

West Santa Ana Branch Transit Corridor

Draft EIS/EIR Appendix K
Final Greenhouse Gas Emissions Impact Analysis Report



Metro®

WEST SANTA ANA BRANCH TRANSIT CORRIDOR PROJECT

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Prepared for:



Metro[®]

Los Angeles County
Metropolitan Transportation Authority

Prepared by:



444 South Flower Street
Suite 800
Los Angeles, California 90071



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AUTHOR(S)

Terry A. Hayes, AICP, TAHA

Sam Silverman, TAHA

Anders Sutherland, TAHA

Allyson Dong, TAHA

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Appendix

APPENDIX A: GREENHOUSE GAS EMISSIONS CALCULATION WORKSHEETS

ACRONYMS AND ABBREVIATIONS

AA	Alternatives Analysis
AB	Assembly Bill
APTA	American Public Transportation Association
AQMP	Air Quality Management Plan
BRT	bus rapid transit
Cal/EPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CAPCOA	California Environmental Protection Agency
CARB	California Air Resources Board
CAT	Climate Action Team
CEQ	Council of Quality
CEQA	California Environmental Quality Act
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
ECMP	Energy Conservation and Management Plan
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	Global Warming Potential
I	Interstate
IPCC	Intergovernmental Panel on Climate Change
LA	Los Angeles
LAUS	Los Angeles Union Station
LAX	Los Angeles International Airport
LEED	Leadership in Energy and Environmental Design
LRT	light rail transit
L RTP	Long-Range Transportation Plan
LRV	light rail vehicle
Metro	Los Angeles County Metropolitan Transportation Authority
mph	miles per hour

Acronyms and Abbreviations

MSF	Maintenance and Storage Facility
MTCO _{2e}	million metric tons of CO _{2e}
MWD	Metropolitan Water District
N ₂ O	nitrous oxide
NEPA	National Environmental Policy Act
NOP	Notice of Preparation
OPR	Office of Planning and Research
PEROW	Pacific Electric Right-of-Way
ROW	right-of-way
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SR	State Route
TBM	tunnel boring machine
UPRR	Union Pacific Railroad
USEPA	United States Environmental Protection Agency
VA	Veterans Affairs
VMT	vehicle miles traveled
WSAB	West Santa Ana Branch

1 INTRODUCTION

1.1 Study Background

The West Santa Ana Branch (WSAB) Transit Corridor (Project) is a proposed light rail transit (LRT) line that would extend from four possible northern termini in southeast Los Angeles (LA) County to a southern terminus in the City of Artesia, traversing densely populated, low-income, and heavily transit-dependent communities. The Project would provide reliable, fixed guideway transit service that would increase mobility and connectivity for historically underserved, transit-dependent, and environmental justice communities; reduce travel times on local and regional transportation networks; and accommodate substantial future employment and population growth.

1.2 Alternatives Evaluation, Screening and Selection Process

A wide range of potential alternatives have been considered and screened through the alternatives analysis processes. In March 2010, the Southern California Association of Governments (SCAG) initiated the Pacific Electric Right-of-Way (PEROW)/WSAB Alternatives Analysis (AA) Study (SCAG 2013) in coordination with the relevant cities, Orangeline Development Authority (now known as Eco-Rapid Transit), the Gateway Cities Council of Governments, the Los Angeles County Metropolitan Transportation Authority (Metro), the Orange County Transportation Authority, and the owners of the right-of-way (ROW)—Union Pacific Railroad (UPRR), BNSF Railway, and the Ports of Los Angeles and Long Beach. The AA Study evaluated a wide variety of transit connections and modes for a broader 34-mile corridor from Union Station in downtown Los Angeles to the City of Santa Ana in Orange County. In February 2013, SCAG completed the PEROW/WSAB Corridor Alternatives Analysis Report¹ and recommended two LRT alternatives for further study: West Bank 3 and the East Bank.

Following completion of the AA, Metro completed the WSAB Technical Refinement Study in 2015 focusing on the design and feasibility of five key issue areas along the 19-mile portion of the WSAB Transit Corridor within LA County:

- Access to Union Station in downtown Los Angeles
- Northern Section Options
- Huntington Park Alignment and Stations
- New Metro C (Green) Line Station
- Southern Terminus at Pioneer Station in Artesia

In September 2016, Metro initiated the WSAB Transit Corridor Environmental Study with the goal of obtaining environmental clearance of the Project under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Metro issued a Notice of Preparation (NOP) on May 25, 2017, with a revised NOP issued on June 14, 2017, extending the comment period. In June 2017, Metro held public scoping meetings in the Cities of Bellflower, Los Angeles, South Gate, and Huntington Park. Metro provided Project updates and information to stakeholders with the intent to receive comments and questions through a comment period that ended in August 2017. A total of 1,122 comments were received during the public scoping period from May through August 2017. The comments focused on concerns regarding the Northern

¹ Initial concepts evaluated in the SCAG report included transit connections and modes for the 34-mile corridor from Union Station in downtown Los Angeles to the City of Santa Ana. Modes included low speed magnetic levitation (maglev) heavy rail, light rail, and bus rapid transit (BRT).

Alignment options, with specific concerns related to potential impacts to Alameda Street with an aerial alignment. Given potential visual and construction issues raised through public scoping, additional Northern Alignment concepts were evaluated.

In February 2018, the Metro Board of Directors approved further study of the alignment in the Northern Section due to community input during the 2017 scoping meetings. A second alternatives screening process was initiated to evaluate the original four Northern Alignment options and four new Northern Alignment concepts. The *Final Northern Alignment Alternatives and Concepts Updated Screening Report* was completed in May 2018 (Metro 2018a). The alternatives were further refined and, based on the findings of the second screening analysis and the input gathered from the public outreach meetings, the Metro Board of Directors approved Build Alternatives E and G for further evaluation (now referred to as Alternatives 1 and 2, respectively, in this report).

On July 11, 2018, Metro issued a revised and recirculated CEQA Notice of Preparation, thereby initiating a scoping comment period. The purpose of the revised Notice of Preparation was to inform the public of the Metro Board's decision to carry forward Alternatives 1 and 2 into the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR). During the scoping period, one agency and three public scoping meetings were held in the Cities of Los Angeles, Cudahy, and Bellflower. The meetings provided Project updates and information to stakeholders with the intent to receive comments and questions to support the environmental process. The comment period for scoping ended in August 24, 2018; over 250 comments were received.

Following the July 2018 scoping period, a number of Project refinements were made to address comments received, including additional grade separations, removing certain stations with low ridership, and removing the Bloomfield extension option. The Metro Board adopted these refinements to the project description at their November 2018 meeting.

1.3 Report Purpose and Structure

This Impact Analysis Report examines the environmental effects of the Project as it relates to greenhouse gas (GHG) emissions. The report is organized into nine sections:

- Section 1 – Introduction
- Section 2 – Project Description
- Section 3 – Regulatory Framework
- Section 4 – Affected Environment / Existing Conditions
- Section 5 – Environmental Consequences / Environmental Impacts
- Section 6 – California Environmental Quality Act Determination
- Section 7 – Construction Impacts
- Section 8 – Project Measures and Mitigation Measures
- Section 9 – References

1.4 General Background

The Affected Area for the GHG emissions analysis is the six-county geographic region under SCAG jurisdiction. The term GHG refers to a group of chemical compounds that are generally believed to affect global climate conditions. The “greenhouse effect” is a process by which certain atmospheric gases absorb energy from sunlight within the Earth’s atmosphere and prevent it from being released back into space. This mechanism is responsible for maintaining a warm, habitable environment on the planet’s surface based on the equilibrium concentrations of the gases. The GHGs most prominently associated with man-made sources include carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The global warming potential (GWP) is a metric that indicates the relative climate forcing effect of a kilogram of pollutant emissions averaged over a specified timeframe. GWP has been calculated for each GHG to reflect the atmospheric residence time and how strongly it absorbs energy relative to CO₂ on a per-kilogram basis. Table 1.1 shows 20-year and 100-year horizons used for the GWPs. To account for the higher relative potential, emissions of other GHGs are frequently expressed in CO₂ equivalents (CO₂e) by multiplying the mass emissions by the corresponding GWP value for the averaging period.

Table 1.1. Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (20-Year)	Global Warming Potential (100-Year)
Carbon Dioxide (CO ₂)	100	1	1
Methane	12	84	28
Nitrous Oxide (N ₂ O)	121	264	265

Source: Intergovernmental Panel on Climate Change, 2014

Long-term and irrevocable shifts in weather—including changes in temperature, precipitation, and seasonal patterns—are referred to as climate change. According to the Intergovernmental Panel on Climate Change (IPCC) (IPCC 2014), anticipated effects of climate change caused by GHG emissions include sea-level rise, climate-related hazards, extinction of species, species migration, reduced food production, exacerbated health problems, slower economic growth, and displacement of people. Possible effects of climate change along the California Coast include:

- Sea-level rise that threatens coastal wetlands, infrastructure, and property;
- Increased storm activity, together with sea-level rise, could increase beach erosion and cliff undercutting;
- Warmer temperatures and more frequent storms due to El Niño that bring more rain instead of snow to the Sierra Nevada Mountains, reducing supply of water for summer needs; and
- Decreased summer runoff and warming ocean temperatures that affect salinity, water circulation, and nutrients in the Pacific Ocean, possibly leading to complex changes in marine life.

1.5 Methodology

Environmental impacts and consequences resulting from the generation of GHG emissions were analyzed for the No Build Alternative and Build Alternatives. The NEPA analysis focuses on potential environmental impacts relative to the No Build Alternative in 2042. However, there are no specific criteria or thresholds codified at the federal level for determining whether implementing a proposed light rail project would have an adverse environmental effect related to GHG emissions under NEPA. Draft guidance was published by the Council on Environmental Quality (CEQ) in July 2019, and litigation regarding its codification is ongoing.

In 2017, the Federal Transportation Administration (FTA) published a programmatic study of NEPA transit projects and their associated GHG emissions entitled *Greenhouse Gas Emissions from Transit Projects: Programmatic Assessment* (FTA 2017). The programmatic assessment determined that in general, light rail projects with a high proportion of displaced VMT to annual transit VMT, regardless of length, alignment, and number of stations, consistently result in a net reduction in GHG emissions. The FTA encourages including reference to the conclusions of the programmatic assessment in considering GHG emissions from proposed transit planning projects. GHG emissions that would be generated by construction and operation of the Build Alternatives—as well as displaced emissions due to transportation mode shift—are quantified and disclosed for informational purposes.

To satisfy CEQA requirements, GHG emission impacts are analyzed in accordance with Appendix G of the *CEQA Guidelines* and considered significant if the Project has the potential to:

- 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 GHG emissions.

The State CEQA Guidelines recommend 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 South Coast Air Quality Management District (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 light rail transit (LRT) corridor. Neither California Air Resources Board (CARB), Office of Planning and Research (OPR), SCAQMD, nor Metro have officially promulgated specific thresholds for analyzing GHG emissions under CEQA. CARB and OPR acknowledge that transforming public transit systems and reducing vehicle miles traveled (VMT) is an effective climate adaptation strategy. OPR recommends the streamlining of GHG emissions impacts analyses for transit and active transportation projects because these projects reduce GHG emissions, increase multimodal transportation networks, and facilitate mixed use development, which are crucial land use planning initiatives for climate adaptation. As such, project GHG emissions are quantified and assessed in the context of the existing GHG emissions inventory, the Metro systemwide GHG emissions displacement, and climate adaptation plans and policies.

Operational GHG emission sources would include indirect GHG emissions through consumption of electricity for rail system propulsion, direct sources associated with maintenance and storage facility (MSF) operations (i.e., employee vehicle trips and facility energy consumption, water use, and waste disposal), and displaced emissions from changes in on-road vehicular traffic patterns along the LRT corridor resulting from transportation mode shift reflected in roadway network VMT. The MSF is a critical component of all of the Build Alternatives and would not be implemented independently of the LRT corridor. GHG emissions that would be generated by construction and operation of the MSF are accounted for in each analysis of the Build Alternatives and presented separately for informational purposes. Detailed calculations for GHG emissions for both construction and operation are shown in Appendix A.

1.5.1 Regional Roadway Vehicle Travel

Implementation of the Project will introduce a new LRT corridor that will provide an alternative mode of transit to automobile use, which will induce transportation mode shift and substitute passenger vehicle trips. Metro recognizes transportation mode shift as the predominant contributor to displacing GHG emissions related to the transportation sector, which is at the crux of policy to reduce GHG emissions at federal, state, and regional levels of regulation. Regional transportation modeling was performed to determine the change in regional on-road VMT resulting from implementation of the Build Alternatives. Table 1.2 presents a summary of the speed-based annual VMT for the Project area under Existing Conditions in 2017 and with implementation of each of the Build Alternatives—if operational in 2017—and Table 1.3 presents the regional transportation modeling results within the Project area for the No Build Alternative and each of the Build Alternatives in the analysis year of 2042. On-road vehicle travel produces GHG emissions through the exhaust byproduct of transportation fuels combustion, as well as minimal secondary evaporative emissions. The CARB maintains a statewide mobile source emissions inventory and forecasting program and provides the EMISSION FACTOR (EMFAC) model for estimating air pollutant and GHG emissions from on-road mobile sources in land use development and transportation projects in California.

Mobile source GHG emissions from on-road vehicle travel within the Project area in 2042 were quantified using the CARB EMFAC2017 version of the model for the No Build and Build Alternatives for informational disclosure. The EMFAC2017 model produces GHG emission factors in units of grams of GHG pollutant emitted per VMT (grams/VMT) for CO₂ and CH₄ based on regional location, vehicle type, and vehicle speed in a specified analysis year using statewide emissions inventory data and accounting for fleet turnover as well as the phasing-in of mandated improvements to fuel efficiency and engine technologies. Regional transportation modeling determined that the vehicle fleet mix within the Project area was approximately seven percent trucks, and it is anticipated that implementation of the Project would predominantly affect vehicle travel within Los Angeles County. Project Area emission factors were produced using EMFAC2017 and off-model calculations for a regional fleet mix with seven percent trucks in the Los Angeles County portion of the South Coast Air Basin region. The emission factors generated by EMFAC correspond to the speed bins presented in Table 1.2 and Table 1.3. The speed-specific emissions factors were multiplied by the corresponding VMT and summed for each scenario to provide a demonstrative comparison of how implementation of the Project would affect the regional GHG emissions inventory from the transportation sector in the horizon year of 2042.

Table 1.2. Affected Area Annual Vehicle Miles Traveled (Millions) – 2017 Scenarios

Speed Range (mph)	2017 Scenario (in million VMT)						
	Existing Conditions	Existing + Alternative 1	Existing + Alternative 2	Existing + Alternative 3	Existing + Alternative 4	Existing + Design Option 1	Existing + Design Option 2
0-5	1,015	1,027	1,008	1,015	1,007	1,011	1,024
5-10	1,823	1,782	1,849	1,820	1,819	1,795	1,819
10-15	4,775	4,702	4,783	4,759	4,752	4,737	4,747
15-20	10,204	10,243	10,517	10,240	10,198	10,198	10,198
20-25	21,580	21,567	21,365	21,522	21,580	21,532	21,553
25-30	23,328	23,352	23,339	23,448	23,452	23,423	23,384
30-35	20,552	20,505	20,471	20,429	20,412	20,496	20,485
35-40	12,829	12,890	12,793	12,832	12,896	12,830	12,849
40-45	7,916	7,953	7,806	7,904	7,894	7,883	7,910
45-50	5,877	5,821	5,934	5,882	5,879	5,886	5,882
50-55	5,853	5,862	5,903	5,881	5,830	5,907	5,831
55-60	5,605	5,589	5,576	5,597	5,610	5,580	5,605
60-65	7,630	7,642	7,604	7,652	7,654	7,609	7,616
65-70	12,385	12,342	12,322	12,350	12,366	12,388	12,380
70-75	19,310	19,330	19,338	19,325	19,319	19,324	19,323
75-80	65	65	65	65	65	65	65
Annual Total	160,746	160,671	160,672	160,721	160,734	160,664	160,670
Change from Existing Condition²	–	(75)	(75)	(25)	(13)	(82)	(76)
Percent Change vs. Existing Condition	–	(0.047%)	(0.046%)	(0.016%)	(0.008%)	(0.051%)	(0.047%)

Source: WSP, 2020

Notes: ¹ Change from Existing Condition = Difference of the Build Alternative Total and the No Build Alternative Annual Total
 mph = miles per hour; VMT = vehicle miles traveled; () = decrease

Table 1.3. Affected Area Annual Vehicle Miles Traveled (2042 Scenarios)

Speed Range (MPH)	2042 Scenario (in million VMT)						
	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Design Option 1	Design Option 2
0-5	2,832	2,802	2,834	2,818	2,795	2,776	2,826
5-10	7,701	7,671	7,682	7,719	7,714	7,669	7,682
10-15	13,037	13,064	13,089	13,033	13,016	13,145	13,018
15-20	20,127	20,120	20,026	20,104	20,180	20,030	20,073
20-25	29,776	29,745	29,748	29,856	30,017	30,124	29,832
25-30	30,471	30,541	30,400	30,450	30,060	29,887	30,281
30-35	23,957	23,830	23,955	23,868	24,015	23,961	24,062
35-40	15,655	15,621	15,740	15,723	15,997	15,952	15,677
40-45	6,941	6,986	6,899	6,918	6,860	6,741	6,949
45-50	5,860	5,943	5,902	5,918	5,694	6,102	5,860
50-55	5,257	5,171	5,245	5,166	5,225	5,095	5,237
55-60	7,230	7,202	7,194	7,236	7,306	7,175	7,219
60-65	9,968	9,997	9,964	9,915	9,840	10,084	9,965
65-70	16,993	17,009	16,994	17,069	17,123	16,776	16,961
70-75	14,543	14,510	14,543	14,510	14,484	14,675	14,568
75-80	48	48	48	48	48	52	48
Annual Total	210,396	210,261	210,266	210,351	210,372	210,245	210,258
Change vs. No Build Alternative ¹	—	(136)	(131)	(45)	(25)	(152)	(138)
Percent Change vs. No Build Alternative	—	(0.065%)	(0.062%)	(0.022%)	(0.012%)	(0.072%)	(0.066%)

Source: WSP, 2020

Notes: ¹ Change from Existing Condition = Difference of the Build Alternative Total and the No Build Alternative Annual Total
mph = miles per hour

1.5.2 Rail System Propulsion

In addition to induced transportation mode shift that would affect direct-source GHG emissions associated with on-road vehicle travel, implementation of the Project would generate indirect GHG emissions through electricity consumption required to fuel rail propulsion and power stations, parking, and ancillary facilities throughout the LRT corridor. In its *2018 Energy and Resource Report*—which was prepared in accordance with the American Public Transportation Association’s *Recommended Practice “Quantifying and Reporting Transit Sustainability Metrics”*—Metro characterized its sustainability performance using a normalization factor of vehicle revenue miles, which refers to the total number of miles Metro’s vehicles travel while in revenue service (i.e., the time when a vehicle is available to the general public and there is an expectation of carrying passengers). Using vehicle revenue miles as the normalization factor means that air pollutant emissions and energy consumption were evaluated on a per-vehicle-revenue-mile basis. As of 2017, electricity consumption for light rail propulsion accounted for approximately 13 percent of Metro’s systemwide GHG emissions.

Under Existing Conditions and the No Build Alternative, there would be no additional LRT system revenue service miles and no additional emissions related to electrical rail propulsion. Table 1.4 presents the additional annual LRV revenue miles that would occur under each of the proposed Project alternatives. The annual LRV revenue miles are specific to each Build Alternative and represent train miles traveled only for the identified Build Alternative. The values presented account for a 5 percent buffer corresponding to non-revenue miles that would occur during out-of-service hours. As a conservative approach, the 2017 Metro systemwide average GHG emission factor of 6.74 pounds of CO₂e per vehicle revenue mile (lbs CO₂e/mile) was used to estimate GHG emissions from light rail propulsion with implementation of each of the Build Alternatives.

Table 1.4. Annual Light Rail Vehicle Revenue Miles – Build Alternatives

Build Alternatives and Design Options	Annual LRV Revenue Miles
Alternative 1	2,109,180
Alternative 2	2,120,399
Alternative 3	1,604,323
Alternative 4	706,800
Design Option 1	2,109,180
Design Option 2	2,109,180

Source: WSP, 2020

Note: LRV = light rail vehicle

1.5.3 Maintenance and Storage Facility Operations

Operation of an MSF would result in GHG emissions associated with vehicle trips to and from the facilities, electricity and natural gas usage, water and wastewater conveyance, and solid waste disposal. Two site options are being considered for the Project MSF location: Paramount and Bellflower. Estimates of GHG emissions that would be generated by sources involved in construction and operation of the MSF were quantified using the CalEEMod Version 2016.3.2 for both the Paramount site option and the Bellflower site option. The Paramount site option would be constructed on a 22.2-acre site and comprise approximately 147,170 square feet of facility structures, and the Bellflower site option would be constructed on a 21.3-acre site and comprise approximately 137,160 square feet of facility structures. The construction schedule and activities would be the same regardless of the site option ultimately chosen for the MSF. The operational emissions modeling accounts for differences in facility energy use.

2 PROJECT DESCRIPTION

This section describes the No Build Alternative and the four Build Alternatives studied in the WSAB Transit Corridor Draft EIS/EIR, including design options, station locations, and maintenance and storage facility (MSF) site options. The Build Alternatives were developed through a comprehensive alternatives analysis process and meet the purpose and need of the Project.

