-003	470.7417
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	469.7971	469.7971	0.0111	2.3000e-003	470.7417
NaturalGas Mitigated	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.2641	70.2641	1.3500e-003	1.2900e-003	70.6917
NaturalGas Unmitigated	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.2641	70.2641	1.3500e-003	1.2900e-003	70.6917

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					
General Light Industry	1.3167e+006	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.2641	70.2641	1.3500e-003	1.2900e-003	70.6917
Total		**7.1000e-003**	**0.0645**	**0.0542**	**3.9000e-004**		**4.9100e-003**	**4.9100e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**70.2641**	**70.2641**	**1.3500e-003**	**1.2900e-003**	**70.6917**

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					
General Light Industry	1.3167e+006	7.1000e-003	0.0645	0.0542	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.2641	70.2641	1.3500e-003	1.2900e-003	70.6917
Total		**7.1000e-003**	**0.0645**	**0.0542**	**3.9000e-004**		**4.9100e-003**	**4.9100e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**70.2641**	**70.2641**	**1.3500e-003**	**1.2900e-003**	**70.6917**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	843500	469.7971	0.0111	2.3000e-003	470.7417
Total		**469.7971**	**0.0111**	**2.3000e-003**	**470.7417**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	843500	469.7971	0.0111	2.3000e-003	470.7417
Total		**469.7971**	**0.0111**	**2.3000e-003**	**470.7417**

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	0.3341	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003
Unmitigated	0.3341	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2530					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003
Total	**0.3342**	**1.0000e-005**	**9.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7400e-003**	**1.7400e-003**	**0.0000**	**0.0000**	**1.8400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.2530					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7400e-003	1.7400e-003	0.0000	0.0000	1.8400e-003
Architectural Coating	0.0811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3342**	**1.0000e-005**	**9.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7400e-003**	**1.7400e-003**	**0.0000**	**0.0000**	**1.8400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	122.5305	0.5302	0.0130	137.6962
Unmitigated	122.5305	0.5302	0.0130	137.7044

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	16.1875 / 0	122.5305	0.5302	0.0130	137.7044
Total		**122.5305**	**0.5302**	**0.0130**	**137.7044**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	16.1875 / 0	122.5305	0.5302	0.0130	137.6962
Total		**122.5305**	**0.5302**	**0.0130**	**137.6962**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.6196	1.0413	0.0000	39.4867
Unmitigated	17.6196	1.0413	0.0000	39.4867

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	86.8	17.6196	1.0413	0.0000	39.4867
Total		**17.6196**	**1.0413**	**0.0000**	**39.4867**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	86.8	17.6196	1.0413	0.0000	39.4867
Total		**17.6196**	**1.0413**	**0.0000**	**39.4867**

9.0 Operational Offroad

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

10.0 Vegetation

Bridges/TPSS/Miscellaneous

ESFV Bridges/TPSS/Miscellaneous

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	50.00	1000sqft	1.15	50,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2014
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - For bridges, TPSS installation, and miscellaneous construction activities

Land Use - Assumes a maximum of 9 TPSS units (1 per mile), and the pedestrian/LRT/Metrolink bridges

Construction Phase - Assumes 12-month construction period starting June 2017, 6-day work week

Off-road Equipment - Defaults

Trips and VMT - assumes 1 daily cement truck

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily
Clean paved roads
Tier 4 Final equipment

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	200.00	313.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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					
2017	0.2839	1.8206	1.5072	2.4400e-003	0.0256	0.1132	0.1388	6.8700e-003	0.1092	0.1161	0.0000	202.9772	202.9772	0.0366	0.0000	203.7461
2018	0.1767	1.1726	1.0297	1.7300e-003	0.0182	0.0692	0.0873	4.8800e-003	0.0668	0.0717	0.0000	142.7492	142.7492	0.0247	0.0000	143.2683
Total	**0.4605**	**2.9932**	**2.5369**	**4.1700e-003**	**0.0437**	**0.1824**	**0.2261**	**0.0118**	**0.1760**	**0.1877**	**0.0000**	**345.7264**	**345.7264**	**0.0613**	**0.0000**	**347.0144**