The No Build Alternative and four Build Alternatives are generally defined as follows:

- **No Build Alternative** - Reflects the transportation network in the 2042 horizon year without the proposed Build Alternatives. The No Build Alternative includes the existing transportation network along with planned transportation improvements that have been committed to and identified in the constrained Metro 2009 Long Range Transportation Plan (2009 LRTP) (Metro 2009) and SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016), as well as additional projects funded by Measure M that would be completed by 2042.
- **Build Alternatives:** The Build Alternatives consist of a new LRT line that would extend from different termini in the north to the same terminus in the City of Artesia in the south. The Build Alternatives are referred to as:
 - Alternative 1: Los Angeles Union Station to Pioneer Station; the northern terminus would be located underground at Los Angeles Union Station (LAUS) Forecourt
 - Alternative 2: 7th Street/Metro Center to Pioneer Station; the northern terminus would be located underground at 8th Street between Figueroa Street and Flower Street near 7th Street/Metro Center Station
 - Alternative 3: Slauson/A (Blue) Line to Pioneer Station; the northern terminus would be located just north of the intersection of Long Beach Avenue and Slauson Avenue in the City of Los Angeles, connecting to the current A (Blue) Line Slauson Station
 - Alternative 4: I-105/C (Green) Line to Pioneer Station; the northern terminus would be located at I-105 in the city of South Gate, connecting to the C (Green) Line along the I-105

Two design options are under consideration for Alternative 1. Design Option 1 would locate the northern terminus station box at the LAUS Metropolitan Water District (MWD) east of LAUS and the MWD building, below the baggage area parking facility. Design Option 2 would add the Little Tokyo Station along the WSAB alignment. The Design Options are further discussed in Section 2.3.6.

Figure 2-1 presents the four Build Alternatives and the design options. In the north, Alternative 1 would terminate at LAUS and primarily follow Alameda Avenue south underground to the proposed Arts/Industrial District Station. Alternative 2 would terminate near the existing 7th Street/Metro Center Station in the Downtown Transit Core and would primarily follow 8th Street east underground to the proposed Arts/Industrial District Station.

Figure 2-1. Project Alternatives



Source: Metro, 2020

From the Arts/Industrial District Station to the southern terminus at Pioneer Station, Alternatives 1 and 2 share a common alignment. South of Olympic Boulevard, the Alternatives 1 and 2 would transition from an underground configuration to an aerial configuration, cross over the Interstate (I-) 10 freeway and then parallel the existing Metro A (Blue) Line along the Wilmington Branch ROW as it proceeds south. South of Slauson Avenue, which would serve as the northern terminus for Alternative 3, Alternatives 1, 2, and 3 would turn east and transition to an at-grade configuration to follow the La Habra Branch ROW along Randolph Street. At the San Pedro Subdivision ROW, Alternatives 1, 2, and 3 would turn southeast to follow the San Pedro Subdivision ROW and then transition to the Pacific Electric Right-of-Way (PEROW), south of the I-105 freeway. The northern terminus for Alternative 4 would be located at the I-105/C Line Station. Alternatives 1, 2, 3, and 4 would then follow the PEROW to the southern terminus at the proposed Pioneer Station in Artesia. The Build Alternatives would be grade-separated where warranted, as indicated on Figure 2-2.

Figure 2-2. Project Alignment by Alignment Type



Source: Metro, 2020

2.1 Geographic Sections

The approximately 19-mile corridor is divided into two geographic sections—the Northern and Southern Sections. The boundary between the Northern and Southern Sections occurs at Florence Avenue in the City of Huntington Park.

2.1.1 Northern Section

The Northern Section includes approximately 8 miles of Alternatives 1 and 2 and 3.8 miles of Alternative 3. Alternative 4 is not within the Northern Section. The Northern Section covers the geographic area from downtown Los Angeles to Florence Avenue in the City of Huntington Park and would generally traverse the Cities of Los Angeles, Vernon, Huntington Park, and Bell, and the unincorporated Florence-Firestone community of LA County (Figure 2-3). Alternatives 1 and 2 would traverse portions of the Wilmington Branch (between approximately Martin Luther King Jr Boulevard along Long Beach Avenue to Slauson Avenue). Alternatives 1, 2, and 3 would traverse portions of the La Habra Branch ROW (between Slauson Avenue along Randolph Street to Salt Lake Avenue) and San Pedro Subdivision ROW (between Randolph Street to approximately Paramount Boulevard).

Figure 2-3. Northern Section



Source: Metro, 2020

2.1.2 Southern Section

The Southern Section includes approximately 11 miles of Alternatives 1, 2, and 3 and includes all 6.6 miles of Alternative 4. The Southern Section covers the geographic area from south of Florence Avenue in the City of Huntington Park to the City of Artesia and would generally traverse the Cities of Huntington Park, Cudahy, South Gate, Downey, Paramount, Bellflower, Cerritos, and Artesia (Figure 2-4). In the Southern Section, all four Build Alternatives would utilize portions of the San Pedro Subdivision and the Metro-owned PEROW (between approximately Paramount Boulevard to South Street).

Figure 2-4. Southern Section



Source: Metro, 2020

2.2 No Build Alternative

For the NEPA evaluation, the No Build Alternative is evaluated in the context of the existing transportation facilities in the Transit Corridor (the Transit Corridor extends approximately 2 miles from either side of the proposed alignment) and other capital transportation improvements and/or transit and highway operational enhancements that are reasonably foreseeable. Because the No Build Alternative provides the background transportation

network, against which the Build Alternatives' impacts are identified and evaluated, the No Build Alternative does not include the Project.

The No Build Alternative reflects the transportation network in 2042 and includes the existing transportation network along with planned transportation improvements that have been committed to and identified in the constrained Metro 2009 LRTP and the SCAG 2016 RTP/SCS, as well as additional projects funded by Measure M, a sales tax initiative approved by voters in November 2016. The No Build Alternative includes Measure M projects that are scheduled to be completed by 2042.

Table 2.1 lists the existing transportation network and planned improvements included as part of the No Build Alternative.

Table 2.1. No Build Alternative – Existing Transportation Network and Planned Improvements

Project	To / From	Location Relative to Transit Corridor
Rail (Existing)		
Metro Rail System (LRT and Heavy Rail Transit)	Various locations	Within Transit Corridor
Metrolink (Southern California Regional Rail Authority) System	Various locations	Within Transit Corridor
Rail (Under Construction/Planned)¹		
Metro Westside D (Purple) Line Extension	Wilshire/Western to Westwood/VA Hospital	Outside Transit Corridor
Metro C (Green) Line Extension ² to Torrance	96th Street Station to Torrance	Outside Transit Corridor
Metro C (Green) Line Extension	Norwalk to Expo/Crenshaw ³	Outside Transit Corridor
Metro East-West Line/Regional Connector/Eastside Phase 2	Santa Monica to Lambert Santa Monica to Peck Road	Within Transit Corridor
Metro North-South Line/Regional Connector/Foothill Extension to Claremont Phase 2B	Long Beach to Claremont	Within Transit Corridor
Metro Sepulveda Transit Corridor	Metro G (Orange) Line to Metro E (Expo) Line	Outside Transit Corridor
Metro East San Fernando Valley Transit Corridor	Sylmar to Metro G (Orange) Line	Outside Transit Corridor
Los Angeles World Airport Automated People Mover	96th Street Station to LAX Terminals	Outside Transit Corridor
Metrolink Capital Improvement Projects	Various projects	Within Transit Corridor
California High-Speed Rail	Burbank to LA LA to Anaheim	Within Transit Corridor
Link US	LAUS	Within Transit Corridor

2 Project Description

Project	To / From	Location Relative to Transit Corridor
Bus (Existing)		
Metro Bus System (including BRT, Express, and local)	Various locations	Within Transit Corridor
Municipality Bus System ⁴	Various locations	Within Transit Corridor
Bus (Under Construction/Planned)		
Metro G (Orange) Line (BRT)	Del Mar (Pasadena) to Chatsworth Del Mar (Pasadena) to Canoga Canoga to Chatsworth	Outside Transit Corridor
Vermont Transit Corridor (BRT)	120th Street to Sunset Boulevard	Outside Transit Corridor
North San Fernando Valley BRT	Chatsworth to North Hollywood	Outside Transit Corridor
North Hollywood to Pasadena	North Hollywood to Pasadena	Outside Transit Corridor
Highway (Existing)		
Highway System	Various locations	Within Transit Corridor
Highway (Under Construction/Planned)		
High Desert Multi-Purpose Corridor	SR-14 to SR-18	Outside Transit Corridor
I-5 North Capacity Enhancements	SR-14 to Lake Hughes Rd	Outside Transit Corridor
SR-71 Gap Closure	I-10 to Rio Rancho Rd	Outside Transit Corridor
Sepulveda Pass Express Lane	I-10 to US-101	Outside Transit Corridor
SR-57/SR-60 Interchange Improvements	SR-70/SR-60	Outside Transit Corridor
I-710 South Corridor Project (Phase 1 & 2)	Ports of Long Beach and LA to SR-60	Within Transit Corridor
I-105 Express Lane	I-405 to I-605	Within Transit Corridor
I-5 Corridor Improvements	I-605 to I-710	Outside Transit Corridor

Source: Metro 2018, WSP 2019

Notes: ¹ Where extensions are proposed for existing Metro rail lines, the origin/destination is defined for the operating scheme of the entire rail line following completion of the proposed extensions and not just the extension itself.

² Metro C (Green) Line extension to Torrance includes new construction from Redondo Beach to Torrance; however, the line will operate from Torrance to 96th Street.

³ The currently under construction Metro Crenshaw/LAX Line will operate as the Metro C (Green) Line.

⁴ The municipality bus network system is based on service patterns for Bellflower Bus, Cerritos on Wheels, Cudahy Area Rapid Transit, Get Around Town Express, Huntington Park Express, La Campana, Long Beach Transit, Los Angeles Department of Transportation, Norwalk Transit System and the Orange County Transportation Authority.

BRT = Bus Rapid Transit; LAUS = Los Angeles Union Station; LAX = Los Angeles International Airport; VA = Veterans Affairs

2.3 Build Alternatives

2.3.1 Proposed Alignment Configuration for the Build Alternatives

This section describes the alignment for each of the Build Alternatives. The general characteristics of the four Build Alternatives are summarized in Table 2.2. Figure 2-5 illustrates the freeway crossings along the alignment. Additionally, the Build Alternatives would require relocation of existing freight rail tracks within the ROW to maintain existing operations where there would be overlap with the proposed light rail tracks. Figure 2-6 depicts the alignment sections that would share operation with freight and the corresponding ownership.

Table 2.2. Summary of Build Alternative Components

Component	Quantity			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Alignment Length	19.3 miles	19.3 miles	14.8 miles	6.6 miles
Stations Configurations	11 3 aerial; 6 at-grade; 2 underground ³	12 3 aerial; 6 at-grade; 3 underground	9 3 aerial; 6 at-grade	4 1 aerial; 3 at-grade
Parking Facilities	5 (approximately 2,780 spaces)	5 (approximately 2,780 spaces)	5 (approximately 2,780 spaces)	4 (approximately 2,180 spaces)
Length of underground, at-grade, and aerial	2.3 miles underground; 12.3 miles at-grade; 4.7 miles aerial ¹	2.3 miles underground; 12.3 miles at-grade; 4.7 miles aerial ¹	12.2 miles at-grade; 2.6 miles aerial ¹	5.6 miles at-grade; 1.0 miles aerial ¹
At-grade crossings	31	31	31	11
Freight crossings	10	10	9	2
Freeway Crossings	6 (3 freeway undercrossings ² at I-710; I-605, SR-91)	6 (3 freeway undercrossings ² at I-710; I-605, SR-91)	4 (3 freeway undercrossings ² at I-710; I-605, SR-91)	3 (2 freeway undercrossings ² at I-605, SR-91)
Elevated Street Crossings	25	25	15	7
River Crossings	3	3	3	1
TPSS Facilities	22 ³	23	17	7
Maintenance and Storage Facility site options	2	2	2	2

Source: WSP, 2020

Notes: ¹ Alignment configuration measurements count retained fill embankments as at-grade.

² The light rail tracks crossing beneath freeway structures.

³ Under Design Option 2 – Add Little Tokyo Station, an additional underground station and TPSS site would be added under Alternative 1

Figure 2-5. Freeway Crossings



Source: WSP, 2020

Figure 2-6. Existing Rail Right-of-Way Ownership and Relocation



Source: WSP, 2020

2.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

The total alignment length of Alternative 1 would be approximately 19.3 miles, consisting of approximately 2.3 miles of underground, 12.3 miles of at-grade, and 4.7 miles of aerial alignment. Alternative 1 would include 11 new LRT stations, 2 of which would be underground, 6 would be at-grade, and 3 would be aerial. Under Design Option 2, Alternative 1 would have 12 new LRT stations, and the Little Tokyo Station would be an additional underground station. Five of the stations would include parking facilities, providing a total of up to 2,780 new parking spaces. The alignment would include 31 at-grade crossings, 3 freeway undercrossings, 2 aerial freeway crossings, 1 underground freeway crossing, 3 river crossings, 25 aerial road crossings, and 10 freight crossings.

In the north, Alternative 1 would begin at a proposed underground station at/near LAUS either beneath the LAUS Forecourt or, under Design Option 1, east of the MWD building beneath the baggage area parking facility (Section 2.3.6). Crossovers would be located on the north and south ends of the station box with tail tracks extending approximately 1,200 feet north of the station box. A tunnel extraction portal would be located within the tail tracks for both Alternative 1 terminus station options.

From LAUS, the alignment would continue underground crossing under the US-101 freeway and the existing Metro L (Gold) Line aerial structure and continue south beneath Alameda Street to the optional Little Tokyo Station between 1st Street and 2nd Street (note: under Design Option 2, Little Tokyo Station would be constructed). From the optional Little Tokyo Station, the alignment would continue underground beneath Alameda Street to the proposed Arts/Industrial District Station under Alameda Street between 6th Street and Industrial Street. (Note, Alternative 2 would have the same alignment as Alternative 1 from this point south. Refer to Section 2.3.3 for additional information on Alternative 2.)

The underground alignment would continue south under Alameda Street to 8th Street, where the alignment would curve to the west and transition to an aerial alignment south of Olympic Boulevard. The alignment would cross over the I-10 freeway in an aerial viaduct structure and continue south, parallel to the existing Metro A (Blue) Line at Washington Boulevard. The alignment would continue in an aerial configuration along the eastern half of Long Beach Avenue within the UPRR-owned Wilmington Branch ROW, east of the existing Metro A (Blue) Line and continue south to the proposed Slauson/A Line Station. The aerial alignment would pass over the existing pedestrian bridge at E. 53rd Street. The Slauson/A Line Station would serve as a transfer point to the Metro A (Blue) Line via a pedestrian bridge. The vertical circulation would be connected at street level on the north side of the station via stairs, escalators, and elevators. (The Slauson/A Line Station would serve as the northern terminus for Alternative 3; refer to Section 2.3.4 for additional information on Alternative 3.)

South of the Slauson/A Line Station, the alignment would turn east along the existing La Habra Branch ROW (also owned by UPRR) in the median of Randolph Street. The alignment would be on the north side of the La Habra Branch ROW and would require the relocation of existing freight tracks to the southern portion of the ROW. The alignment would transition to an at-grade configuration at Alameda Street and would proceed east along the Randolph Street median. Wilmington Avenue, Regent Street, Albany Street, and Rugby Avenue would be closed to traffic crossing the ROW, altering

the intersection design to a right-in, right-out configuration. The proposed Pacific/Randolph Station would be located just east of Pacific Boulevard.

From the Pacific/Randolph Station, the alignment would continue east at-grade. Rita Avenue would be closed to traffic crossing the ROW, altering the intersection design to a right-in, right-out configuration. At the San Pedro Subdivision ROW, the alignment would transition to an aerial configuration and turn south to cross over Randolph Street and the freight tracks, returning to an at-grade configuration north of Gage Avenue. The alignment would be located on the east side of the existing San Pedro Subdivision ROW freight tracks, and the existing tracks would be relocated to the west side of the ROW. The alignment would continue at-grade within the San Pedro Subdivision ROW to the proposed at-grade Florence/Salt Lake Station south of the Salt Lake Avenue/Florence Avenue intersection.

South of Florence Avenue, the alignment would extend from the proposed Florence/Salt Lake Station in the City of Huntington Park to the proposed Pioneer Station in the City of Artesia, as shown in Figure 2-4. The alignment would continue southeast from the proposed at-grade Florence/Salt Lake Station within the San Pedro Subdivision ROW, crossing Otis Avenue, Santa Ana Street, and Ardine Street at-grade. The alignment would be located on the east side of the existing San Pedro Subdivision freight tracks and the existing tracks would be relocated to the west side of the ROW. South of Ardine Street, the alignment would transition to an aerial structure to cross over the existing UPRR tracks and Atlantic Avenue. The proposed Firestone Station would be located on an aerial structure between Atlantic Avenue and Firestone Boulevard.

The alignment would then cross over Firestone Boulevard and transition back to an at-grade configuration prior to crossing Rayo Avenue at-grade. The alignment would continue south along the San Pedro Subdivision ROW, crossing Southern Avenue at-grade and continuing at-grade until it transitions to an aerial configuration to cross over the LA River. The proposed LRT bridge would be constructed next to the existing freight bridge. South of the LA River, the alignment would transition to an at-grade configuration crossing Frontage Road at-grade, then passing under the I-710 freeway through the existing box tunnel structure and then crossing Miller Way. The alignment would then return to an aerial structure to cross the Rio Hondo Channel. South of the Rio Hondo Channel, the alignment would briefly transition back to an at-grade configuration and then return to an aerial structure to cross over Imperial Highway and Garfield Avenue. South of Garfield Avenue, the alignment would transition to an at-grade configuration and serve the proposed Gardendale Station north of Gardendale Street.

From the Gardendale Station, the alignment would continue south in an at-grade configuration, crossing Gardendale Street and Main Street to connect to the proposed I-105/C Line Station, which would be located at-grade north of Century Boulevard. This station would be connected to the new infill C (Green) Line Station in the middle of the freeway via a pedestrian walkway on the new LRT bridge. The alignment would continue at-grade, crossing Century Boulevard and then over the I-105 freeway in an aerial configuration within the existing San Pedro Subdivision ROW bridge footprint. A new Metro C (Green) Line Station would be constructed in the median of the I-105 freeway. Vertical pedestrian access would be provided from the LRT bridge to the proposed I-105/C Line Station platform via stairs and elevators. To accommodate the construction of the new station platform, the existing Metro C (Green) Line tracks would be widened and, as part of the I-105 Express Lanes Project, the I-105 lanes would be reconfigured. (The I-105/C Line Station would serve

as the northern terminus for Alternative 4; refer to Section 2.3.5 for additional information on this alternative.)

South of the I-105 freeway, the alignment would continue at-grade within the San Pedro Subdivision ROW. In order to maintain freight operations and allow for freight train crossings, the alignment would transition to an aerial configuration as it turns southeast and enter the PEROW. The existing freight track would cross beneath the aerial alignment and align on the north side of the PEROW east of the San Pedro Subdivision ROW. The proposed Paramount/Rosecrans Station would be located in an aerial configuration west of Paramount Boulevard and north of Rosecrans Avenue. The existing freight track would be relocated to the east side of the alignment beneath the station viaduct.

The alignment would continue southeast in an aerial configuration over the Paramount Boulevard/Rosecrans Avenue intersection and descend to an at-grade configuration. The alignment would return to an aerial configuration to cross over Downey Avenue descending back to an at-grade configuration north of Somerset Boulevard. One of the adjacent freight storage tracks at Paramount Refinery Yard would be relocated to accommodate the new LRT tracks and maintain storage capacity. There are no active freight tracks south of the World Energy facility.

The alignment would cross Somerset Boulevard at-grade. South of Somerset Boulevard, the at-grade alignment would parallel the existing Bellflower Bike Trail that is currently aligned on the south side of the PEROW. The alignment would continue at-grade crossing Lakewood Boulevard, Clark Avenue, and Alondra Boulevard. The proposed at-grade Bellflower Station would be located west of Bellflower Boulevard.

East of Bellflower Boulevard, the Bellflower Bike Trail would be realigned to the north side of the PEROW to accommodate an existing historic building located near the southeast corner of Bellflower Boulevard and the PEROW. It would then cross back over the LRT tracks at-grade to the south side of the ROW. The LRT alignment would continue southeast within the PEROW and transition to an aerial configuration at Cornuta Avenue, crossing over Flower Street and Woodruff Avenue. The alignment would return to an at-grade configuration at Walnut Street. South of Woodruff Avenue, the Bellflower Bike Trail would be relocated to the north side of the PEROW. Continuing southeast, the LRT alignment would cross under the SR-91 freeway in an existing underpass. The alignment would cross over the San Gabriel River on a new bridge, replacing the existing abandoned freight bridge. South of the San Gabriel River, the alignment would transition back to an at-grade configuration before crossing Artesia Boulevard at-grade.

East of Artesia Boulevard the alignment would cross beneath the I-605 freeway in an existing underpass. Southeast of the underpass, the alignment would continue at-grade, crossing Studebaker Road. North of Gridley Road, the alignment would transition to an aerial configuration to cross over 183rd Street and Gridley Road. The alignment would return to an at-grade configuration at 185th Street, crossing 186th Street and 187th Street at-grade. The alignment would then pass through the proposed Pioneer Station on the north side of Pioneer Boulevard at-grade. Tail tracks accommodating layover storage for a three-car train would extend approximately 1,000 feet south from the station, crossing Pioneer Boulevard and terminating west of South Street.

2.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

The total alignment length of Alternative 2 would be approximately 19.3 miles, consisting of approximately 2.3 miles of underground, 12.3 miles of at-grade, and 4.7 miles of aerial alignment. Alternative 2 would include 12 new LRT stations, 3 of which would be underground, 6 would be at-grade, and 3 would be aerial. Five of the stations would include parking facilities, providing a total of approximately 2,780 new parking spaces. The alignment would include 31 at-grade crossings, 3 freeway undercrossings, 2 aerial freeway crossings, 1 underground freeway crossing, 3 river crossings, 25 aerial road crossings, and 10 freight crossings.

In the north, Alternative 2 would begin at the proposed WSAB 7th Street/Metro Center Station, which would be located underground beneath 8th Street between Figueroa Street and Flower Street. A pedestrian tunnel would provide connection to the existing 7th Street/Metro Center Station. Tail tracks, including a double crossover, would extend approximately 900 feet beyond the station, ending east of the I-110 freeway. From the 7th Street/Metro Center Station, the underground alignment would proceed southeast beneath 8th Street to the South Park/Fashion District Station, which would be located west of Main Street beneath 8th Street.

From the South Park/Fashion District Station, the underground alignment would continue under 8th Street to San Pedro Street, where the alignment would turn east toward 7th Street, crossing under privately owned properties. The tunnel alignment would cross under 7th Street and then turn south at Alameda Street. The alignment would continue south beneath Alameda Street to the Arts/Industrial District Station located under Alameda Street between 7th Street and Center Street. A double crossover would be located south of the station box, south of Center Street. From this point, the alignment of Alternative 2 would follow the same alignment as Alternative 1, which is described further in Section 2.3.2.

2.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The total alignment length of Alternative 3 would be approximately 14.8 miles, consisting of approximately 12.2 miles of at-grade, and 2.6 miles of aerial alignment. Alternative 3 would include 9 new LRT stations, 6 would be at-grade and 3 would be aerial. Five of the stations would include parking facilities, providing a total of approximately 2,780 new parking spaces. The alignment would include 31 at-grade crossings, 3 freeway undercrossings, 1 aerial freeway crossing, 3 river crossings, 15 aerial road crossings, and 9 freight crossings. In the north, Alternative 3 would begin at the Slauson/A Line Station and follow the same alignment as Alternatives 1 and 2, described in Section 2.3.2.

2.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The total alignment length of Alternative 4 would be approximately 6.6 miles, consisting of approximately 5.6 miles of at-grade and 1.0 mile of aerial alignment. Alternative 3 would include 4 new LRT stations, 3 would be at-grade, and 1 would be aerial. Four of the stations would include parking facilities, providing a total of approximately 2,180 new parking spaces. The alignment would include 11 at-grade crossings, 2 freeway undercrossings, 1 aerial freeway crossing, 1 river crossing, 7 aerial road crossings, and 2 freight crossings. In the north, Alternative 4 would begin at the I-105/C Line Station and follow the same alignment as Alternatives 1, 2, and 3, described in Section 2.3.2.

2.3.6 Design Options

Alternative 1 includes two design options:

- **Design Option 1:** LAUS at the Metropolitan Water District (MWD) – The LAUS station box would be located east of LAUS and the MWD building, below the baggage area parking facility instead of beneath the LAUS Forecourt. Crossovers would be located on the north and south ends of the station box with tail tracks extending approximately 1,200 feet north of the station box. From LAUS, the underground alignment would cross under the US-101 freeway and the existing Metro L (Gold) Line aerial structure and continue south beneath Alameda Street to the optional Little Tokyo Station between Traction Avenue and 1st Street. The underground alignment between LAUS and the Little Tokyo Station would be located to the east of the base alignment.
- **Design Option 2:** Add the Little Tokyo Station – Under this design option, the Little Tokyo Station would be constructed as an underground station and there would be a direct connection to the Regional Connector Station in the Little Tokyo community. The alignment would proceed underground directly from LAUS to the Arts/Industrial District Station primarily beneath Alameda Street.

2.3.7 Maintenance and Storage Facility

MSFs accommodate daily servicing and cleaning, inspection and repairs, and storage of light rail vehicles (LRV). Activities may take place in the MSF throughout the day and night depending upon train schedules, workload, and the maintenance requirements.

Two MSF options are evaluated; however, only one MSF would be constructed as part of the Project. The MSF would have storage tracks, each with sufficient length to store three-car train sets and a maintenance-of-way vehicle storage. The facility would include a main shop building with administrative offices, a cleaning platform, a traction power substation (TPSS), employee parking, a vehicle wash facility, a paint and body shop, and other facilities as needed. The east and west yard leads (i.e., the tracks leading from the mainline to the facility) would have sufficient length for a three-car train set. In total, the MSF would need to accommodate approximately 80 LRVs to serve the Project's operations plan.

Two potential locations for the MSF have been identified—one in the City of Bellflower and one in the City of Paramount. These options are described further in the following sections.

2.3.8 Bellflower MSF Option

The Bellflower MSF site option is bounded by industrial facilities to the west, Somerset Boulevard and apartment complexes to the north, residential homes to the east, and the PEROW and Bellflower Bike Trail to the south. The site is approximately 21 acres in area and can accommodate up to 80 vehicles (Figure 2-7).

2.3.9 Paramount MSF Option

The Paramount MSF site option is bounded by the San Pedro Subdivision ROW on the west, Somerset Boulevard to the south, industrial and commercial uses on the east, and All-American City Way to the north. The site is 22 acres and could accommodate up to 80 vehicles (Figure 2-7).

Figure 2-7. Maintenance and Storage Facility Options



Source: WSP, 2020

3 REGULATORY FRAMEWORK

This section identifies applicable regulations, plans, and guidance related to climate change.

Federal

- Massachusetts v. Environmental Protection Agency, 127 S.Ct. 1438
- American Public Transportation Association (APTA)

State

- Assembly Bill 32
- Assembly Bill 1493
- Senate Bill 32
- Senate Bill 375
- State Cap-and-Trade Program
- Senate Bill 100
- Senate Bills 1078/107/X 1-2
- Executive Order S-01-07
- Executive Order S-3-05
- Executive Order B-30-15
- Executive Order B-55-18
- Executive Order B-16-12
- California Green Building Standards Code
- California Environmental Quality Act and Senate Bill 97
- Senate Bill 743
- California Air Pollution Control Officers Association (CAPCOA)

Regional

- Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy
- Policy on Global Warming and Stratospheric Ozone Depletion
- Metro Countywide Sustainability Planning Program
- Metro Climate Action and Adaptation Plan
- Metro Green Construction Policy
- Metro Energy Conservation and Management Plan
- Metro Resiliency Indicator Framework Report

Local

- City of Los Angeles Green LA Action Plan
- City of Los Angeles ClimateLA
- City of Los Angeles Sustainable City pLAN
- City of Los Angeles Zero Emissions 2028 Roadmap
- City of Vernon Sustainability Action Plan
- Cudahy 2040 General Plan Air Quality Element
- City of South Gate General Plan Green City Element

- City of Bellflower Climate Action Plan
- City of Artesia General Plan Air Quality and Climate Change Element

3.1 Federal

3.1.1 Massachusetts v. Environmental Protection Agency, 127 S.Ct. 1438

The United States Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438, that CO₂ and other GHGs are pollutants under the Federal Clean Air Act, which the United States Environmental Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare. On December 7, 2009, the USEPA made two distinct findings: 1) that the current and projected concentrations of the six key GHGs (CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations; and 2) that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

3.1.2 American Public Transportation Association (APTA)

The APTA prepared a report in 2009 titled *Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit* (APTA 2009). The report provides guidance to transit agencies for quantifying GHG emissions, including both emissions generated by transit and the potential reduction of emissions through efficiency by laying out a standard methodology for transit agencies to report their GHG emissions in a transparent, consistent and cost-effective manner. The document was designed to ensure that agencies can provide an accurate public record of emissions; and was intended to help agencies comply with future state and federal legal requirements and potentially gain credit for their early actions to reduce emissions.

3.2 State

California has adopted a variety of statewide legislation to address various aspects of climate change and GHG emissions. The legislation is not directed at citizens or jurisdictions specifically; rather, it establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor has also issued several executive orders related to the state's evolving climate change policy. Below is a summary of GHG legislation applicable to the Build Alternatives.

3.2.1 Assembly Bill 32

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required CARB to develop a scoping plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Climate Change Scoping Plan was first approved by the CARB in 2008 and must be updated every five years. The first update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. In 2016, the Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by Executive Order (EO) B-30-15.

The AB 32 Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions, including expanding energy efficiency programs, increasing electricity production from renewable resources (at least 33 percent of the statewide electricity mix), increasing automobile efficiency, implementing the Low-Carbon Fuel Standard, and developing a cap-and-trade program. Multiple AB 32 Scoping Plan measures address GHG emissions from transportation fuels and energy. Together, the elements of the AB 32 Scoping Plan will ensure that overall statewide emissions will be decreased to the extent necessary to achieve AB 32's emissions reduction goals.

3.2.2 Assembly Bill 1493

AB 1493 amended the Clean Car Standards (Chapter 200, Statutes of 2002), also known as the "Pavley" regulations which require reductions in GHG emissions in new passenger vehicles from 2009 through 2016. The amendments are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. The Clean Car Standards required CARB to develop and adopt standards for vehicle manufacturers to reduce GHG emissions coming from passenger vehicles and light-duty trucks at a "maximum feasible and cost-effective reduction" by January 1, 2005. Pavley I took effect for model years starting in 2009 to 2016; and Pavley II, which is now referred to as Low Emission Vehicle III GHG, will cover 2017 to 2025. Fleet average emission standards would reach 22 percent reduction by 2012 and 30 percent by 2016.

In January 2012, CARB adopted the Advanced Clean Cars program to extend AB 1493 through model years 2017 to 2025. This program will promote all types of clean fuel technologies such as plug-in hybrids, battery electric vehicles, compressed natural gas vehicles, and hydrogen powered vehicles while reducing smog and saving consumers' money in fuel costs. Fuel savings may be up to 25 percent by 2025.

3.2.3 Senate Bill 32

SB 32 codifies the 2030 emissions reduction goal of EO B-30-15 by requiring a reduction goal of 40 percent below 1990 levels by 2030. CARB's *2017 Climate Change Scoping Plan* (2017 Scoping Plan) (CARB 2017) describes California's strategy for achieving the 2030 GHG emissions reduction target established by SB 32. The 2017 Scoping Plan also recognized the critical and complementary role of local government in achieving the state's climate goals. CARB's *Mobile Source Strategy* (CARB 2016) describes California's strategy for containing air pollutant emissions from vehicles and quantifies growth in VMT that is compatible with achieving state climate targets.

3.2.4 Senate Bill 375

SB 375 was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under the law, Metropolitan Planning Organizations are tasked with incorporating Sustainable Communities Strategies (SCS) as an element in Regional Transportation Plans (RTP). The SCS documents are intended to:

- Identify the general location of uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning

period of the RTP taking into account net migration into the region, population growth, household formation and employment growth;

- Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region;
- Identify a transportation network to service the transportation needs of the region;
- Gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- Consider the state housing goals;
- Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the GHG emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the GHG emission reduction targets approved by the state board; and
- Allow the RTP to comply with the Clean Air Act.

3.2.5 State Cap-and-Trade Program

This program creates a market-based system with an overall emissions limit for affected sectors, including electric utilities, large industrial facilities and distributors of transportation, natural gas and other fuels. Landmark checkpoint targets of the State Cap-and-Trade Program include reducing GHG emissions to 1990 levels by 2020, and ultimately achieving an 80 percent reduction from 1990 levels by 2050. Under the Cap-and-Trade Program, an overall limit on GHG emissions from capped sectors are established and facilities subject to the cap will be able to trade permits (allowances) to emit GHGs. It is anticipated that the emissions trading system will reduce GHG emissions from regulated entities by more than 16 percent between 2013 and 2020.

3.2.6 SB 100

SB 100 establishes a state goal of 100 percent clean electricity by 2045 and advances the Renewables Portfolio Standard to 50 percent by 2025 and 60 percent by 2030.

3.2.7 Senate Bills 1078/107/X 1-2

SB 1078 and SB 107, California's Renewables Portfolio Standard, obligated investor-owned energy service providers and Community Choice Aggregations to procure an additional one percent of retail sales per year from eligible renewable sources until 20 percent was reached (by 2010). The California Public Utilities Commission and California Energy Commission are jointly responsible for implementing the program. SB X 1-2, called the California Renewable Energy Resources Act, obligates all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020.

3.2.8 Executive Order S-01-07

EO S-01-07 established a Low-Carbon Fuel Standard and directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to develop and propose protocols for measuring the life-cycle carbon intensity of transportation fuels.

3.2.9 Executive Order S-3-05

EO S-3-05 established state GHG emission targets of 1990 levels by 2020 (the same as AB 32, enacted later and discussed above) and 80 percent below 1990 levels by 2050. It calls for the Secretary of Cal/EPA to be responsible for the coordination of state agencies and progress

reporting. In response to the EO S-3-05, the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary of the Cal/EPA.

3.2.10 Executive Order B-30-15

EO B-30-15 established a mid-term goal for 2030 of reducing GHG emissions by 40 percent below 1990 levels and required CARB to update its current AB 32 Scoping Plan to identify the measures to meet the 2030 target. EO B-30-15 supports EO S-3-05 and is binding only by state agencies.

3.2.11 Executive Order B-55-18

EO B-55-18 directs the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter.

3.2.12 Executive Order B-16-12

EO-B-16-12 specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

3.2.13 California Green Building Standards Code

In January 2010, the California Building Standards Commission adopted the statewide mandatory California Green Building Standards Code (CALGreen) Part 11 of Title 24, California Code of Regulations. The Code was updated in 2015 to require additional energy savings. CALGreen applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure.

3.2.14 California Environmental Quality Act and Senate Bill 97

By enacting SB 97 in 2007, California's lawmakers expressly recognized the need to analyze GHG emissions as a part of the CEQA process. SB 97 required the OPR to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. The CEQA Guidelines amendments clarified several points, including the following CEQA Guidelines and Climate Change:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions (CEQA Guidelines Section 15064.4);
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions (CEQA Guidelines Section 15126.4(c));
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change (CEQA Guidelines Section 15126.2(a));
- Lead agencies may significantly streamline the analysis of GHG on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria (CEQA Guidelines Section 15183.5(b));
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives (CEQA Guidelines, Appendix F).

Also related to SB 97, CEQA Guidelines Section 21097 states that failure to analyze the effects of GHG emissions otherwise required to be reduced pursuant to regulations adopted by the CARB in an environmental impact report for either a transportation project funded under the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or a project funded under the Disaster Preparedness and Flood Prevention Bond Act of 2006 does not create a cause of action for a violation of CEQA.

3.2.15 Senate Bill 743

SB 743 encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled that contribute to GHG emissions, as required by AB 32. SB 743 requires the OPR to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the reduction of GHG emissions, the development of multi-modal transportation networks, and a diversity of land uses. It also allows OPR to develop alternative metrics outside of transit priority areas.

3.2.16 California Air Pollution Control Officers Association (CAPCOA)

CAPCOA is a non-profit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA promotes unity and efficiency in state air quality issues and strives to encourage consistency in methods and practices of air pollution control. In 2008, CAPCOA published a white paper intended to serve as a resource for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers approaches toward determining whether GHG emissions are significant. The paper also evaluates tools and methodologies for estimating impacts and summarizes mitigation measures.

3.3 Regional

3.3.1 Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

SCAG is the Metropolitan Planning Organization for the six-county region that includes Los Angeles, Orange, Riverside, Ventura, San Bernardino and Imperial counties. SCAG adopted the 2016-2040 RTP/SCS on April 7, 2016, and it includes a strong commitment to reduce emissions from transportation sources to comply with SB 375. SB 375 requires CARB to develop regional CO₂ emission reduction targets (exclusive of Pavley emissions that are counted separately), compared to 2005 emissions, for cars and light trucks for 2020 and 2035 for each Metropolitan Planning Organization. The 2016-2040 RTP/SCS charts a course for closely integrating land use and transportation planning including in areas labeled as High Quality Transit Areas.

High Quality Transit Areas reflect areas with rail transit service or bus service where lines have peak headways of less than 15 minutes. The 2016-2040 RTP/SCS was prepared through a collaborative, continuous and comprehensive process by SCAG and it serves as an update to the 2012-2035 RTP/SCS. It outlines \$556.5 billion in transportation system investments through 2040. Major themes in the 2016-2040 RTP/SCS that are relevant to the Project include integrating strategies for land use and transportation, striving for sustainability, protecting and preserving the existing transportation infrastructure, increasing capacity through improved system management, and giving people more transportation choice. Importantly, the 2016-2040 RTP/SCS states that the region will meet or exceed the SB 375

per capita targets, lowering regional per capita GHG emissions (below 2005 levels) by eight percent by 2020 and 18 percent by 2035. The 2016-2040 RTP/SCS also states that regional 2040 per capita emissions would be reduced by 22 percent, although CARB has not established a 2040 per capita emissions target.

3.3.2 Policy on Global Warming and Stratospheric Ozone Depletion

SCAQMD adopted a Policy on Global Warming and Stratospheric Ozone Depletion on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan (AQMP). In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy.

SCAQMD released a draft guidance regarding interim CEQA GHG significance thresholds. In its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target (e.g., 30 percent) to determine significance for commercial/residential projects that emit greater than 3,000 metric tons (MT) per year. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where the SCAQMD is the lead agency. However, SCAQMD has yet to adopt a GHG significance threshold for land use development or transportation projects and has formed a GHG CEQA Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

The GHG CEQA Significance Threshold Working Group is tasked with providing guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group included government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing CEQA GHG significance thresholds. The working group discussed multiple methodologies for determining project significance. These methodologies included categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets. The GHG CEQA Significance Threshold Working Group has not convened since 2008.

3.3.3 Metro Countywide Sustainability Planning Program

The Metro Countywide Sustainability Planning Program provides leadership for the implementation of a regional transit system that increases mobility, fosters walkable and livable communities, and minimizes GHG emissions and environmental impacts. The Countywide Sustainability Planning Policy is a tool for defining long-term, desired sustainability outcomes in order to facilitate greater coordination and collaboration across transportation modes, planning disciplines and government agencies. The policy aims to fully integrate sustainability into Metro's planning functions, complement and provide a framework for building upon federal, state, regional and local sustainability policies/plans, and foster collaboration and inspire partnerships that will lead to more sustainable communities. Metro has developed policies directed toward controlling GHG emissions, enhancing sustainability, and adapting to the effects of climate change including the *Metro Countywide Sustainability Planning Policy and Implementation Plan* (Metro 2012).

3.3.4 Metro Climate Action and Adaptation Plan

The *Metro Climate Action and Adaptation Plan* (Metro 2019) establishes a framework to reduce GHG emissions and prepare for the impacts of climate change. The Plan addresses the need to mitigate climate change by reducing GHG emissions and provides current and

forecast emissions, as well as a discussion of actions that Metro can take to further reduce emissions from private vehicles. The Plan also identifies Metro services and assets likely to be affected by climate impacts; and presents adaptation strategies; and next steps for mitigation and adaptation components of the Plan.

3.3.5 Metro Green Construction Policy

Metro has adopted a *Green Construction Policy* (Metro 2011a) committing to less polluting construction equipment and vehicles and implementing best practices to reduce harmful diesel emissions on all Metro construction projects performed on Metro properties and rights-of-way. Best practices include Tier 4 emission standards for off-road diesel-powered construction equipment greater than 50 horsepower and restricting idling to a maximum of five minutes.

3.3.6 Metro Energy Conservation and Management Plan

The *Metro Energy Conservation and Management Plan* (ECMP) (Metro 2011b) is a strategic blueprint to guide energy use in a sustainable, cost-effective, and efficient manner. The ECMP complements Metro's Energy and Sustainability Policy, focusing on electricity for rail vehicle propulsion, electricity for rail and bus facility purposes, natural gas for rail and bus facility purposes, and the application of renewable energy (e.g., solar and wind). The ECMP addresses energy needs and plans to meet increasing ridership through system expansion and new facility construction. It identifies opportunities to reduce energy consumption and realize cost savings through the implementation of low-cost operational initiatives and cost-effective capital retrofits. The ECMP also evaluates and recommends an optimal organizational structure and approach for the focused and effective implementation of an agency-wide ECMP. Finally, the ECMP provides a set of implementation strategies for implementing the plan.

3.3.7 Metro Resiliency Indicator Framework Report

In 2015, Metro released a *Resiliency Indicator Framework Report* (Metro 2015) to help prioritize and evaluate climate adaptation implementation priorities to ensure infrastructure resilience and maintain a good state of repair. The report outlines metrics referred to as resiliency indicators that facilitate the process of continual improvement and help prioritize actions for Metro's planning, construction, and operational activities. The intent is that the indicators will contribute to the understanding of the progress of Metro's climate management efforts over time and allow the agency to gauge the effectiveness of specific strategies. Indicators pertaining to technical and organizational components of Metro's operations were identified and evaluated in the report.

3.4 Local

The following presents a summary of GHG-related plans and policies in Cities along the Project alignment. The cities of Huntington Park, Bell, Paramount, and Cerritos do not have applicable climate change plans.

3.4.1 City of Los Angeles

3.4.1.1 Green LA Action Plan

The City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the *Green LA Action Plan* (City of Los Angeles 2007) is to reduce GHG emissions 35 percent below 1990 levels by 2030). The Plan identifies objectives and actions

designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations and create a framework to address City-wide GHG emissions. *Green LA Action Plan* lists various focus areas in which to implement GHG reduction strategies. Focus areas include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions.

3.4.1.2 ClimateLA

ClimateLA presents the existing GHG inventory for the City of Los Angeles, includes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate progress, and includes mechanisms that allow the plan to be revised to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels which were estimated to be approximately 54.1 million metric tons. The City will need to lower annual GHG emissions to approximately 35.1 million metric tons per year by 2030. To achieve these reductions the City has developed strategies that focus on energy, water use, transportation, land use, waste, open space and greening, and economic factors.