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					
2017	0.0402	0.4113	1.3948	2.4400e-003	0.0148	3.8500e-003	0.0186	4.2300e-003	3.7600e-003	8.0000e-003	0.0000	202.9770	202.9770	0.0366	0.0000	203.7459
2018	0.0278	0.2879	0.9807	1.7300e-003	0.0105	2.6900e-003	0.0132	3.0100e-003	2.6400e-003	5.6400e-003	0.0000	142.7491	142.7491	0.0247	0.0000	143.2682
Total	**0.0680**	**0.6992**	**2.3755**	**4.1700e-003**	**0.0253**	**6.5400e-003**	**0.0318**	**7.2400e-003**	**6.4000e-003**	**0.0136**	**0.0000**	**345.7260**	**345.7260**	**0.0613**	**0.0000**	**347.0140**

	ROG	NOx	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	**85.24**	**76.64**	**6.36**	**0.00**	**42.11**	**96.42**	**85.92**	**38.38**	**96.36**	**92.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2387	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	187.6960	187.6960	4.4300e-003	9.2000e-004	188.0735
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	**0.2387**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**187.6973**	**187.6973**	**4.4300e-003**	**9.2000e-004**	**188.0748**

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	0.2387	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	187.6960	187.6960	4.4300e-003	9.2000e-004	188.0735
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	**0.2387**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**187.6973**	**187.6973**	**4.4300e-003**	**9.2000e-004**	**188.0748**

	ROG	NOx	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	Building Construction	Building Construction	6/1/2017	5/31/2018	6	313	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

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
Building Construction	7	21.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2703	1.7485	1.3095	2.0100e-003		0.1122	0.1122		0.1082	0.1082	0.0000	168.8608	168.8608	0.0354	0.0000	169.6049
Total	**0.2703**	**1.7485**	**1.3095**	**2.0100e-003**		**0.1122**	**0.1122**		**0.1082**	**0.1082**	**0.0000**	**168.8608**	**168.8608**	**0.0354**	**0.0000**	**169.6049**

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	6.0000e-003	0.0610	0.0823	1.6000e-004	4.4900e-003	9.0000e-004	5.3900e-003	1.2800e-003	8.2000e-004	2.1100e-003	0.0000	14.3401	14.3401	1.1000e-004	0.0000	14.3423
Worker	7.5200e-003	0.0111	0.1154	2.7000e-004	0.0211	1.9000e-004	0.0213	5.5900e-003	1.8000e-004	5.7700e-003	0.0000	19.7762	19.7762	1.0800e-003	0.0000	19.7989
Total	**0.0135**	**0.0721**	**0.1978**	**4.3000e-004**	**0.0256**	**1.0900e-003**	**0.0266**	**6.8700e-003**	**1.0000e-003**	**7.8800e-003**	**0.0000**	**34.1164**	**34.1164**	**1.1900e-003**	**0.0000**	**34.1412**

3.2 Building Construction - 2017

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	0.0267	0.3392	1.1970	2.0100e-003		2.7600e-003	2.7600e-003		2.7600e-003	2.7600e-003	0.0000	168.8606	168.8606	0.0354	0.0000	169.6047
Total	**0.0267**	**0.3392**	**1.1970**	**2.0100e-003**		**2.7600e-003**	**2.7600e-003**		**2.7600e-003**	**2.7600e-003**	**0.0000**	**168.8606**	**168.8606**	**0.0354**	**0.0000**	**169.6047**

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	6.0000e-003	0.0610	0.0823	1.6000e-004	2.8600e-003	9.0000e-004	3.7600e-003	8.8000e-004	8.2000e-004	1.7000e-003	0.0000	14.3401	14.3401	1.1000e-004	0.0000	14.3423
Worker	7.5200e-003	0.0111	0.1154	2.7000e-004	0.0119	1.9000e-004	0.0121	3.3500e-003	1.8000e-004	3.5300e-003	0.0000	19.7762	19.7762	1.0800e-003	0.0000	19.7989
Total	**0.0135**	**0.0721**	**0.1978**	**4.3000e-004**	**0.0148**	**1.0900e-003**	**0.0159**	**4.2300e-003**	**1.0000e-003**	**5.2300e-003**	**0.0000**	**34.1164**	**34.1164**	**1.1900e-003**	**0.0000**	**34.1412**