3.4.1.3 Sustainable City pLAn

The *Sustainable City pLAn* (the “pLAn,” City of Los Angeles 2015), adopted in April 2015, is a roadmap to achieving short-term results, and sets a path to strengthen and transform the City of Los Angeles in future decades. Recognizing the risks posed by climate change, Mayor Garcetti set time-bound outcomes on climate action, most notably to reduce GHG emissions by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, compared to a 1990 baseline. Through the completion and verification of the GHG inventory update, the City concluded that:

- The City accounted for approximately 36.2 million metric tons of CO₂e in 1990;
- The most recent inventory shows that emissions fell to 29 million metric tons of CO₂e in 2013; and
- Emissions are 20 percent below the 1990 baseline as of 2013, putting the City nearly halfway to the 2025 *Sustainable City pLAn* reduction target of 45 percent. In addition, the 20 percent reduction exceeds the 15 percent statewide goal listed in the *First Update to the AB 32 Scoping Plan*.

The 2019 version of the pLAn, *LA’s Green New Deal* (City of Los Angeles 2019), accelerated the City’s reduction targets to 50 percent below 1990 levels by 2025, 73 percent below 1990 levels by 2035, and becoming carbon neutral by 2050. By following the 2019 Green New Deal Pathway, the City would achieve an additional 30 percent decrease in GHG emissions beyond the targets set in the 2015 pLAn.

3.4.1.4 Zero Emissions 2028 Roadmap

In November 2019, the Transportation Electrification Partnership, established by the Los Angeles Cleantech Incubator, released the Zero Emissions 2028 Roadmap Version 2.0 (TEP 2019). This roadmap sets the goal to move toward an additional 25 percent reduction in GHG emissions and air pollution beyond current commitments through accelerating transportation electrification by the time the world arrives in Los Angeles for the 2028 Olympic and Paralympic Games. The Partnership’s Leadership Group includes the CARB, Los Angeles Mayor Eric Garcetti, County of Los Angeles, Metro, Los Angeles Department of Water and Power, and the Los Angeles Cleantech Incubator. Construction and operation of

the proposed project would not interfere with planned upgrades to the electric grid infrastructure or introduce new non-electric vehicles to the regional transportation network. The goals of the Zero Emissions 2028 Roadmap would not be compromised by the Project.

3.4.2 City of Vernon

The City of Vernon has stated a commitment to stimulating green development within the City, while expanding the City's capacity to grow. The City has prepared a *Sustainability Action Plan* (City of Vernon 2011). The purpose of the *Sustainability Action Plan* was to establish a baseline GHG inventory, identify specific areas in which the City can become more efficient and reduce GHG emissions, and set measurable and achievable GHG reduction targets. Transportation and land use goals in the *Sustainability Action Plan* include reducing traffic congestion and decreasing GHG emissions generated from transportation activities. The City of Vernon is also creating a climate action plan that will provide guidance to the City on how to take advantage of opportunities to reduce emissions of gases linked to climate change.

3.4.3 Los Angeles County – Florence-Firestone Community

The *Community Climate Action Plan* (County of Los Angeles 2015) was adopted as part of the *Los Angeles County General Plan 2035* on October 6, 2015. The *Community Climate Action Plan* describes the County's plan to reduce the impacts of climate change by reducing GHG emissions from community activities in the unincorporated areas of Los Angeles County by at least 11 percent below 2010 levels by 2020. There are 26 actions grouped into five strategy areas: green building and energy; land use and transportation; water conservation and wastewater; waste reduction, reuse, and recycling; and land conservation and tree planting. Many of the local actions are cost effective, particularly in the green building and energy strategy area, with several energy efficiency investments that can recoup initial costs in one to five years. In addition to reducing GHG emissions, all local actions have many co-benefits, such as improved public health.

3.4.4 City of Cudahy

The *City of Cudahy 2040 General Plan Air Quality Element* (City of Cudahy 2010) includes a section on global warming. The Air Quality Element states that air quality is impacted by land use, local circulation systems, and transportation services. Policies and programs included in the General Plan mirror sustainable development concepts that are effective both in reducing dependence on the private automobile and reducing VMT and hence air pollution. The Land Use and Housing Elements encourage transit-oriented development while the Circulation Element provides for the maintenance of a comprehensive transit framework that will be effective in reducing air quality emissions from local private vehicles.

3.4.5 City of South Gate

The *City of South Gate General Plan* (December 2009) includes a Green City Element. This element contains goals and policies to create a “greener” city, and includes directions for park, civic plazas, open space, rivers, trails, equestrian facilities, the conservation of natural resources, energy and climate change, and green buildings. The General Plan includes numerous mitigation and adaptation strategies related to climate change. Mobility goals and objectives include improving local and regional transit service in the City and encouraging walking, biking and use of transit, through a variety of supportive land use development and urban design measures.

3.4.6 City of Downey

The City of Downey has implemented a Green Task Force to educate and inform the City of Downey to foster greater environmental awareness and ensure continued implementation of sustainable practices throughout the City. The goals of the Green Task Force are to:

- improve public and business community knowledge of environmental issues and priorities;
- encourage more sustainable practices to protect the environment, the City, and public health;
- address community environmental concerns and advise City Council on potential courses of action; and
- focus on both short-term and long-term approaches to greater sustainability in the Downey community.

3.4.7 City of Bellflower

The City of Bellflower *Climate Action Plan* (City of Bellflower 2012) is a roadmap for achieving communitywide energy and GHG emissions reductions that encourages the City to grow smarter and more sustainably. The *Climate Action Plan*:

- Inventories 2010 GHG emissions to identify and understand the sources and quantities of emissions within the City;
- Develops GHG emissions reduction strategies and measures to reduce Bellflower's emissions in order to meet voluntary statewide emissions targets outlined in the California Climate Action Scoping Plan and EO S-03-05;
- Outlines an approach for Bellflower to continually monitor progress towards GHG emissions targets and the effectiveness of GHG reduction measures;
- Establishes a 2020 emissions target of 17 percent and a 2030 emissions reduction goal of 19 percent; and
- Serves as a reference document for the streamlined review of project-related GHG emissions under CEQA within the City.

3.4.8 City of Artesia

The *City of Artesia General Plan* (City of Artesia 2014) includes an Air Quality and Climate Change Element. The document includes a Community Planning Principle that states changes in lifestyle and behavior patterns, as well as management practices, can contribute to climate change mitigation and have a positive role in reducing GHG emissions. Community policies include:

- promote a balance of residential, commercial, institutional and recreational uses with adjacencies that reduce VMT; and
- cooperate with the state, the SCAG, and the Gateway Council COG to achieve mandates imposed by AB 32, which calls for reduction of GHG emissions to 1990 levels by 2020; by EO S-3-05, which calls for a reduction of GHG emissions to 80 percent below 1990 levels by 2050; and by SB 375, which promotes and prioritizes transit-oriented development.

4 AFFECTED ENVIRONMENT/EXISTING CONDITIONS

4.1 California Emissions

The majority of California GHG emissions are attributed to automobile exhaust associated with the transportation sector, including public and private vehicles. As shown in Table 4.1, transportation emissions declined from 182 million metric tons of CO₂e (MMTCO₂e) to 174 MMTCO₂e between 2008 and 2017. Between October 2015 and February 2016, an exceptional natural gas leak event occurred at the Aliso Canyon natural gas storage facility that resulted in unexpected GHG emissions of considerable magnitude. The exceptional incident released approximately 109,000 metric tons of methane, which equated to approximately 1.96 MMTCO₂e of unanticipated emissions in 2015 and an additional 0.52 MMTCO₂e in 2016 (CARB 2016). 2017 is the most recent CARB GHG inventory year available.

Table 4.1. California GHG Emissions Inventory

Sector	Annual MMTCO ₂ e Emissions									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Transportation	182	175	170	167	166	166	167	171	173	174
Industrial	100	98	102	101	102	104	105	103	101	101
Electric power	121	102	91	88	96	90	89	84	68	63
Commercial and residential	49	50	52	54	52	54	48	50	52	53
Agriculture	35	33	34	34	35	34	35	34	34	32
High global warming potential	12	12	14	15	15	17	18	19	19	20
Recycling and waste	8	8	8	8	8	9	9	9	9	9
Emissions total	507	478	471	467	474	474	471	470	456	452

Source: CARB 2019

Notes: The emission total may slightly vary within the years due to rounding of the CARB emissions inventory, which is presented to the hundredths of a decimal point.

GHG = greenhouse gas; MTCO₂e = million metric tons of CO₂e

The occurrence of unexpected incidents such as the Aliso Canyon natural gas leak and the exacerbated severity of drought and wildfires throughout the state are impossible to predict and present additional challenges in reducing statewide GHG emissions. According to the CARB, the emissions associated with the unexpected gas leak will be mitigated in the future through projects funded by the Southern California Gas Company based on legal settlement. The emissions are presented alongside but tracked separately from routine inventory emissions. While the GHG emissions produced by these atypical circumstances are not included in the state routine inventory emissions, ultimately California must account for and mitigate the emissions to achieve its climate goals.

4.2 Regional Emissions

Based on SCAG's estimated regional transportation GHG emissions presented in the 2016-2040 RTP/SCS, approximately 185,519 tons per day of regional transportation-related CO₂ emissions would occur in 2040, for a total of 67.71 MMTCO₂e annually. Los Angeles County, the largest county in the SCAG region, represents 78,831 tons per day of transportation emissions (50 percent of the regional transportation total).

4.3 Metro Transit System Emissions

Metro has prepared detailed emissions inventories covering 2012 through 2017 (Metro 2018). With regards to the Metro transportation and transit network, the single largest contributor to Metro GHG emissions is the directly operated bus fleet that accounts for approximately 57 percent of systemwide emissions that total 432,000 MTCO₂e in 2017, according to Metro's Sustainability Strategic Plan 2020. However, the Metro transit network offsets considerably more emissions than it generates. In 2017, Metro's net GHG emissions benefit was approximately 580,000 MTCO₂e due to displacement of on-road vehicle trips and land use benefits. New fleet technologies powered by renewable energy and reduced building energy usage can reduce Metro's emissions over the long term. Since 2012, emissions resulting from building energy use have decreased by 23 percent while emissions from water consumption have been cut in half. In 2017, transportation mode shift associated with operation of the Metro transit system resulted in a net operational reduction in GHG emissions of 40,758 metric tons per year (Metro 2018). Through implementation of the *Climate Action and Adaptation Plan*, Metro is committed to reducing systemwide GHG emissions by 79 percent by 2030 relative to the 2017 baseline.

5 ENVIRONMENTAL CONSEQUENCES / ENVIRONMENTAL IMPACTS

5.1 No Build Alternative

The No Build Alternative includes regional projects identified in the 2016-2040 RTP/SCS, Metro's 2009 *Long-Range Transportation Plan* (LRTP), and Measure M. These projects include the Metro East-West Line/Regional Connector/Eastside Phase 2, California High-Speed Rail, Metro North-South Line/Regional Connector, I-710 South Corridor, I-105 Express Lane, I-605 Corridor "Hot Spot" improvements, and improvements to the Metro bus system and local municipality bus systems. The No Build Alternative also includes local transportation-related projects, including Link Union Station, Active Transportation Rail to Rail/River Corridor, Los Angeles Union Station (LAUS) Forecourt and Esplanade Improvement, I-710 Corridor Bike Path, and Cesar Chavez Bus Stop Improvements projects.

Under the No Build Alternative, projects identified in the 2016-2040 RTP/SCS, Metro's 2009 LRTP, and Measure M, as well as local projects, would continue to be built. The No Build Alternative excludes the facilities and infrastructure of the Build Alternatives that would increase GHG emissions. The No Build Alternative would not reduce regional GHG emissions to the same degree as the Build Alternatives. The reduction in regional GHG emissions under the No Build Alternative is attributed to improvements in fuel and engine technologies mandated by regulatory programs that are built into the emissions modeling software. Nonetheless, the No Build Alternative would not result in an adverse effect related to GHG emissions during construction.

5.2 Alternative 1: Los Angeles Union Station to Pioneer Station

As discussed in Section 1.5.1, implementation of the Build Alternatives will introduce a new LRT corridor that will provide an alternative mode of transportation to automobile use, which will spur transportation mode shift and ultimately reduce on-road VMT, as demonstrated by the VMT data presented in Table 1.2 and Table 1.3. Metro has recognized that transportation mode shift is the most effective mechanism of displacing GHG emissions from on-road motor vehicles. In addition to induced transportation mode shift, operational GHG emissions would be generated indirectly through electricity consumption and directly through mobile and facility sources involved in MSF operations, as well as amortized construction emissions. Table 5.1 presents a summary of the GHG emissions analysis for the No Build Alternative and the Build Alternatives in 2042. The GHG emissions for the Build Alternatives include annual average emissions from construction of the LRT corridor and all support infrastructure and facilities amortized over a 30-year operational lifetime.

As shown in Table 1.3, Alternative 1 would result in a reduction of approximately 136 million annual VMT compared to the No Build Alternative for 2042. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources. As shown in Table 5.1, Alternative 1 would reduce regional emissions by 34,824 MTCO_{2e} annually (a 0.061 percent decrease) relative to the No Build Alternative. GHG emissions modeling for Alternative 1 is consistent with the conclusions of the FTA programmatic assessment for light rail projects demonstrating net reductions in GHG emissions for high-ridership LRT projects without diesel bus fleet components. Thus, implementation of Alternative 1 would not result in an adverse effect related to GHG emissions.

Table 5.1. Annual Operational GHG Emissions (2042)

Emissions Source	Annual MTCO ₂ e							
	Existing 2017	No Build Alternative 2042	Alternative 1 2042	Alternative 2 2042	Alternative 3 2042	Alternative 4 2042	Design Option 1 2042	Design Option 2 2042
Regional On-Road VMT	66,199,911	57,179,713	57,133,429	57,140,967	57,168,737	57,168,568	57,129,472	57,132,225
LRT Propulsion/Station/Parking Energy	–	–	8,179	8,213	6,633	3,885	8,179	8,179
MSF Operations ¹	–	–	1,834	1,834	1,834	1,834	1,834	1,834
Amortized Construction ²	–	–	1,404	1,466	828	511	1,446	1,483
Total Emissions	66,199,911	57,179,713	57,144,846	57,152,480	57,178,032	57,174,798	57,140,887	57,143,678
Change from No Build Alternative	–	–	(34,824)	(27,234)	(1,681)	(4,916)	(38,783)	(35,992)
Percent Change from No Build Alternative	–	–	(0.061%)	(0.048%)	(0.003%)	(0.009%)	(0.068%)	(0.063%)

Source: TAHA, 2020

Notes ¹ Operational MSF emissions are presented for the Paramount option, as it comprises more building area than the Bellflower option and therefore marginally higher operational GHG emissions.

² Per SCAQMD guidance (2008), construction emissions are averaged over a 30-year operational lifetime and assessed in combination with emissions associated with Project operations.

Notes: GHG = greenhouse gas; LRT = light rail transit; MSF = maintenance and storage facility; MTCO₂e = metric tons of CO₂e; VMT = vehicle miles traveled; () = decrease/reduction

5.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, Alternative 2 does not include a direct source of emissions outside of MSF operations, and indirect GHG emissions would be generated through energy use. As shown in Table 1.3, Alternative 2 would result in a reduction of approximately 131 million annual VMT compared to the No Build Alternative for 2042. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources, and Metro recognizes transportation mode shift as the most effective mechanism in displacing transportation sector GHG emissions. As shown in Table 5.1, Alternative 2 would reduce regional emissions by 27,234 MTCO₂e annually (a 0.048 percent decrease) relative to the No Build Alternative. The decrease in annual operational GHG emissions relative to the No Build Alternative is attributed to increased Metro ridership and enhanced circulation patterns. GHG emissions modeling for Alternative 2 is consistent with conclusions from the FTA programmatic assessment for light rail projects demonstrating net reductions in annual GHG emissions for high-ridership LRT projects without diesel bus fleet components. Thus, implementation of Alternative 2 would not result in an adverse effect related to GHG emissions.

5.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would follow the same general alignment as Alternatives 1 and 2, with termini located at the Slauson/A Line Station in the City of Los Angeles and Pioneer Station in the City of Artesia. Alternative 3 consists of 14.8 miles of alignment and includes nine stations. The shorter alignment would result in less VMT reduction from the No Build Alternative compared to Alternatives 1 and 2 and would also require less energy to operate the LRT and stations, as the shorter track length and reduced number of stations would consume less electricity for propulsion, lighting, and other end uses. As shown in Table 1.3, Alternative 3 would result in a reduction of approximately 45 million annual VMT compared to the No Build Alternative for 2042. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources, and Metro recognizes transportation mode shift as the most effective mechanism in displacing transportation sector GHG emissions. Table 5.1 shows that Alternative 3 would reduce regional GHG emissions by approximately 1,681 MTCO₂e annually (a 0.003 percent decrease) relative to the No Build Alternative. The decrease in annual operational GHG emissions relative to the No Build Alternative is attributed to increased Metro ridership and enhanced circulation patterns. GHG emissions modeling for Alternative 3 is consistent with conclusions from the FTA programmatic assessment for light rail projects life-cycle emissions demonstrating net reductions in annual GHG emissions for high-ridership LRT projects without diesel bus fleet components. Thus, implementation of Alternative 3 would not result in an adverse effect related to GHG emissions.

5.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would follow the same general alignment as Alternatives 1 and 2, with termini located at the I-105/C (Green) Line Station in the City of South Gate and Pioneer Station in the City of Artesia. Alternative 4 consists of 6.6 miles of alignment and includes four stations. The shorter alignment would result in less VMT reduction from the No Build Alternative and would also require less energy to operate the LRT and stations. As shown in Table 1.3, Alternative 4 would result in a reduction of approximately 25 million annual VMT compared to

the No Build Alternative for 2042. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources, and Metro recognizes transportation mode shift as the most effective mechanism in displacing transportation sector GHG emissions. Table 5.1 shows that Alternative 4 would reduce regional emissions by approximately 4,915 MTCO₂e annually (a 0.008 percent decrease) relative to the No Build Alternative. GHG emissions modeling for Alternative 4 is consistent with conclusions from the FTA programmatic assessment for light rail projects life-cycle emissions demonstrating net reductions in annual GHG emissions for high-ridership LRT projects without diesel bus fleet components. Thus, implementation of Alternative 4 would not result in an adverse effect related to GHG emissions

5.6 Design Options

Table 5.1 shows the GHG emissions for Design Options 1 and 2 in comparison with the No Build Alternative and Alternative 1. Design Options 1 and 2 would only apply to Alternative 1.

5.6.1 Design Option 1

Design Option 1 would relocate the underground Los Angeles Union Station to just east of the existing Metropolitan Water District building. Implementation of Design Option 1 would result in similar LRT/station GHG emissions as Alternative 1. As shown in Table 1.3, the overall reduction in annual VMT would be approximately 152 million miles relative to the No Build Alternative for 2042, which would represent an additional decrease of 16 million VMT than Alternative 1. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources, and Metro recognizes transportation mode shift as the most effective mechanism in displacing transportation sector GHG emissions. As shown in Table 5.1, Design Option 1 would reduce regional emissions by 38,783 MTCO₂e annually (a 0.068 percent decrease). GHG emissions modeling for Design Option 1 is consistent with conclusions from the FTA programmatic assessment for light rail projects life-cycle emissions demonstrating net reductions in annual GHG emissions for high-ridership LRT projects without diesel bus fleet components. Thus, implementation of Design Option 1 would not result in an adverse effect related to GHG emissions.

5.6.2 Design Option 2

Design Option 2 would add the optional Little Tokyo Station to Alternative 1. Implementation of Design Option 2 would result in similar LRT/station GHG emissions as Alternative 1. As shown in Table 1.3, the overall reduction in annual on-road VMT would be approximately 138 million miles relative to the No Build Alternative for 2042, which would represent an additional decrease of approximately 2 million more VMT than Alternative 1. Transportation planning initiatives have determined that displacing on-road VMT through public transit is fundamental to improving regional transportation and reducing GHG emissions from transportation sources, and Metro recognizes transportation mode shift as the most effective mechanism in displacing transportation sector GHG emissions. As shown in Table 5.1, Design Option 2 would reduce regional emissions by 35,992 MTCO₂e annually (a 0.06 percent decrease). GHG emissions modeling for Design Option 1 is consistent with conclusions from the FTA programmatic assessment for light rail projects life-cycle emissions demonstrating net reductions in annual GHG emissions for high-ridership LRT projects without diesel bus fleet

components. Thus, implementation of Design Option 2 would not result in an adverse effect related to GHG emissions.

5.7 Maintenance and Storage Facility

5.7.1 Paramount MSF Site Option

The Paramount MSF site option would result in the consumption of fuels and electricity from the operation of facility equipment and vehicle trips to and from the site. As the MSF site option is a component of the Build Alternatives, energy consumption is accounted for in the overall analysis of the Build Alternatives. It is estimated that the Paramount MSF site option, would generate approximately 1,998 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions. Annual operational emissions would be approximately 1,834 MTCO₂e, as presented in Table 5.1. Construction emissions are accounted for in total amortized emissions. The Paramount MSF site option would comply with mandatory Title 24 and CALGreen Building Code requirements and would achieve a minimum Silver rating from the Leadership in Energy and Environmental Design (LEED) certification, as specified in the ECMP. The Paramount MSF would support an LRT system achieving a net GHG emissions reduction compared to the No Build Alternative. Therefore, development of the Paramount MSF site option as a component of the Build Alternatives would not result in an adverse effect related to GHG emissions.

5.7.2 Bellflower MSF Site Option

Similar to the Paramount MSF site option, the Bellflower MSF site option would result in the consumption of fuels and electricity, and it is a component of the Build Alternatives in which energy consumption is accounted for in the overall analysis of the Build Alternatives. The Bellflower MSF site option would generate approximately 1,885 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions. Annual operational emissions would be approximately 1,720 MTCO₂e. The Bellflower MSF site option would comply with mandatory Title 24 and CALGreen Building Code requirements and would achieve a minimum Silver rating from the Leadership in Energy and Environmental Design (LEED) certification, as specified in the ECMP. The Bellflower MSF would support an LRT system achieving a net GHG emissions reduction compared to the No Build Alternative. Therefore, development of the Bellflower MSF site option as a component of the Build Alternatives would not result in an adverse effect related to GHG emissions.

6 CALIFORNIA ENVIRONMENTAL QUALITY ACT DETERMINATION

To satisfy CEQA requirements, GHG emission impacts would also be analyzed in accordance with Appendix G of the *CEQA Guidelines*. A project would have a significant effect on the environment related to GHG emissions 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 GHG emissions.

The State CEQA Guidelines recommend 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 LRT corridor. Neither CARB, OPR, SCAQMD, nor Metro have officially promulgated specific thresholds for analyzing GHG emissions under CEQA. CARB and CA OPR acknowledge that transforming public transit systems and reducing VMT is an effective climate adaptation strategy. CA OPR recommends the streamlining of GHG emissions impacts analyses for transit and active transportation projects because these projects reduce GHG emissions, increase multimodal transportation networks, and facilitate mixed use development, which are crucial land use planning initiatives for climate adaptation. As such, project GHG emissions are assessed in the context of the existing GHG emissions inventory, the Metro systemwide GHG emissions displacement, and climate adaptation plans and policies.

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

OPR recommends the streamlining of GHG emissions impacts analyses for transit projects because these projects align with the statutory goals of regional transportation planning to reduce GHG emissions, increase multimodal transportation networks, and facilitate mixed use development, which are all crucial land use planning initiatives for climate adaptation (CA OPR, 2018). Therefore, OPR recognizes that transit projects are presumed to cause a less-than significant impact on transportation and transportation-related GHG emissions under CEQA. The impact discussions refer to the 2042 emissions analysis presented in the NEPA portion of the document for informational disclosure.

6.1.1 No Project Alternative

The No Project Alternative would not involve operation of any project-related facilities or infrastructure and would not introduce any new direct or indirect sources of GHG emissions into the region. Under the No Project Alternative, the Build Alternatives would not be constructed, and the existing Metro LRT network would remain unchanged. Existing on-road VMT would not be reduced throughout the Project Corridor (Table 1.2); energy consumption used to power the Metro LRT system would not increase; and sources of GHG emissions involved in MSF operations would not be present.

Climate Change is a significant issue on multiple geographic levels, including regionally and statewide, and ongoing efforts to reduce emissions both locally and regionally would remain in place. Numerous GHG reduction plans and policies have been developed by local, regional, State, and national authorities to reduce emissions. These are discussed in detail in the Regulatory Framework section of this Chapter. The No Project Alternative would neither contribute to nor interfere with ongoing endeavors to achieve the GHG emission reduction targets. Additionally, the No Project Alternative includes a wide range of transit projects designed to reduce VMT and regionally significant climate change effects. These projects are accounted for in the approved and adopted SCAG 2016–2040 RTP/SCS, the CARB Climate Change Scoping Plan, and other regional and state GHG reduction plans. Therefore, impacts related to the generation of GHG emissions would be less than significant, and no mitigation measures are required.

6.1.1.1 Mitigation Measures

No mitigation measures are required.

6.1.1.2 Impacts Remaining After Mitigation

Less than significant impact.

6.1.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Implementation of Alternative 1 would generate direct GHG emissions through operations at the MSF and indirect GHG emissions would be generated through energy use (i.e., LRT propulsion, lighting and accessory equipment at station platforms, and MSF operations). GHG emissions from on-road motor vehicles would also be substantially affected through induced mode shift emissions displacement. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Alternative 1—if operational in 2017—would result in a reduction of approximately 75 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro, 2018). As shown in Table 1.3, Alternative 1 would result in a reduction of approximately 136 million annual VMT in 2042 compared to the No Build Alternative and the GHG emissions impact would be less than significant in accordance with CA OPR (CA OPR, 2018) and CARB (CARB, 2019) guidance.

As demonstrated by the analysis in Table 5.1, implementation of Alternative 1 would reduce regional emissions by 34,824 MTCO₂e annually (a 0.061 percent decrease) in 2042. Implementation of Alternative 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 1 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Alternative 1 would result in a less than significant impact related to the generation of GHG emissions.

6.1.2.1 Mitigation Measures

No mitigation measures are required.

6.1.2.2 Impacts Remaining After Mitigation

Less than significant impact.

6.1.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to Alternative 1, with the exception of the MSF, Alternative 2 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Induced transportation mode shift would displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 2. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Alternative 2—if operational in 2017—would result in a reduction of approximately 75 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO_{2e} annually and achieved a net reduction of 40,758 MTCO_{2e} (Metro, 2018). As shown in Table 1.3, implementation of Alternative 2 would reduce annual VMT in 2042 by approximately 131 million compared to the No Build Alternative and the GHG emissions impact would be less than significant in accordance with CA OPR and CARB guidance.

As demonstrated by the analysis in Table 5.1, Alternative 2 would decrease regional emissions by 27,234 MTCO_{2e} annually (a 0.048 percent decrease) in 2042. Implementation of Alternative 2 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 2 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Alternative 2 would result in a less than significant impact related to the generation of GHG emissions.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

6.1.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would follow the same general alignment as Alternatives 1 and 2, with termini located at the Slauson/A Line Station in the City of Los Angeles and Pioneer Station in the City of Artesia. Alternative 3 consists of 14.8 miles of alignment and includes nine stations. The shorter alignment would result in less VMT reduction from the No Build Alternative and would also require less energy to operate the LRT and stations.

Similar to Alternative 1, with the exception of the MSF, Alternative 3 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 3. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Alternative 3—if operational in 2017—would result in a reduction of approximately 25 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO_{2e} annually and achieved a net reduction of 40,758 MTCO_{2e} (Metro, 2018). As shown in Table 1.3, Alternative 3 would result in a reduction of approximately 45 million annual VMT in 2042 compared to the No Build Alternative, and the GHG emissions impact would be less than significant in accordance with CA OPR and CARB guidance.

As demonstrated by the analysis in Table 5.1, Alternative 3 would reduce regional emissions by approximately 1,681 MTCO_{2e} annually (a 0.003 percent decrease) in 2042. Implementation of Alternative 3 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 3 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Alternative 3 would result in a less than significant impact related to the generation of GHG emissions.

6.1.4.1 Mitigation Measures

No mitigation measures are required.

6.1.4.2 Impacts Remaining After Mitigation

Less than significant impact.

6.1.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would follow the same general alignment as Alternatives 1 and 2, with termini located at the I-105/C (Green) Line Station in the City of South Gate and Pioneer Station in the City of Artesia. Alternative 4 consists of 6.6 miles of alignment and includes four stations. The shorter alignment would result in less VMT reduction from the No Build Alternative and would also require less energy to operate the LRT and stations.

Similar to Alternative 1, with the exception of the MSF, Alternative 4 does not include a direct source of emissions and indirect GHG emissions would be generated through energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Alternative 4. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-

2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Alternative 4—if operational in 2017—would result in a reduction of approximately 13 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro, 2018). As shown in Table 1.3, Alternative 4 would result in a reduction of approximately 25 million annual VMT in 2042 compared to the No Build Alternative and the GHG emissions impact would be less than significant in accordance with CA OPR and CARB guidance.

As demonstrated by the analysis in Table 5.1, Alternative 4 would reduce regional emissions by 4,916 MTCO₂e annually (a 0.009 percent decrease). Implementation of Alternative 4 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 4 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Alternative 4 would result in a less than significant impact related to the generation of GHG emissions.

6.1.5.1 Mitigation Measures

No mitigation measures are required.

6.1.5.2 Impacts Remaining After Mitigation

Less than significant impact.

6.1.6 Design Options

6.1.6.1 Design Option 1

Similar to Alternative 1, with the exception of the MSF, Design Option 1 does not include a direct source of emissions and indirect GHG emissions would be generated through typical LRT and station energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Design Option 1. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Design Option 1—if operational in 2017—would result in a reduction of approximately 82 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro, 2018). As shown in Table 1.3, Design Option 1 would result in a reduction of approximately 152 million annual VMT in 2042 compared to the No Build Alternative and the GHG emissions impact would be less than significant in accordance with CA OPR and CARB guidance.

As demonstrated by the analysis in Table 5.1, Design Option 1 would reduce regional emissions by 38,783 MTCO₂e annually (a 0.068 percent decrease). Implementation of Design Option 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Design Option 1 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Design Option 1 would result in a less than significant impact related to the generation of GHG emissions.

6.1.6.2 Design Option 2

Similar to Alternative 1, with the exception of the MSF, Design Option 2 does not include a direct source of emissions and indirect GHG emissions would be generated through typical LRT and station energy use. Induced transportation mode shift would also displace GHG emissions from on-road vehicle trips that would not occur with implementation of Design Option 2. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth, and Metro identifies VMT reduction as the primary contributor to GHG emissions displacement. As shown in Table 1.2, Design Option 2—if operational in 2017—would result in a reduction of approximately 76 million annual VMT compared to the Existing (No Project) Conditions, further contributing to the Metro public transit system mode shift that in 2017 displaced approximately 431,009 MTCO₂e annually and achieved a net reduction of 40,758 MTCO₂e (Metro, 2018). As shown in Table 1.3, Design Option 2 would result in a reduction of approximately 138 million annual VMT in 2042 compared to the No Build Alternative and the GHG emissions impact would be less than significant in accordance with CA OPR and CARB guidance.

As demonstrated by the analysis in Table 5.1, Design Option 2 would reduce regional emissions by 35,992 MTCO₂e annually (a 0.063 percent decrease). Implementation of Design Option 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Design Option 2 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips. Therefore, Design Option 2 would result in a less than significant impact related to the generation of GHG emissions.

6.1.6.3 Mitigation Measures

No mitigation measures are required.

6.1.6.4 Impacts Remaining After Mitigation

Less than significant impact.

6.1.7 Maintenance and Storage Facility

6.1.7.1 Paramount MSF Site Option

The Paramount MSF site option would result in the consumption of fuels and electricity from the operation of facility equipment and vehicle trips to and from the site. As the MSF site option is a component of the Build Alternatives, energy consumption is accounted for in the overall analysis of the Build Alternatives. It is estimated that the Paramount MSF site option would generate approximately 1,998 MTCO₂e per year, including 165 MTCO₂e of amortized construction emissions. Annual operational emissions specific to the Paramount MSF would be approximately 1,834 MTCO₂e per year, as shown in Table 5.1. The MSF site option would comply with mandatory Title 24 and CALGreen Building Code requirements, would achieve a minimum LEED Silver rating, and would support an LRT system achieving a net GHG emissions reduction by contributing to implementation of the LRT and the associated VMT reductions. Therefore, the Paramount MSF site option would result in a less than significant impact related to the generation of GHG emissions.

6.1.7.2 Bellflower MSF Site Option

Similar to the Paramount MSF site option, the Bellflower MSF site option would also result in the consumption of fuels and electricity and is a component of the Build Alternatives in which energy consumption is accounted for in the overall analysis of the Build Alternatives. The Bellflower MSF site option would generate approximately 1,885 MTCO₂e per year, including approximately 165 MTCO₂e of amortized construction emissions. The MSF site option would comply with mandatory Title 24 and CALGreen Building Code requirements, would achieve a minimum LEED Silver rating, and would contribute to a net GHG emissions reduction by contributing to implementation of the LRT and the associated VMT reductions. Therefore, the Bellflower MSF site option would result in a less than significant impact related to the generation of GHG emissions.

6.1.7.3 Mitigation Measures

No mitigation measures are required.

6.1.7.4 Impacts Remaining After Mitigation

Less than significant impact.

6.2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

6.2.1 No Project Alternative

The No Project Alternative would not include the operation of any project-related facilities or infrastructure. Therefore, no significant impact would occur. The No Project Alternative would not reduce VMT and associated GHG emissions from transportation sources (Table 1.2).

6.2.1.1 Mitigation Measures

No mitigation measures are required.

6.2.1.2 Impacts Remaining After Mitigation

No Impact.

6.2.2 Alternative 1: Los Angeles Union Station to Pioneer Station

No state, regional, or local GHG reduction plans promote increased passenger vehicles on the roadway network. The 2017 Climate Change Scoping Plan identifies that the transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing VMT. CARB acknowledges that employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved. Furthermore, CARB determined it would not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth. Implementation of Alternative 1 would enhance regional transportation planning efforts to reduce VMT and GHG emissions from transportation sources. Alternative 1 is consistent with the objectives of CA OPR and CARB plans and policies to reduce GHG emissions from passenger vehicles by providing alternative transportation modes for both local and regional trips.

Implementation of Alternative 1 would reduce annual on-road VMT by approximately 75 million VMT if operational in 2017—as shown in Table 1.2—and would reduce annual on-road VMT by approximately 136 million in 2042, as shown in Table 1.3. Metro identifies transportation mode shift as the primary mechanism of GHG emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide and regional GHG emissions reduction strategies within long range planning objectives. Alternative 1 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as analyzed in Table 5.1 and enhancing the Metro transit system's net displacement of GHG emissions. Therefore, Alternative 1 would result in a less than significant impact related to GHG reduction plans.

6.2.2.1 Mitigation Measures

No mitigation measures are required.

6.2.2.2 Impacts Remaining After Mitigation

Less than significant impact.

6.2.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Similar to the other Build Alternatives, Alternative 2 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans. Implementation of Alternative 2 would reduce annual on-road VMT by approximately 75 million VMT if operational in 2017—as shown in Table 1.2—and would reduce annual on-road VMT by approximately 131 million in 2042, as shown in Table 1.3. Metro identifies transportation mode shift as the primary mechanism of GHG emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide and regional GHG emissions reduction strategies within long range planning objectives. Alternative 2 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as analyzed in Table 5.1 and enhancing the Metro transit system's net displacement of GHG emissions. Therefore, Alternative 2 would result in a less than significant impact related to GHG reduction plans.

6.2.3.1 Mitigation Measures

No mitigation measures are required.

6.2.3.2 Impacts Remaining After Mitigation

Less than significant impact.

6.2.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to the other Build Alternatives, Alternative 3 would be consistent with the 2016–2040 RTP/SCS and relevant GHG reduction and conservation plans. Implementation of Alternative 3 would reduce annual on-road VMT by approximately 25 million VMT if operational in 2017— as shown in Table 1.2—and would reduce annual on-road VMT by approximately 45 million in 2042, as shown in Table 1.3. Metro identifies transportation mode shift as the primary mechanism of GHG emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide and regional GHG emissions reduction strategies within long range planning objectives. Alternative 3 would be consistent with the 2016–2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as analyzed in Table 5.1 and enhancing the Metro transit system’s net displacement of GHG emissions. Therefore, Alternative 3 would result in a less than significant impact related to GHG reduction plans.

6.2.4.1 Mitigation Measures

No mitigation measures are required.

6.2.4.2 Impacts Remaining After Mitigation

Less than significant impact.

6.2.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to the other Build Alternatives, Alternative 4 would be consistent with the 2016–2040 RTP/SCS and relevant GHG reduction and conservation plans. Implementation of Alternative 4 would reduce annual on-road VMT by approximately 13 million VMT if operational in 2017— as shown in Table 1.2—and would reduce annual on-road VMT by approximately 25 million in 2042, as shown in Table 1.3. Metro identifies transportation mode shift as the primary mechanism of GHG emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide and regional GHG emissions reduction strategies within long range planning objectives. Alternative 4 would be consistent with the 2016–2040 RTP/SCS and relevant GHG reduction and conservation plans through achieving a net reduction in emissions as analyzed in Table 5.1 and enhancing the Metro transit system’s net displacement of GHG emissions. Therefore, Alternative 4 would result in a less than significant impact related to GHG reduction plans.

6.2.5.1 Mitigation Measures

No mitigation measures are required.

6.2.5.2 Impacts Remaining After Mitigation

Less than significant impact.

6.2.6 Design Options

Design Option 1 and Design Option 2. Similar to Alternative 1, Design Options 1 and 2 would be consistent with the 2016-2040 RTP/SCS and relevant GHG reduction and conservation plans. Therefore, Design Options 1 and 2 would result in a less than significant impact related to GHG reduction plans.

6.2.6.1 Mitigation Measures

No mitigation measures are required.

6.2.6.2 Impacts Remaining After Mitigation

Less than significant impact.

6.2.7 Maintenance and Storage Facility

Paramount MSF Site Option and Bellflower MSF Site Option. The MSF site options would be designed and constructed in compliance with mandatory Title 24 and the CALGreen Building Code requirements and would achieve a minimum of a LEED Silver rating, as specified in the ECMP. The MSF is a necessary component of the Build Alternatives and would be consistent with applicable policies and plans designed to enhance sustainable development and reduce the regional GHG emissions inventory. The Paramount and Bellflower MSF site options would generate approximately 1,998 MTCO₂e and 1,885 MTCO₂e annually, respectively. However, the Build Alternatives would ultimately result in a substantial net reduction in regional GHG emissions. Therefore, the MSF would result in a less than significant impact related to GHG emission reduction plans.

6.2.7.1 Mitigation Measures

No mitigation measures are required.

6.2.7.2 Impacts Remaining After Mitigation

Less than significant impact.

7 CONSTRUCTION IMPACTS

7.1 Construction Activities

Construction activities associated with the West Santa Ana Branch Project are detailed in the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2021a).

7.2 Regulatory Background and Methodology

7.2.1 Regulatory Background

All federal, state, regional, and local regulations and guidelines pertinent to the construction the WSAB Project would be followed. For additional regulatory information, refer to the *West Santa Ana Branch Construction Methods Report* (Metro 2021a).

7.2.2 Construction Methodology

The analysis of construction effects considered the anticipated construction activities and phasing and identifies where construction staging could occur. Construction would occur in several stages, including site clearing and demolition activities, excavation and grading, utilities and subgrade installations, and paving. During each phase of construction, GHG emissions would be generated from heavy-duty construction equipment, worker travel to and from the project site, and material import and export using haul trucks. GHG emissions associated with construction of the Build Alternatives were quantified using the CalEEMod Version 2016.3.2, November 2017. Model default assumptions were incorporated where project-specific details were unavailable.

The CalEEMod program generates estimates of annual GHG emissions using emission factors from the CARB OFFROAD emission factors inventory for heavy-duty equipment (expressed in grams of pollutant emitted per hour of equipment use) and emission factors from the CARB EMFAC mobile source emissions model for on-road vehicles (expressed in grams of pollutant emitted per VMT). Table 7.1 presents an overview of the system components and general activity schedules for which estimates of GHG emissions were produced using CalEEMod. SCAQMD recommends that construction emissions be averaged over 30 years and added to operational emissions to determine potential impacts from projects (SCAQMD 2008).

To account for unpredictable circumstances that may arise throughout the construction period, the GHG emissions assessment conservatively evaluated each component and activity for the maximum possible duration, as shown in Table 7.1. Construction of the Project would involve sources of GHG emissions, including off-road equipment exhaust and on-road vehicle exhaust associated with construction workers, material deliveries, and haul trucks. Throughout construction of the Project, the daily equipment activity intensity may vary substantially. The quantification of GHG emissions associated with project construction estimates total annual average GHG emissions, as the atmospheric effects of GHG emissions are cumulative in nature. Therefore, the construction GHG emissions analysis relies on reasonably conservative equipment inventories that would be required to accomplish demolition, excavation, grading, construction, and paving activities throughout the project corridor in totality. In general, it is not anticipated that construction activities would employ more than 60 pieces of heavy-duty off-road equipment on any given day.

Table 7.1. General Construction Activity Schedule

System Component	Activity	Duration (Months)
Relocations	Freight Rail Line Relocation: Relocate existing freight tracks	12-18
	Utility Relocation: Relocate or temporarily reroute utilities	30-40
At-Grade LRT	Guideway: Demolish section to be replaced, preparation of track bed, construction of supporting track slab, laying of rail surface track work	30
	Stations: Develop stations simultaneously with segments using standard building materials	6-24
	Parking Facilities: Preparation, paving, striping; concrete curbs, lighting, driveways, sidewalks and landscaping as necessary	1-3
Aerial LRT	Guideway: Construct foundation columns and elevated sections; rail fastened directly to the top slab of cast-in-place concrete bridge, or separately placed slab on a steel beam bridge, or a pre-cast concrete bridge	12-30
	Stations: Foundations and columns constructed to support platform; track slabs, station amenities, and vertical circulation elements	8-30
Underground LRT	TBM Method: Horizontally excavate tunnel sections, supported by machine shield and pre-cast concrete tunnel liners; TBM requires access to tunnel via shaft or station excavation; TBM dismantled and retrieved through vertical shaft or station excavation at the other end of tunnel alignment	20-50
	Cut-and-Cover: Open cut, doorframe slab, base slab, exterior walls, and columns; excavate ground surface with temporary excavation support, temporary concrete decking placed over cut following first lift of excavation about 12-15 feet below ground surface to allow traffic to pass above; once deck in place, continue excavation and internal bracing; once construction complete, area backfilled and surface permanently restored	15-25
Systems	Guideway: Install all system elements, including electrical, mechanical, signals, communications (including TPSS, OCS, traction power, communications, and train control)	24-48
	Systems Testing and Pre-Revenue Operations: System testing and integration scenario would occur after construction completion	15
MSF	Facility Installation: Construct MSF, storage track, and trackway to allow for movement of LRVs from mainline track to MSF area, includes vehicle wash, TPSS, parking	36

Source: Metro, 2021a

Note: LRT = light rail transit; LRV = light rail vehicle; MSF = maintenance and storage facility; OCS = overhead catenary system; TBM = tunnel boring machine; TPSS = traction power substation

Through coordination with construction contractors and Metro planners, it was determined that a reasonably foreseeable maximum construction crew would comprise up to 900 workers per day along the 19-mile LRT corridor for Alternative 1 and Alternative 2, as well as Alternative 1 + Design Option 1 and Alternative 1 + Design Option 2. Construction of Alternative 3 would require up to 700 workers per day, and construction of Alternative 4 would require up to 300 workers per day. The chronological sequencing of project implementation has not been fully determined. At this time, components are likely to be constructed simultaneously at various locations throughout the project corridor with implementation of each Build Alternative.