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1679	1.1256	0.8993	1.4300e-003		0.0685	0.0685		0.0661	0.0661	0.0000	119.1967	119.1967	0.0239	0.0000	119.6993
Total	**0.1679**	**1.1256**	**0.8993**	**1.4300e-003**		**0.0685**	**0.0685**		**0.0661**	**0.0661**	**0.0000**	**119.1967**	**119.1967**	**0.0239**	**0.0000**	**119.6993**

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	4.0000e-003	0.0398	0.0561	1.1000e-004	3.1900e-003	6.0000e-004	3.7900e-003	9.1000e-004	5.5000e-004	1.4600e-003	0.0000	10.0187	10.0187	7.0000e-005	0.0000	10.0202
Worker	4.7900e-003	7.1500e-003	0.0743	1.9000e-004	0.0150	1.3000e-004	0.0151	3.9700e-003	1.2000e-004	4.1000e-003	0.0000	13.5338	13.5338	7.1000e-004	0.0000	13.5488
Total	**8.7900e-003**	**0.0470**	**0.1304**	**3.0000e-004**	**0.0182**	**7.3000e-004**	**0.0189**	**4.8800e-003**	**6.7000e-004**	**5.5600e-003**	**0.0000**	**23.5525**	**23.5525**	**7.8000e-004**	**0.0000**	**23.5690**

3.2 Building Construction - 2018

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	0.0190	0.2410	0.8503	1.4300e-003		1.9600e-003	1.9600e-003		1.9600e-003	1.9600e-003	0.0000	119.1966	119.1966	0.0239	0.0000	119.6992
Total	**0.0190**	**0.2410**	**0.8503**	**1.4300e-003**		**1.9600e-003**	**1.9600e-003**		**1.9600e-003**	**1.9600e-003**	**0.0000**	**119.1966**	**119.1966**	**0.0239**	**0.0000**	**119.6992**

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	4.0000e-003	0.0398	0.0561	1.1000e-004	2.0300e-003	6.0000e-004	2.6300e-003	6.3000e-004	5.5000e-004	1.1800e-003	0.0000	10.0187	10.0187	7.0000e-005	0.0000	10.0202
Worker	4.7900e-003	7.1500e-003	0.0743	1.9000e-004	8.4800e-003	1.3000e-004	8.6100e-003	2.3800e-003	1.2000e-004	2.5100e-003	0.0000	13.5338	13.5338	7.1000e-004	0.0000	13.5488
Total	**8.7900e-003**	**0.0470**	**0.1304**	**3.0000e-004**	**0.0105**	**7.3000e-004**	**0.0112**	**3.0100e-003**	**6.7000e-004**	**3.6900e-003**	**0.0000**	**23.5525**	**23.5525**	**7.8000e-004**	**0.0000**	**23.5690**

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	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.6960	187.6960	4.4300e-003	9.2000e-004	188.0735
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.6960	187.6960	4.4300e-003	9.2000e-004	188.0735
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	337000	187.6960	4.4300e-003	9.2000e-004	188.0735
Total		**187.6960**	**4.4300e-003**	**9.2000e-004**	**188.0735**

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	337000	187.6960	4.4300e-003	9.2000e-004	188.0735
Total		**187.6960**	**4.4300e-003**	**9.2000e-004**	**188.0735**

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	0.2387	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003
Unmitigated	0.2387	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003
Total	**0.2387**	**1.0000e-005**	**6.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2400e-003**	**1.2400e-003**	**0.0000**	**0.0000**	**1.3200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0579					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1807					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	6.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2400e-003	1.2400e-003	0.0000	0.0000	1.3200e-003
Total	**0.2387**	**1.0000e-005**	**6.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2400e-003**	**1.2400e-003**	**0.0000**	**0.0000**	**1.3200e-003**

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 Vegetation