Construction of the Build Alternatives would require substantial excavation to accommodate the system components. A summary of the soil export and fill import quantities for each Build Alternative is provided in Table 7.2. Daily haul truck activity would fluctuate throughout the course of construction. Based on feasibility constraints and preliminary schedule coordination, maximum daily truck activity would not exceed 150 hauling loads and 100 material deliveries throughout the project corridor regardless of the Build Alternative ultimately selected.

Table 7.2. Build Alternatives Export and Import Quantities

Build Alternative	Total Export (CY)	Export Truck Load (10-CY Trucks)	Total Import (CY)	Import Truck Loads (10-CY Trucks)
Alternative 1	992,637	99,264	729,300	72,930
Alternative 2	1,178,455	117,846	691,281	69,129
Alternative 3	14,000	1,400	551,476	55,148
Alternative 4	—	—	355,286	35,529
Design Option 1	1,116,797	111,680	779,224	77,923
Design Option 2	1,192,867	119,287	749,183	74,919

Source: Metro, 2021a

Note: CY = cubic yard

All construction activities would be required to comply with provisions of Metro's *Green Construction Policy* (Metro 2011a), which requires stringent equipment and vehicle inspection and maintenance programs to ensure operation within desired manufacturer specifications. All equipment and truck idling would be restricted to 5 minutes or less in accordance with Metro's *Green Construction Policy* and CARB In-Use Off-Road Diesel Vehicle Regulation and Truck and Bus Rule. Adherence to these requirements would minimize GHG emissions during construction.

7.3 Construction Impacts

7.3.1 No Build Alternative

The No Build Alternative would not include construction of any project-related facilities or infrastructure. Therefore, the No Build Alternative would not result in an adverse effect related to construction GHG emissions.

7.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Construction of the underground segments in Alternative 1 would require the use of a tunnel boring machine (TBM) and/or use of the cut-and-cover method, both of which would

generate the greatest magnitude of GHG emissions. Sources of GHG emissions included in the analyses were comprised of heavy-duty construction equipment, haul truck trips used for material import and export, and construction worker vehicle trips. Construction activities involved in implementation of Alternative 1 are anticipated to last up to six years.

Table 7.3 presents the source contributions to Alternative 1 construction GHG emissions. Construction of Alternative 1 would generate approximately 42,098 MTCO₂e, or approximately 1,404 MTCO₂e annually when amortized over a 30-year operational lifetime in accordance with SCAQMD methodology. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. All construction activities would be conducted in accordance with Metro's Green Construction Policy to prevent excessive emissions. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Metro recognizes transportation mode shift as the primary contributor to GHG emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with implementation of Alternative 1. Therefore, Alternative 1 would not result in an adverse effect related to the generation of GHG emissions during construction.

7.3.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Alternative 2 construction activities would be similar to Alternative 1 and would comply with Metro's *Green Construction Policy* to prevent excessive emissions. In addition, construction equipment would be maintained in accordance with manufacturers' specifications. Construction of the underground segments for Alternative 2 would require the same construction methods and include similar sources of GHG emissions as described for Alternative 1. Construction activities involved in implementation of Alternative 2 are anticipated to last up to six years.

As shown in Table 7.3, construction of Alternative 2 would generate approximately 43,961 MTCO₂e, or approximately 1,465 MTCO₂e annually when amortized over a 30-year operational lifetime. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, Alternative 2 would not result in an adverse effect related to the generation of GHG emissions during construction.

7.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 construction activities would be similar to Alternatives 1 and 2 with the exception of the underground construction. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications. Construction activities involved in implementation of Alternative 3 are anticipated to last up to six years.

As shown in Table 7.3, construction of Alternative 3 would generate approximately 24,838 MTCO₂e, or approximately 828 MTCO₂e annually when amortized over a 30-year operational lifetime. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, Alternative 3 would not result in an adverse effect related to the generation of GHG emissions during construction.

Table 7.3. Construction GHG Emissions

Emission Source	MTCO ₂ e ¹						
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Design Option 1	Design Option 2	MSF ²
Off-Road Construction Equipment	17,385	17,936	11,636	6,850	17,385	17,936	2,158
Haul Truck Trips	14,678	15,779	6,204	4,097	15,953	16,279	1,003
Vendor Delivery Trips	2,691	2,691	2,144	1,288	2,691	2,691	459
Construction Worker Trips	7,344	7,555	4,854	3,072	7,344	7,555	1,321
Total Emissions	42,098	43,961	24,838	15,307	43,373	44,461	4,941
Amortized Construction (30 Years)³	1,404	1,465	828	510	1,446	1,483	165

Source: Metro 2021a

Notes: ¹ The Annual MTCO₂e presented are rounded to the nearest 100.

² Construction emissions were estimated for both MSF site options. As the Paramount and Bellflower MSF site options would be similar in size, it was assumed that construction would employ the same equipment and vehicle inventory and follow the same schedule regardless of the site option selected. The data presented apply to construction of either the Paramount or Bellflower site, and these emissions are included in the subtotals for each of the Build Alternatives.

³ Amortized Construction= Total Emissions divided by 30 years.

Notes: GHG = greenhouse gas; MTCO₂e = million metric tons of CO₂e

7.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 construction activities would be similar to Alternatives 1 and 2 with the exception of the underground construction. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications. Construction activities involved in implementation of Alternative 4 are anticipated to last up to six years.

As shown in Table 7.3, construction of Alternative 4 would generate approximately 15,307 MTCO₂e, or approximately 510 MTCO₂e annually when amortized over a 30-year operational lifetime in accordance with SCAQMD methodology. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, Alternative 4 would not result in an adverse effect related to the generation of GHG emissions during construction.

7.3.6 Design Options

7.3.6.1 Design Option 1

Design Option 1 construction activities would be similar to Alternative 1. Construction activities involved in implementation of Design Option 1 are anticipated to last up to six years. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications. Construction of the underground segments for Design Option 1 would require the same construction methods and include similar sources of GHG emissions as described for Alternative 1. As shown in Table 7.3, construction of Design Option 1 would generate approximately 43,373 MTCO₂e, or approximately 1,446 MTCO₂e annually when amortized over a 30-year operational lifetime. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, Design Option 1 would not result in an adverse effect related to the generation of GHG emissions during construction.

7.3.6.2 Design Option 2

Design Option 2 construction activities would be similar to Alternative 1. Construction activities involved in implementation of Design Option 2 are anticipated to last up to six years. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications. Construction of the underground segments for Design Option 2 would require the same construction methods and include similar sources of GHG emissions as described for Alternative 1. As shown in Table 7.3, construction of Design Option 2 would generate approximately 44,461 MTCO₂e, or approximately 1,483 MTCO₂e annually when amortized over a 30-year operational lifetime. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, Design Option 2 would not result in an adverse effect related to the generation of GHG emissions during construction.

7.3.7 Maintenance and Storage Facility

As the Paramount and Bellflower MSF site options would be similar in size, it was assumed that construction would employ the same equipment and vehicle inventory and follow the same schedule (approximately 36 months) regardless of the site option selected. The data presented apply to construction of either the Paramount or Bellflower site. As shown in Table

7.3, construction of the MSF site options would generate approximately 4,941 MTCO₂e. Total construction emissions have been amortized over 30 years and included in the operational analysis for each of the Build Alternatives. Independently, the generation of emissions is not considered significant as the emissions are related to the construction of a mass transit system, which has been identified by state and regional agencies as an efficient method of reducing statewide emissions. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, the Paramount and Bellflower MSF site options would not result in an adverse effect related to the generation of GHG emissions during construction.

7.4 California Environmental Quality Act Determination

To satisfy CEQA requirements, greenhouse gas impacts would also be analyzed in accordance with Appendix G of the *CEQA Guidelines*.

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

7.4.1.1 No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no significant impact would occur.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Construction activities involved in implementation of Alternative 1 are anticipated to last up to six years. Construction activities for Alternative 1 would generate GHG emissions through off-road heavy-duty equipment exhaust and on-road vehicle exhaust associated with construction workers, material deliveries, and hauling of cut and fill. Compliance with Metro's *Green Construction Policy*, CARB In-Use Off-Road Diesel Vehicle Regulation, and CARB Truck and Bus Rule would ensure GHG emissions generated by these sources would be minimized. All equipment and vehicles would be maintained in accordance with optimal manufacturer specifications and restricting the idling of equipment and vehicles to less than five minutes.

Table 7.3 presents the source contributions to Alternative 1 construction GHG emissions. Construction of Alternative 1 would generate approximately 42,098 MTCO₂e, or approximately 1,404 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Emissions related to construction activities would be temporary, and ultimately implementation of Alternative 1 will reduce regional GHG emissions through substantial displacement of on-road VMT. Therefore, construction of Alternative 1 would not generate

GHG emissions that may have a significant impact on the environment, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.3 Alternative 2: 7th Street/Metro Center to Pioneer Station

Construction activities for Alternative 2 would be similar to Alternative 1 and generate GHG emissions through off-road heavy-duty equipment exhaust and on-road vehicle exhaust. Construction activities involved in implementation of Alternative 2 are anticipated to last up to six years. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications and vehicle idling would be strictly monitored and ensured not to exceed five minutes at any location.

As shown in Table 7.3, construction of Alternative 2 would generate approximately 43,961 MTCO₂e, or approximately 1,465 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Alternative 2 would not generate GHG emissions that may have a significant impact on the environment, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Construction activities for Alternative 3 would be similar to Alternative 1 with the exception of underground construction. Construction activities involved in implementation of Alternative 3 are anticipated to last up to six years. Construction activities would generate GHG emissions through off-road heavy-duty equipment exhaust and on-road vehicle exhaust and would comply with Metro's *Green Construction Policy* to prevent excessive emissions. In addition, construction equipment would be maintained in accordance with manufacturers' specifications and vehicle idling would be strictly monitored and ensured not to exceed five minutes at any location.

As shown in Table 7.3, construction of Alternative 3 would generate approximately 24,836 MTCO₂e, or approximately 828 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the

SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Emissions related to construction activities would be temporary, and ultimately Alternative 3 will reduce regional GHG emissions through substantial displacement of on-road VMT. Thus, implementation of Alternative 3 would result in a less than significant impact related to the generation of GHG emissions.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Construction activities involved in implementation of Alternative 4 are anticipated to last up to six years. Construction activities for Alternative 4 would be similar to Alternative 1 with the exception of underground construction. Construction activities would generate GHG emissions through off-road heavy-duty equipment exhaust and on-road vehicle exhaust. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications and vehicle idling would be strictly monitored and ensured not to exceed five minutes at any location.

As shown in Table 7.3, construction of Alternative 4 would generate approximately 15,307 MTCO₂e, or approximately 510 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Alternative 4 would not generate GHG emissions that may have a significant impact on the environment, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.6 Design Options

Design Option 1

Design Option 1 construction activities would be similar to Alternative 1. Construction activities involved in implementation of Design Option 1 are anticipated to last up to six years. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications and vehicle idling would be strictly monitored and ensured not

to exceed five minutes at any location. As shown in Table 7.3, construction of Design Option 1 would generate approximately 43,373 MTCO₂e, or approximately 1,446 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Design Option 1 would not generate GHG emissions that may have a significant impact on the environment, and this impact would be less than significant.

Design Option 2

Design Option 2 construction activities would be similar to Alternative 1. Construction activities involved in implementation of Design Option 2 are anticipated to last up to six years. Construction activities would comply with Metro's *Green Construction Policy* to prevent excessive emissions, and construction equipment would be maintained in accordance with manufacturers' specifications and vehicle idling would be strictly monitored and ensured not to exceed five minutes at any location. As shown in Table 7.3, construction of Design Option 2 would generate approximately 44,461 MTCO₂e, or approximately 1,483 MTCO₂e annually when amortized over a 30-year operational lifetime. Due to the cumulative nature of GHG emissions and their influence on climate, the SCAQMD advises that GHG emissions generated by temporary use of on- and off-road equipment and vehicles during construction activities be assessed in combination with long-term operational emissions to disclose a more holistic representation of the environmental impacts. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Design Option 2 would not generate GHG emissions that may have a significant impact on the environment, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.1.7 Maintenance and Storage Facility

As the Paramount and Bellflower MSF site options would be similar in size, it was assumed that construction would employ the same equipment and vehicle inventory and follow the same schedule regardless of the site option selected. As shown in Table 7.3, construction of the MSF site options would generate approximately 4,941 MTCO₂e in total. Total construction emissions have been amortized over 30 years (approximately 165 MTCO₂e annual average) and included in the operational analysis. Independently, the generation of emissions is not considered significant as the emissions are related to the construction of a mass transit system, which has been identified by state and regional agencies as an efficient method of reducing statewide emissions. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of either MSF site options would not generate GHG

emissions that may have a significant impact on the environment, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG?

7.4.2.1 No Project Alternative

The No Project Alternative would not include construction of any project-related facilities or infrastructure. Therefore, no significant impact would occur.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

No impact.

7.4.2.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 construction activities would be conducted in accordance with Metro's *Green Construction Policy* to prevent excessive emissions. The *Green Construction Policy* commits Metro contractors to using less-polluting construction equipment and vehicles and implementing best practices to reduce harmful diesel emissions on all Metro construction projects performed on Metro properties and right-of-way. Best practices include Tier 4 emission standards for off-road diesel-powered construction equipment with greater than 50 horsepower and restricting idling to a maximum of 5 minutes. In addition, Metro must comply with the CALGreen Code, which requires reduction, disposal, and recycling of at least 50 percent of nonhazardous construction and demolition debris. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Alternative 1 would not interfere with GHG reduction plans, policies, or regulations and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2.3 Alternative 2: Slauson/A (Blue) Line to Pioneer Station

Similar to the other Build Alternatives, Alternative 2 construction activities would be conducted in accordance with Metro's *Green Construction Policy*, CALGreen Code, and other applicable policies and regulations. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions.

Therefore, construction of Alternative 2 would not interfere with GHG reduction plans, policies, or regulations and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Similar to the other Build Alternatives, Alternative 3 construction activities would be conducted in accordance with Metro's *Green Construction Policy*, CALGreen Code, and other applicable policies and regulations. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Alternative 3 would not interfere with GHG reduction plans, policies, or regulations and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to the other Build Alternatives, Alternative 4 construction activities would be conducted in accordance with Metro's *Green Construction Policy*, CALGreen Code, and other applicable policies and regulations. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Alternative 4 would not interfere with GHG reduction plans, policies, or regulations. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2.6 Design Options

Design Options 1 and 2 construction activities would be conducted in accordance with Metro's *Green Construction Policy*, CALGreen Code, and other applicable policies and regulations. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of Design Options 1 and 2 would not interfere with GHG reduction plans, policies, or regulations and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

7.4.2.7 Maintenance and Storage Facility

Paramount and Bellflower MSF site option construction activities would be conducted in accordance with Metro's *Green Construction Policy*, CALGreen Code, and other applicable policies and regulations. Temporary GHG emissions would be generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions. Therefore, construction of either the Paramount or Bellflower MSF site option would not interfere with GHG reduction plans, policies, or regulations and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impacts Remaining After Mitigation

Less than significant impact.

8 PROJECT MEASURES AND MITIGATION MEASURES

8.1 Project Measures

No Project Measures are required.

8.2 Mitigation Measures

8.2.1 Operation

No Mitigation Measures are required.

8.2.2 Construction

No Mitigation Measures are required.

9 REFERENCES

- American Public Transportation Association (APTA). 2009. *Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit*.
- California Air Pollution Control Officers Association (CAPCOA). 2016. *California Emissions Estimator Model (Version 2016.3.2)*.
- California Air Resources Board (CARB). 2008. *Climate Change Scoping Plan*.
- California Air Resources Board (CARB). 2014. *First Update to the Climate Change Scoping Plan: Building on the Framework. Pursuant to AB 32, the California Global Warming Solutions*.
- California Air Resources Board (CARB). 2016. *Determination of Total Methane Emissions from the Aliso Canyon Natural Gas Leak Incident*.
- California Air Resources Board (CARB). 2016. *Mobile Source Strategy*.
- California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*.
- California Air Resources Board (CARB). 2018. *California Greenhouse Gas Emission Inventory*.
- California Air Resources Board (CARB). 2019. *California Greenhouse Gas Emission Inventory - 2019 Edition*.
- California Air Resources Board (CARB). 2019. *2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*.
- City of Artesia. 2010. *City of Artesia General Plan 2030*.
- City of Bell. 2010. *Climate Action Plan*.
- City of Bellflower. 2012. *Climate Action Plan*.
- City of Cudahy. 2010. *General Plan – Air Quality Element*.
- City of Los Angeles. 2007. *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*.
- City of Los Angeles. 2015. *Sustainable City pLAn*.
- City of Los Angeles. 2017. *Los Angeles Green Building Code*.
- City of South Gate. 2009. *South Gate General Plan 2035 – Green City Element*.
- City of Vernon. 2011. *Sustainability Action Plan*
- County of Los Angeles. 2015. *Unincorporated Los Angeles County Community Climate Action Plan 2020*.
- Intergovernmental Panel on Climate Change (IPCC). 2013. *Climate Change 2013: The Physical Science Basis, Fifth Assessment Report*.
- Intergovernmental Panel on Climate Change (IPCC). 2014. *Global Warming Potential Values*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2007. *Energy and Sustainability Policy*.

- Los Angeles County Metropolitan Transportation Authority (Metro). 2011a. *Green Construction Policy*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2011b. *Energy Conservation and Management Plan*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2012. *Metro Countywide Sustainability Planning Policy and Implementation Plan*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2015. *Resiliency Indicator Framework Report*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2019a. *Climate Action and Adaptation Plan*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2019b. *2018 Energy and Resource Report*.
- Los Angeles County Metropolitan Transportation Authority (Metro). 2021a. *West Santa Ana Branch Transit Corridor Project Construction Methods Report*.
- South Coast Air Quality Management District (SCAQMD). 2008. *Interim CEQA Greenhouse Gas (GHG) Significance Threshold for Stationary Sources, Rules and Plans*.
- Southern California Association of Governments (SCAG). 2015. *Draft Program Environmental Impact Report for the 2016-2040 RTP/SCS*.
- Southern California Association of Governments (SCAG). 2016. *2016-2040 RTP/SCS*.
- State of California. 2002. Assembly Bill - 1493, Clean Car Standards.
- State of California. 2005. *Executive Order S-03-05*.
- State of California. 2006. Assembly Bill 32 - California Global Warming Solutions Act of 2006.
- State of California. 2008. Senate Bill 375 - Sustainable Communities and Climate Protection Act of 2008.
- State of California. 2016. Assembly Bill 32 – California Global Warming Solutions Act of 2006.
- Transportation Electrification Partnership (TEP). 2019. *2028 Zero Emissions Roadmap. Version 2.0*

APPENDIX A: GREENHOUSE GAS EMISSIONS CALCULATION WORKSHEETS

Greenhouse Gas Emissions Calculation Worksheets

- Operational Greenhouse Gas (GHG) Emissions
 - Annual GHG Emissions Summary Table
 - Regional On-Road Vehicle Miles Traveled (VMT) Summary Table
 - Regional On-Road VMT Annual GHG Emissions Calculations
 - Mobile Source Emissions Factors from EMFAC2017
 - Light Rail Corridor Operations Annual GHG Emissions
 - Maintenance and Storage Facility (MSF) Annual CalEEMod Output Files (Paramount and Bellflower Site Options)
- Construction GHG Emissions
 - Construction GHG Emissions Summary Table
 - Construction GHG Emissions Calculation Worksheet
 - Project Components Construction Annual CalEEMod Output Files
 - MSF Annual CalEEMod Output File

Annual GHG Emissions Summary Table

Annual Operational GHG Emissions Summary Table

Emissions Source	Annual MTCO ₂ e							
	Existing 2017	No Build Alternative 2042	Alternative 1 2042	Alternative 2 2042	Alternative 3 2042	Alternative 4 2042	Design Option 1 2042	Design Option 2 2042
Regional On-Road VMT	66,199,911	57,179,713	57,133,429	57,140,967	57,168,737	57,168,568	57,129,472	57,132,225
LRT Propulsion/Station/Parking Energy	–	–	8,179	8,213	6,633	3,885	8,179	8,179
MSF Operations ¹	–	–	1,834	1,834	1,834	1,834	1,834	1,834
Amortized Construction ²	–	–	1,404	1,466	828	511	1,446	1,483
Total Emissions	66,199,911	57,179,713	57,144,846	57,152,480	57,178,032	57,174,798	57,140,887	57,143,678
Change from No Build Alternative	–	–	(34,824)	(27,234)	(1,681)	(4,916)	(38,783)	(35,992)
Percent Change from No Build Alternative	–	–	(0.061%)	(0.048%)	(0.003%)	(0.009%)	(0.068%)	(0.063%)

Source: TAHA, 2020

¹Operational MSF emissions are presented for the Paramount option, as it comprises more building area than the Bellflower option and therefore marginally higher operational GHG emissions.

²Per SCAQMD guidance (2008), construction emissions are averaged over a 30-year operational lifetime and assessed in combination with emissions associated with Project operations.

Notes: GHG = greenhouse gas; LRT = light rail transit; MSF = maintenance and storage facility; MTCO₂e = metric tons of CO₂e; VMT = vehicle miles traveled; () = decrease/reduction

Annual Regional On-Road VMT Summary Tables

Annual Regional On-Road Vehicle Miles Traveled Summary

Speed Range	2017-Existing (Miles/Year)	2017 Alternative 1 (Miles/Year)	2017 Alternative 2 (Miles/Year)	2017 Alternative 3 (Miles/Year)	2017 Alternative 4 (Miles/Year)	2017 Design Option 1 (Miles/Year)	2017 Design Option 2 (Miles/Year)
≤5	1,014,976,971	1,027,260,264	1,007,994,967	1,014,835,127	1,007,182,591	1,011,417,532	1,024,397,989
5-10	1,822,770,225	1,782,085,402	1,848,790,463	1,820,184,598	1,818,964,280	1,794,612,691	1,818,778,848
10-15	4,774,553,895	4,701,780,877	4,783,286,686	4,759,141,940	4,751,781,845	4,737,100,173	4,747,140,616
15-20	10,203,676,784	10,243,444,853	10,516,887,322	10,240,056,603	10,198,320,363	10,198,383,034	10,197,731,028
20-25	21,579,898,288	21,566,943,639	21,364,961,992	21,521,897,492	21,580,056,839	21,532,429,799	21,552,807,753
25-30	23,327,704,677	23,351,765,600	23,338,763,716	23,447,915,454	23,452,460,907	23,422,720,049	23,383,553,302
30-35	20,551,721,638	20,504,732,238	20,470,935,234	20,428,961,937	20,412,196,532	20,495,716,101	20,485,490,594
35-40	12,828,977,557	12,889,585,853	12,792,897,899	12,831,754,260	12,895,664,089	12,829,888,507	12,848,821,466
40-45	7,916,251,403	7,953,399,718	7,805,966,654	7,903,510,602	7,893,728,068	7,883,169,440	7,910,027,138
45-50	5,877,353,168	5,820,654,247	5,933,774,708	5,882,148,874	5,879,156,346	5,885,748,201	5,882,234,001
50-55	5,853,346,171	5,861,641,404	5,902,604,950	5,880,795,071	5,830,211,411	5,907,115,497	5,831,205,948
55-60	5,604,841,132	5,589,239,678	5,575,707,156	5,596,970,135	5,609,514,011	5,579,558,569	5,605,207,334
60-65	7,629,726,334	7,641,523,244	7,604,133,109	7,652,019,753	7,654,143,102	7,608,956,501	7,615,521,215
65-70	12,384,787,257	12,342,105,444	12,321,566,427	12,350,445,885	12,365,627,121	12,388,067,378	12,379,514,962
70-75	19,310,451,855	19,329,946,622	19,338,261,973	19,325,471,452	19,319,449,248	19,324,206,465	19,322,854,435
75-80	65,262,296	65,184,784	65,144,741	65,260,254	65,233,609	65,220,899	65,210,526
	160,746,299,651	160,671,293,866	160,671,677,995	160,721,369,436	160,733,690,365	160,664,310,838	160,670,497,154

Change from Existing	-75,005,785	-74,621,656	-24,930,215	-12,609,286	-81,988,813	-75,802,497
% Change from Existing	-0.047%	-0.046%	-0.016%	-0.008%	-0.051%	-0.047%

Annual Regional On-Road Vehicle Miles Traveled Summary

Speed Range	2017-Existing (Miles/Year)	2042 No Build (Miles/Year)	2042 Alternative 1 (Miles/Year)	2042 Alternative 2 (Miles/Year)	2042 Alternative 3 (Miles/Year)	2042 Alternative 4 (Miles/Year)	2042 Design Option 1 (Miles/Year)	2042 Design Option 2 (Miles/Year)
≤5	1,014,976,971	2,831,971,180	2,801,891,055	2,833,879,271	2,817,672,867	2,794,564,536	2,776,343,027	2,826,219,931
5-10	1,822,770,225	7,700,912,319	7,671,175,882	7,681,528,247	7,719,254,915	7,713,675,889	7,668,689,826	7,681,914,426
10-15	4,774,553,895	13,036,805,820	13,063,777,656	13,089,049,979	13,032,910,444	13,016,097,442	13,144,507,804	13,017,517,826
15-20	10,203,676,784	20,126,818,240	20,120,167,728	20,026,151,855	20,104,034,362	20,179,850,410	20,029,771,524	20,073,038,085
20-25	21,579,898,288	29,775,980,408	29,745,333,111	29,748,174,849	29,855,715,530	30,016,622,672	30,124,178,096	29,832,335,066
25-30	23,327,704,677	30,470,947,140	30,541,177,375	30,400,362,839	30,449,671,200	30,059,831,205	29,886,631,903	30,280,686,426
30-35	20,551,721,638	23,956,594,811	23,829,502,332	23,955,424,728	23,867,831,485	24,014,947,280	23,961,302,617	24,062,289,121
35-40	12,828,977,557	15,655,198,680	15,621,431,157	15,740,237,029	15,723,282,116	15,996,672,661	15,952,480,396	15,677,371,238
40-45	7,916,251,403	6,941,484,449	6,986,095,919	6,898,749,414	6,917,912,309	6,860,134,901	6,741,176,899	6,948,672,395
45-50	5,877,353,168	5,860,462,385	5,942,752,511	5,902,390,131	5,918,038,172	5,693,894,771	6,102,346,362	5,859,876,939
50-55	5,853,346,171	5,256,729,480	5,171,443,067	5,245,073,394	5,166,286,183	5,225,109,487	5,094,694,928	5,237,120,519
55-60	5,604,841,132	7,230,024,300	7,201,672,865	7,194,422,852	7,236,420,465	7,306,324,023	7,175,421,342	7,218,605,063
60-65	7,629,726,334	9,967,822,387	9,997,396,239	9,964,180,444	9,914,610,439	9,839,743,473	10,083,717,024	9,964,532,278
65-70	12,384,787,257	16,993,401,286	17,009,073,278	16,994,406,521	17,069,342,689	17,122,651,215	16,776,271,583	16,961,486,282
70-75	19,310,451,855	14,543,238,783	14,509,744,373	14,543,443,869	14,510,036,909	14,483,818,630	14,675,028,782	14,568,491,486
75-80	65,262,296	48,087,295	47,993,913	48,045,741	48,046,985	47,963,618	52,000,247	48,076,921
Totals	160,746,299,651	210,396,478,961	210,260,628,461	210,265,521,161	210,351,067,071	210,371,902,214	210,244,562,361	210,258,234,001
Change from Existing		49,650,179,310	49,514,328,810	49,519,221,510	49,604,767,420	49,625,602,563	49,498,262,710	49,511,934,350
% Change from Existing		30.887%	30.803%	30.806%	30.859%	30.872%	30.793%	30.801%
Change from No Build			-135,850,500	-130,957,800	-45,411,890	-24,576,747	-151,916,600	-138,244,960
% Change from No Build			-0.065%	-0.062%	-0.022%	-0.012%	-0.072%	-0.066%

**Annual Regional On-Road VMT
GHG Emissions Calculations**

Annual GHG Emissions - Regional On-Road Vehicle Miles Traveled

Year	Scenario	Speed	Daily VMT	CO2 (MTCO2e/year)	CH4 (MTCO2e/year)	GHG (MTCO2e/year)
2017	Existing	5	2,925,006	937,980.0	2,194.4	940,174.4
2017	Existing	10	5,252,940	1,379,622.8	2,899.7	1,382,522.4
2017	Existing	15	13,759,521	2,942,537.8	5,499.5	2,948,037.3
2017	Existing	20	29,405,409	5,248,821.3	8,917.9	5,257,739.3
2017	Existing	25	62,189,909	9,547,329.8	15,195.4	9,562,525.2
2017	Existing	30	67,226,815	9,183,233.5	13,729.1	9,196,962.6
2017	Existing	35	59,226,864	7,490,754.8	10,417.9	7,501,172.8
2017	Existing	40	36,971,117	4,499,008.0	5,768.2	4,504,776.2
2017	Existing	45	22,813,405	2,762,254.2	3,250.6	2,765,504.7
2017	Existing	50	16,937,617	2,094,755.0	2,270.8	2,097,025.8
2017	Existing	55	16,868,433	2,160,720.6	2,195.4	2,162,916.0
2017	Existing	60	16,152,280	2,149,369.4	2,120.5	2,151,489.9
2017	Existing	65	21,987,684	3,024,347.1	3,020.1	3,027,367.3
2017	Existing	70	35,691,030	4,947,896.8	5,041.1	4,952,937.9
2017	Existing	75	55,649,717	7,714,797.3	7,861.7	7,722,659.0
2017	Existing	80	188,076	26,073.2	26.6	26,099.8
	Existing Total		463,245,820	66,109,501.6	90,409.0	66,199,911
2042	No Build	5	8,161,300	1,638,938.7	2,818.9	1,641,758
2042	No Build	10	22,192,831	3,638,268.5	5,932.3	3,644,201
2042	No Build	15	37,570,046	4,984,626.7	7,901.8	4,992,528
2042	No Build	20	58,002,358	6,434,586.9	10,037.4	6,444,624
2042	No Build	25	85,809,742	8,180,695.1	12,682.7	8,193,378
2042	No Build	30	87,812,528	7,426,459.9	11,377.3	7,437,837
2042	No Build	35	69,039,178	5,393,444.5	8,003.1	5,401,448
2042	No Build	40	45,115,846	3,382,464.0	4,762.6	3,387,227
2042	No Build	45	20,004,278	1,489,949.7	1,953.7	1,491,903
2042	No Build	50	16,888,941	1,286,156.9	1,548.9	1,287,706
2042	No Build	55	15,149,076	1,197,819.3	1,324.1	1,199,143
2042	No Build	60	20,835,805	1,717,912.7	1,771.6	1,719,684
2042	No Build	65	28,725,713	2,463,180.3	2,425.9	2,465,606
2042	No Build	70	48,972,338	4,231,612.6	4,085.8	4,235,698
2042	No Build	75	41,911,351	3,621,485.2	3,500.0	3,624,985
2042	No Build	80	138,580	11,974.5	11.6	11,986
	No Build Total		606,329,911	57,099,575.5	80,137.8	57,179,713
2042	Alternative 1	5	8,074,614	1,621,530.5	2,788.9	1,624,319
2042	Alternative 1	10	22,107,135	3,624,219.7	5,909.4	3,630,129
2042	Alternative 1	15	37,647,774	4,994,939.4	7,918.2	5,002,858
2042	Alternative 1	20	57,983,192	6,432,460.7	10,034.1	6,442,495
2042	Alternative 1	25	85,721,421	8,172,275.0	12,669.6	8,184,945
2042	Alternative 1	30	88,014,920	7,443,576.6	11,403.5	7,454,980
2042	Alternative 1	35	68,672,917	5,364,831.7	7,960.7	5,372,792
2042	Alternative 1	40	45,018,534	3,375,168.2	4,752.4	3,379,921
2042	Alternative 1	45	20,132,841	1,499,525.3	1,966.3	1,501,492
2042	Alternative 1	50	17,126,088	1,304,216.5	1,570.6	1,305,787
2042	Alternative 1	55	14,903,294	1,178,385.6	1,302.6	1,179,688
2042	Alternative 1	60	20,754,100	1,711,176.2	1,764.6	1,712,941
2042	Alternative 1	65	28,810,940	2,470,488.4	2,433.1	2,472,922
2042	Alternative 1	70	49,017,502	4,235,515.1	4,089.6	4,239,605
2042	Alternative 1	75	41,814,825	3,613,144.6	3,491.9	3,616,637
2042	Alternative 1	80	138,311	11,951.2	11.6	11,963
	AltE-Forecourt Total	Alt 1	605,938,411	57,053,404.7	80,067.1	57,133,472
2042	Design Option 1	5	8,000,989	1,606,745.2	2,763.5	1,609,509
2042	Design Option 1	10	22,099,971	3,623,045.1	5,907.5	3,628,953
2042	Design Option 1	15	37,880,426	5,025,806.5	7,967.1	5,033,774
2042	Design Option 1	20	57,722,685	6,403,560.8	9,989.0	6,413,550
2042	Design Option 1	25	86,813,193	8,276,359.4	12,831.0	8,289,190

Annual GHG Emissions - Regional On-Road Vehicle Miles Traveled

Year	Scenario	Speed	Daily VMT	CO2 (MTCO2e/year)	CH4 (MTCO2e/year)	GHG (MTCO2e/year)
2042	Design Option 1	30	86,128,622	7,284,049.0	11,159.1	7,295,208
2042	Design Option 1	35	69,052,745	5,394,504.4	8,004.7	5,402,509
2042	Design Option 1	40	45,972,566	3,446,694.7	4,853.1	3,451,548
2042	Design Option 1	45	19,427,023	1,446,954.8	1,897.3	1,448,852
2042	Design Option 1	50	17,586,013	1,339,241.5	1,612.8	1,340,854
2042	Design Option 1	55	14,682,118	1,160,897.5	1,283.3	1,162,181
2042	Design Option 1	60	20,678,448	1,704,938.6	1,758.2	1,706,697
2042	Design Option 1	65	29,059,703	2,491,819.4	2,454.1	2,494,274
2042	Design Option 1	70	48,346,604	4,177,544.0	4,033.6	4,181,578
2042	Design Option 1	75	42,291,149	3,654,302.9	3,531.7	3,657,835
2042	Design Option 1	80	149,857	12,948.8	12.5	12,961
	Design Option 1 Total	DO1	605,892,111	57,049,413.0	80,058.6	57,129,472
2042	Alternative 2	5	8,166,799	1,640,043.0	2,820.8	1,642,864
2042	Alternative 2	10	22,136,969	3,629,110.6	5,917.4	3,635,028
2042	Alternative 2	15	37,720,605	5,004,602.2	7,933.5	5,012,536
2042	Alternative 2	20	57,712,253	6,402,403.6	9,987.2	6,412,391
2042	Alternative 2	25	85,729,611	8,173,055.8	12,670.8	8,185,727
2042	Alternative 2	30	87,609,115	7,409,256.9	11,350.9	7,420,608
2042	Alternative 2	35	69,035,806	5,393,181.1	8,002.8	5,401,184
2042	Alternative 2	40	45,360,914	3,400,837.4	4,788.5	3,405,626
2042	Alternative 2	45	19,881,122	1,480,776.9	1,941.7	1,482,719
2042	Alternative 2	50	17,009,770	1,295,358.5	1,560.0	1,296,918
2042	Alternative 2	55	15,115,485	1,195,163.3	1,321.2	1,196,485
2042	Alternative 2	60	20,733,207	1,709,453.5	1,762.8	1,711,216
2042	Alternative 2	65	28,715,217	2,462,280.4	2,425.0	2,464,705
2042	Alternative 2	70	48,975,235	4,231,862.9	4,086.1	4,235,949
2042	Alternative 2	75	41,911,942	3,621,536.3	3,500.0	3,625,036
2042	Alternative 2	80	138,460	11,964.1	11.6	11,976
	Alternative 2 Total	Alt 2	605,952,511	57,060,886.4	80,080.3	57,140,967
2042	Design Option 2	5	8,144,726	1,635,610.3	2,813.1	1,638,423
2042	Design Option 2	10	22,138,082	3,629,293.1	5,917.7	3,635,211
2042	Design Option 2	15	37,514,461	4,977,251.9	7,890.1	4,985,142
2042	Design Option 2	20	57,847,372	6,417,393.3	10,010.6	6,427,404
2042	Design Option 2	25	85,972,147	8,196,178.1	12,706.7	8,208,885
2042	Design Option 2	30	87,264,226	7,380,089.0	11,306.2	7,391,395
2042	Design Option 2	35	69,343,773	5,417,239.9	8,038.5	5,425,278
2042	Design Option 2	40	45,179,744	3,387,254.6	4,769.4	3,392,024
2042	Design Option 2	45	20,024,992	1,491,492.5	1,955.7	1,493,448
2042	Design Option 2	50	16,887,253	1,286,028.4	1,548.7	1,287,577
2042	Design Option 2	55	15,092,566	1,193,351.2	1,319.2	1,194,670
2042	Design Option 2	60	20,802,896	1,715,199.4	1,768.8	1,716,968
2042	Design Option 2	65	28,716,231	2,462,367.3	2,425.1	2,464,792
2042	Design Option 2	70	48,880,364	4,223,665.2	4,078.2	4,227,743
2042	Design Option 2	75	41,984,125	3,627,773.5	3,506.1	3,631,280
2042	Design Option 2	80	138,550	11,971.9	11.6	11,983
	Design Option 2 Total	DO2	605,931,510	57,052,159.6	80,065.6	57,132,225
2042	Alternative 4	5	8,053,500	1,617,290.5	2,781.6	1,620,072
2042	Alternative 4	10	22,229,614	3,644,298.6	5,942.1	3,650,241
2042	Alternative 4	15	37,510,367	4,976,708.8	7,889.3	4,984,598
2042	Alternative 4	20	58,155,189	6,451,541.4	10,063.9	6,461,605
2042	Alternative 4	25	86,503,235	8,246,809.5	12,785.2	8,259,595
2042	Alternative 4	30	86,627,756	7,326,261.6	11,223.8	7,337,485
2042	Alternative 4	35	69,207,341	5,406,581.7	8,022.6	5,414,604
2042	Alternative 4	40	46,099,921	3,456,242.9	4,866.5	3,461,109
2042	Alternative 4	45	19,769,841	1,472,488.5	1,930.8	1,474,419
2042	Alternative 4	50	16,408,919	1,249,601.4	1,504.9	1,251,106

Annual GHG Emissions - Regional On-Road Vehicle Miles Traveled

Year	Scenario	Speed	Daily VMT	CO2 (MTCO2e/year)	CH4 (MTCO2e/year)	GHG (MTCO2e/year)
2042	Alternative 4	55	15,057,952	1,190,614.3	1,316.1	1,191,930
2042	Alternative 4	60	21,055,689	1,736,042.1	1,790.3	1,737,832
2042	Alternative 4	65	28,356,609	2,431,530.4	2,394.8	2,433,925
2042	Alternative 4	70	49,344,816	4,263,797.7	4,116.9	4,267,915
2042	Alternative 4	75	41,740,111	3,606,688.7	3,485.7	3,610,174
2042	Alternative 4	80	138,224	11,943.7	11.5	11,955
	Alternative 4 Total	Alt 4	606,259,084	57,088,441.7	80,126.0	57,168,568
2042	Alternative 3	5	8,120,095	1,630,663.9	2,804.6	1,633,469
2042	Alternative 3	10	22,245,691	3,646,934.4	5,946.4	3,652,881
2042	Alternative 3	15	37,558,820	4,983,137.3	7,899.5	4,991,037
2042	Alternative 3	20	57,936,698	6,427,302.8	10,026.1	6,437,329
2042	Alternative 3	25	86,039,526	8,202,601.6	12,716.6	8,215,318
2042	Alternative 3	30	87,751,214	7,421,274.4	11,369.3	7,432,644
2042	Alternative 3	35	68,783,376	5,373,460.9	7,973.5	5,381,434
2042	Alternative 3	40	45,312,052	3,397,174.1	4,783.3	3,401,957
2042	Alternative 3	45	19,936,347	1,484,890.1	1,947.1	1,486,837
2042	Alternative 3	50	17,054,865	1,298,792.6	1,564.1	1,300,357
2042	Alternative 3	55	14,888,433	1,177,210.6	1,301.3	1,178,512
2042	Alternative 3	60	20,854,238	1,719,432.5	1,773.1	1,721,206
2042	Alternative 3	65	28,572,364	2,450,031.0	2,413.0	2,452,444
2042	Alternative 3	70	49,191,189	4,250,523.1	4,104.1	4,254,627
2042	Alternative 3	75	41,815,668	3,613,217.5	3,492.0	3,616,709
2042	Alternative 3	80	138,464	11,964.4	11.6	11,976
	Alternative 3 Total	Alt 3	606,199,041	57,088,611.2	80,125.7	57,168,737

Mobile Source GHG Emissions Factors
From EMFAC2017

Regional On-Road Vehicle Miles Traveled EMFAC2017 Emission Rates

Project Area EMFAC2017 Emission Factors (grams/mile, 7% truck fleet mix)			
Year	Speed	CO2	CH4
2017	5	924.137302	0.077216
2017	10	756.880928	0.056814
2017	15	616.294628	0.041137
2017	20	514.403868	0.031214
2017	25	442.416853	0.025148
2017	30	393.661322	0.021019
2017	35	364.482351	0.018104
2017	40	350.690374	0.016058
2017	45	348.93392	0.014665
2017	50	356.410568	0.013799
2017	55	369.142059	0.013395
2017	60	383.483671	0.013512
2017	65	396.389194	0.014137
2017	70	399.513275	0.014537
2017	75	399.513275	0.01454
2017	80	399.513275	0.01454
2042	5	578.726032	0.035549
2042	10	472.445484	0.027512
2042	15	382.349537	0.021647
2042	20	319.7015	0.017811
2042	25	274.740868	0.015212
2042	30	243.722157	0.013335
2042	35	225.13357	0.011931
2042	40	216.05968	0.010865
2042	45	214.643814	0.010052
2042	50	219.462936	0.009439
2042	55	227.863532	0.008996
2042	60	237.607675	0.008751
2042	65	247.11269	0.008692
2042	70	249.014544	0.008587
2042	75	249.014544	0.008595
2042	80	249.014544	0.008595

**Light Rail Corridor Operations
Annual GHG Emissions**

Annual Rail Corridor Greenhouse Gas Emissions

Alternative/Option	Annual Light Rail Miles	2017 Metro Energy Consumption Factor (lbCO ₂ e/LRTmile)	Annual Rail Corridor Energy Consumption (MTCO ₂ e/year)
Alternative 1	2,109,180	6.75	8,178.8
Alternative 2	2,120,399	6.75	8,213.1
Alternative 3	1,604,323	6.75	6,633.0
Alternative 4	706,800	6.75	3,885.0
Design Option 1	2,109,180	6.75	8,178.8
Design Option 2	2,109,180	6.75	8,178.8

Maintenance and Storage Facility (MSF)
Annual CalEEMod Output Files
(Paramount & Bellflower)

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.07	1000sqft	0.19	8,070.00	0
General Light Industry	24.47	1000sqft	0.56	24,470.00	0
General Light Industry	6.74	1000sqft	0.15	6,740.00	0
Industrial Park	95.11	1000sqft	2.18	95,110.00	0
Unrefrigerated Warehouse-Rail	7.56	1000sqft	0.17	7,560.00	0
Other Asphalt Surfaces	3.00	Acre	3.00	130,680.00	0
Other Non-Asphalt Surfaces	13.20	Acre	13.20	574,992.00	0
Parking Lot	307.00	Space	2.76	122,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use -

Construction Phase - Preliminary Schedule

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Trips and VMT - 150 worker trips, 20 vendor deliveries, 30 haul loads daily.

Grading -

Vehicle Trips - 250 daily employees/visitors

Area Coating - SCAQMD Rule 1113

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Metro GCP Compliance

Fleet Mix -

Off-road Equipment - Project Inventory

Architectural Coating - SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
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
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	60.00
tblConstructionPhase	NumDays	370.00	450.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	360.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Paving Parking & Access Roads
tblOffRoadEquipment	PhaseName		Building Construction & Track Laydown
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	910.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	21,600.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	159.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	408.00	300.00
tblTripsAndVMT	WorkerTripNumber	20.00	200.00

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tblTripsAndVMT	WorkerTripNumber	82.00	100.00
tblVehicleTrips	DV_TP	19.00	5.00
tblVehicleTrips	PB_TP	2.00	3.00
tblVehicleTrips	PR_TP	79.00	92.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.49	2.63
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.73	2.63
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	6.83	2.63
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1
2023	0.6970	6.3520	5.9794	0.0185	2.2021	0.2094	2.4116	0.7973	0.1941	0.9914	0.0000	1,686.220 6	1,686.220 6	0.2671	0.0000	1,692.898 4
2024	0.5619	3.2514	5.0486	0.0120	0.5557	0.1105	0.6662	0.1485	0.1043	0.2528	0.0000	1,065.646 6	1,065.646 6	0.1413	0.0000	1,069.179 9
2025	0.6743	0.4357	0.8017	1.8700e-003	0.0920	0.0175	0.1095	0.0246	0.0164	0.0409	0.0000	167.9064	167.9064	0.0229	0.0000	168.4789
Maximum	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3688	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591
2023	0.3231	1.9942	6.7643	0.0185	1.2939	8.0600e-003	1.3020	0.4266	7.6600e-003	0.4343	0.0000	1,686.2197	1,686.2197	0.2671	0.0000	1,692.8975
2024	0.3484	1.1252	5.3911	0.0120	0.5557	5.7800e-003	0.5615	0.1485	5.4400e-003	0.1539	0.0000	1,065.6460	1,065.6460	0.1413	0.0000	1,069.1793
2025	0.6444	0.1353	0.8754	1.8700e-003	0.0920	9.3000e-004	0.0930	0.0246	8.8000e-004	0.0255	0.0000	167.9063	167.9063	0.0229	0.0000	168.4789
Maximum	0.6444	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	39.55	65.87	-11.25	0.00	37.13	95.53	43.27	42.91	95.43	55.36	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	1-22-2022	4-21-2022	1.9308	0.8012
10	4-22-2022	7-21-2022	2.7268	0.9848
11	7-22-2022	10-21-2022	2.9902	1.0213
12	10-22-2022	1-21-2023	2.8785	0.9755
13	1-22-2023	4-21-2023	2.4036	0.7600
14	4-22-2023	7-21-2023	2.3155	0.7289
15	7-22-2023	10-21-2023	0.9818	0.3508
16	10-22-2023	1-21-2024	0.9770	0.3556

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17	1-22-2024	4-21-2024	0.9276	0.3456
18	4-22-2024	7-21-2024	0.9218	0.3398
19	7-22-2024	10-21-2024	0.9337	0.3453
20	10-22-2024	1-21-2025	1.1785	0.6198
21	1-22-2025	4-21-2025	0.7145	0.5023
		Highest	2.9902	1.0213

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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Energy	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	1,062.4398	1,062.4398	0.0247	6.4200e-003	1,064.9692
Mobile	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Waste						0.0000	0.0000		0.0000	0.0000	35.2717	0.0000	35.2717	2.0845	0.0000	87.3842
Water						0.0000	0.0000		0.0000	0.0000	10.4142	238.0601	248.4743	1.0753	0.0264	283.2288
Total	0.7096	0.4096	1.0230	4.7800e-003	0.4203	9.3400e-003	0.4296	0.1126	9.1300e-003	0.1218	45.6859	1,697.8140	1,743.4999	3.2014	0.0328	1,833.3195

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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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Energy	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	1,062.4398	1,062.4398	0.0247	6.4200e-003	1,064.9692
Mobile	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Waste						0.0000	0.0000		0.0000	0.0000	35.2717	0.0000	35.2717	2.0845	0.0000	87.3842
Water						0.0000	0.0000		0.0000	0.0000	10.4142	238.0601	248.4743	1.0753	0.0264	283.2288
Total	0.7096	0.4096	1.0230	4.7800e-003	0.4203	9.3400e-003	0.4296	0.1126	9.1300e-003	0.1218	45.6859	1,697.8140	1,743.4999	3.2014	0.0328	1,833.3195

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/7/2022	5/21/2022	6	90	
2	Site Preparation	Site Preparation	5/23/2022	7/15/2023	6	360	Site Preparation & Grading
3	Building Construction & Track Laydown	Building Construction	7/17/2023	12/21/2024	6	450	
4	Paving Parking & Access Roads	Paving	12/23/2024	3/1/2025	6	60	
5	Road Striping & Architectural Coating	Architectural Coating	12/23/2024	3/1/2025	6	60	

Acres of Grading (Site Preparation Phase): 900

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.96

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 212,925; Non-Residential Outdoor: 70,975; Striped Parking Area: 49,708 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rough Terrain Forklifts	2	8.00	100	0.40
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction & Track Laydown	Cranes	1	8.00	231	0.29
Building Construction & Track Laydown	Generator Sets	1	8.00	84	0.74
Building Construction & Track Laydown	Rough Terrain Forklifts	3	8.00	100	0.40
Building Construction & Track Laydown	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction & Track Laydown	Welders	2	8.00	46	0.45
Paving Parking & Access Roads	Forklifts	2	8.00	89	0.20
Paving Parking & Access Roads	Pavers	2	8.00	130	0.42
Paving Parking & Access Roads	Paving Equipment	2	8.00	132	0.36
Paving Parking & Access Roads	Rollers	2	8.00	80	0.38
Road Striping & Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

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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	10	300.00	40.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	300.00	40.00	21,600.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Track Laydown	10	300.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving Parking & Access Roads	8	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Road Striping & Architectural Coating	2	100.00	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

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0984	0.0000	0.0984	0.0149	0.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1620	1.6089	1.2889	2.6700e-003		0.0726	0.0726		0.0679	0.0679	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009
Total	0.1620	1.6089	1.2889	2.6700e-003	0.0984	0.0726	0.1710	0.0149	0.0679	0.0828	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009

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3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

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					0.0384	0.0000	0.0384	5.8100e-003	0.0000	5.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.1366	1.5351	2.6700e-003		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006
Total	0.0315	0.1366	1.5351	2.6700e-003	0.0384	6.3000e-004	0.0390	5.8100e-003	6.3000e-004	6.4400e-003	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006

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3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6335	0.0000	1.6335	0.6871	0.0000	0.6871	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4368	4.7961	2.9073	6.7100e-003		0.2013	0.2013		0.1852	0.1852	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298
Total	0.4368	4.7961	2.9073	6.7100e-003	1.6335	0.2013	1.8348	0.6871	0.1852	0.8723	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

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					0.6371	0.0000	0.6371	0.2680	0.0000	0.2680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0823	0.3566	3.5049	6.7100e-003		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291
Total	0.0823	0.3566	3.5049	6.7100e-003	0.6371	1.6500e-003	0.6387	0.2680	1.6500e-003	0.2696	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4889	0.0000	1.4889	0.6077	0.0000	0.6077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3400	3.6235	2.4324	5.8700e-003		0.1487	0.1487		0.1368	0.1368	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753
Total	0.3400	3.6235	2.4324	5.8700e-003	1.4889	0.1487	1.6376	0.6077	0.1368	0.7444	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753

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3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

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					0.5807	0.0000	0.5807	0.2370	0.0000	0.2370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0720	0.3121	3.0668	5.8700e-003		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746
Total	0.0720	0.3121	3.0668	5.8700e-003	0.5807	1.4400e-003	0.5821	0.2370	1.4400e-003	0.2384	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746

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3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237
Total	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237

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3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

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	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234
Total	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234

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3.4 Building Construction & Track Laydown - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575
Total	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575

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3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

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	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569
Total	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569

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3.4 Building Construction & Track Laydown - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7100e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.7200e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2800e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0349	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2700e-003	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0921					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0941	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

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	0.0921					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0924	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0119	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267
Total	0.6106	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

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	0.5988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267
Total	0.6008	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Unmitigated	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Industrial Park	250.14	250.14	250.14	1,107,686	1,107,686
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	250.14	250.14	250.14	1,107,686	1,107,686

4.3 Trip Type Information

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Industrial Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Non-Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Parking Lot	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Unrefrigerated Warehouse-Rail	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	971.3136	971.3136	0.0229	4.7500e-003	973.3015
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	0.0000	971.3136	971.3136	0.0229	4.7500e-003	973.3015
NaturalGas Mitigated	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	91.1262	91.1262	1.7500e-003	1.6700e-003	91.6677	
NaturalGas Unmitigated	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	91.1262	91.1262	1.7500e-003	1.6700e-003	91.6677	

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

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	121994	6.6000e-004	5.9800e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.5101	6.5101	1.2000e-004	1.2000e-004	6.5488
General Light Industry	146067	7.9000e-004	7.1600e-003	6.0100e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7947	7.7947	1.5000e-004	1.4000e-004	7.8410
General Light Industry	442907	2.3900e-003	0.0217	0.0182	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6352	23.6352	4.5000e-004	4.3000e-004	23.7757
Industrial Park	990095	5.3400e-003	0.0485	0.0408	2.9000e-004		3.6900e-003	3.6900e-003		3.6900e-003	3.6900e-003	0.0000	52.8353	52.8353	1.0100e-003	9.7000e-004	53.1492
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	6577.2	4.0000e-005	3.2000e-004	2.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3510	0.3510	1.0000e-005	1.0000e-005	0.3531
Total		9.2200e-003	0.0837	0.0703	5.0000e-004		6.3500e-003	6.3500e-003		6.3500e-003	6.3500e-003	0.0000	91.1262	91.1262	1.7400e-003	1.6700e-003	91.6677

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

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	121994	6.6000e-004	5.9800e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.5101	6.5101	1.2000e-004	1.2000e-004	6.5488
General Light Industry	146067	7.9000e-004	7.1600e-003	6.0100e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7947	7.7947	1.5000e-004	1.4000e-004	7.8410
General Light Industry	442907	2.3900e-003	0.0217	0.0182	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6352	23.6352	4.5000e-004	4.3000e-004	23.7757
Industrial Park	990095	5.3400e-003	0.0485	0.0408	2.9000e-004		3.6900e-003	3.6900e-003		3.6900e-003	3.6900e-003	0.0000	52.8353	52.8353	1.0100e-003	9.7000e-004	53.1492
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	6577.2	4.0000e-005	3.2000e-004	2.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3510	0.3510	1.0000e-005	1.0000e-005	0.3531
Total		9.2200e-003	0.0837	0.0703	5.0000e-004		6.3500e-003	6.3500e-003		6.3500e-003	6.3500e-003	0.0000	91.1262	91.1262	1.7400e-003	1.6700e-003	91.6677

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	271617	151.2802	3.5700e-003	7.4000e-004	151.5898
General Light Industry	74814	41.6685	9.8000e-004	2.0000e-004	41.7538
General Light Industry	89577	49.8909	1.1800e-003	2.4000e-004	49.9931
Industrial Park	1.23548e+006	688.1142	0.0163	3.3600e-003	689.5225
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	29484	16.4215	3.9000e-004	8.0000e-005	16.4551
Total		971.3136	0.0229	4.7400e-003	973.3015

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	271617	151.2802	3.5700e-003	7.4000e-004	151.5898
General Light Industry	74814	41.6685	9.8000e-004	2.0000e-004	41.7538
General Light Industry	89577	49.8909	1.1800e-003	2.4000e-004	49.9931
Industrial Park	1.23548e+006	688.1142	0.0163	3.3600e-003	689.5225
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	29484	16.4215	3.9000e-004	8.0000e-005	16.4551
Total		971.3136	0.0229	4.7400e-003	973.3015

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Cleaning Supplies

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Unmitigated	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

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	0.0691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5665					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Total	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5665					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Total	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

7.0 Water Detail

7.1 Mitigation Measures Water

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	248.4743	1.0753	0.0264	283.2288
Unmitigated	248.4743	1.0753	0.0264	283.2288

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.0835 / 0	68.7571	0.2975	7.3100e-003	78.3743
Industrial Park	21.9942 / 0	166.4839	0.7205	0.0177	189.7702
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	1.74825 / 0	13.2333	0.0573	1.4100e-003	15.0843
Total		248.4743	1.0753	0.0264	283.2287

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.0835 / 0	68.7571	0.2975	7.3100e-003	78.3743
Industrial Park	21.9942 / 0	166.4839	0.7205	0.0177	189.7702
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	1.74825 / 0	13.2333	0.0573	1.4100e-003	15.0843
Total		248.4743	1.0753	0.0264	283.2287

8.0 Waste Detail**8.1 Mitigation Measures Waste**

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	35.2717	2.0845	0.0000	87.3842
Unmitigated	35.2717	2.0845	0.0000	87.3842

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	48.71	9.8877	0.5844	0.0000	24.4963
Industrial Park	117.94	23.9408	1.4149	0.0000	59.3122
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	7.11	1.4433	0.0853	0.0000	3.5756
Total		35.2717	2.0845	0.0000	87.3842

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	48.71	9.8877	0.5844	0.0000	24.4963
Industrial Park	117.94	23.9408	1.4149	0.0000	59.3122
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	7.11	1.4433	0.0853	0.0000	3.5756
Total		35.2717	2.0845	0.0000	87.3842

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

LACMTA West Santa Ana Branch MSF - Bellflower Option
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	4.60	1000sqft	0.11	4,600.00	0
General Light Industry	12.10	1000sqft	0.28	12,100.00	0
Industrial Park	103.44	1000sqft	2.37	103,440.00	0
Unrefrigerated Warehouse-Rail	11.90	1000sqft	0.27	11,900.00	0
Other Asphalt Surfaces	3.00	Acre	3.00	130,680.00	0
Other Non-Asphalt Surfaces	12.50	Acre	12.50	544,500.00	0
Parking Lot	307.00	Space	2.76	122,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2028
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

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

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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
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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	90.00
tblConstructionPhase	NumDays	10.00	360.00
tblConstructionPhase	NumDays	370.00	450.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	60.00
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

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	910.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	21,600.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	152.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	391.00	300.00
tblTripsAndVMT	WorkerTripNumber	20.00	200.00
tblTripsAndVMT	WorkerTripNumber	78.00	100.00
tblVehicleTrips	DV_TP	19.00	5.00
tblVehicleTrips	PB_TP	2.00	3.00
tblVehicleTrips	PR_TP	79.00	92.00

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tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.49	2.42
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.73	2.42
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	6.83	2.42
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.5464	2,001.5464	0.3166	0.0000	2,009.4601
2023	0.6970	6.3520	5.9794	0.0185	2.2021	0.2094	2.4116	0.7973	0.1941	0.9914	0.0000	1,686.2206	1,686.2206	0.2671	0.0000	1,692.8984
2024	0.5560	3.2514	5.0486	0.0120	0.5557	0.1105	0.6662	0.1485	0.1043	0.2528	0.0000	1,065.6466	1,065.6466	0.1413	0.0000	1,069.1799
2025	0.6358	0.4357	0.8017	1.8700e-003	0.0920	0.0175	0.1095	0.0246	0.0164	0.0409	0.0000	167.9064	167.9064	0.0229	0.0000	168.4789
Maximum	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.5464	2,001.5464	0.3166	0.0000	2,009.4601

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3688	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591
2023	0.3231	1.9942	6.7643	0.0185	1.2939	8.0600e-003	1.3020	0.4266	7.6600e-003	0.4343	0.0000	1,686.2197	1,686.2197	0.2671	0.0000	1,692.8975
2024	0.3425	1.1252	5.3911	0.0120	0.5557	5.7800e-003	0.5615	0.1485	5.4400e-003	0.1539	0.0000	1,065.6460	1,065.6460	0.1413	0.0000	1,069.1793
2025	0.6059	0.1353	0.8754	1.8700e-003	0.0920	9.3000e-004	0.0930	0.0246	8.8000e-004	0.0255	0.0000	167.9063	167.9063	0.0229	0.0000	168.4789
Maximum	0.6059	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	40.19	65.87	-11.25	0.00	37.13	95.53	43.27	42.91	95.43	55.36	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	1-22-2022	4-21-2022	1.9308	0.8012
10	4-22-2022	7-21-2022	2.7268	0.9848
11	7-22-2022	10-21-2022	2.9902	1.0213
12	10-22-2022	1-21-2023	2.8785	0.9755
13	1-22-2023	4-21-2023	2.4036	0.7600
14	4-22-2023	7-21-2023	2.3155	0.7289
15	7-22-2023	10-21-2023	0.9818	0.3508
16	10-22-2023	1-21-2024	0.9770	0.3556

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17	1-22-2024	4-21-2024	0.9276	0.3456
18	4-22-2024	7-21-2024	0.9218	0.3398
19	7-22-2024	10-21-2024	0.9337	0.3453
20	10-22-2024	1-21-2025	1.1595	0.6007
21	1-22-2025	4-21-2025	0.6898	0.4775
		Highest	2.9902	1.0213

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	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	975.5574	975.5574	0.0227	5.7600e-003	977.8428
Mobile	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201
Waste						0.0000	0.0000		0.0000	0.0000	32.5131	0.0000	32.5131	1.9215	0.0000	80.5497
Water						0.0000	0.0000		0.0000	0.0000	9.6871	221.4404	231.1275	1.0002	0.0246	263.4556
Total	0.6657	0.3942	1.0105	4.7000e-003	0.4206	8.1700e-003	0.4288	0.1127	7.9600e-003	0.1207	42.2002	1,594.6062	1,636.8064	2.9613	0.0303	1,719.8803

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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	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	975.5574	975.5574	0.0227	5.7600e-003	977.8428
Mobile	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201
Waste						0.0000	0.0000		0.0000	0.0000	32.5131	0.0000	32.5131	1.9215	0.0000	80.5497
Water						0.0000	0.0000		0.0000	0.0000	9.6871	221.4404	231.1275	1.0002	0.0246	263.4556
Total	0.6657	0.3942	1.0105	4.7000e-003	0.4206	8.1700e-003	0.4288	0.1127	7.9600e-003	0.1207	42.2002	1,594.6062	1,636.8064	2.9613	0.0303	1,719.8803

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/7/2022	5/21/2022	6	90	
2	Site Preparation	Site Preparation	5/23/2022	7/15/2023	6	360	
3	Building Construction & Track Laydown	Building Construction	7/17/2023	12/21/2024	6	450	
4	Paving Parking & Access Roads	Paving	12/23/2024	3/1/2025	6	60	
5	Road Striping & Architectural Coating	Architectural Coating	12/23/2024	3/1/2025	6	60	

Acres of Grading (Site Preparation Phase): 900

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 198,060; Non-Residential Outdoor: 66,020; Striped Parking Area: 47,879 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rough Terrain Forklifts	2	8.00	100	0.40
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction & Track Laydown	Cranes	1	8.00	231	0.29
Building Construction & Track Laydown	Generator Sets	1	8.00	84	0.74
Building Construction & Track Laydown	Rough Terrain Forklifts	3	8.00	100	0.40
Building Construction & Track Laydown	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction & Track Laydown	Welders	2	8.00	46	0.45
Paving Parking & Access Roads	Forklifts	2	8.00	89	0.20
Paving Parking & Access Roads	Pavers	2	8.00	130	0.42
Paving Parking & Access Roads	Paving Equipment	2	8.00	132	0.36
Paving Parking & Access Roads	Rollers	2	8.00	80	0.38
Road Striping & Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

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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	10	300.00	40.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	300.00	40.00	21,600.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Track Laydown	10	300.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving Parking & Access Roads	8	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Road Striping & Architectural Coating	2	100.00	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

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0984	0.0000	0.0984	0.0149	0.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1620	1.6089	1.2889	2.6700e-003		0.0726	0.0726		0.0679	0.0679	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009
Total	0.1620	1.6089	1.2889	2.6700e-003	0.0984	0.0726	0.1710	0.0149	0.0679	0.0828	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009

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3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

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					0.0384	0.0000	0.0384	5.8100e-003	0.0000	5.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.1366	1.5351	2.6700e-003		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006
Total	0.0315	0.1366	1.5351	2.6700e-003	0.0384	6.3000e-004	0.0390	5.8100e-003	6.3000e-004	6.4400e-003	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006

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3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6335	0.0000	1.6335	0.6871	0.0000	0.6871	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4368	4.7961	2.9073	6.7100e-003		0.2013	0.2013		0.1852	0.1852	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298
Total	0.4368	4.7961	2.9073	6.7100e-003	1.6335	0.2013	1.8348	0.6871	0.1852	0.8723	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

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					0.6371	0.0000	0.6371	0.2680	0.0000	0.2680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0823	0.3566	3.5049	6.7100e-003		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291
Total	0.0823	0.3566	3.5049	6.7100e-003	0.6371	1.6500e-003	0.6387	0.2680	1.6500e-003	0.2696	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4889	0.0000	1.4889	0.6077	0.0000	0.6077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3400	3.6235	2.4324	5.8700e-003		0.1487	0.1487		0.1368	0.1368	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753
Total	0.3400	3.6235	2.4324	5.8700e-003	1.4889	0.1487	1.6376	0.6077	0.1368	0.7444	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753

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3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

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					0.5807	0.0000	0.5807	0.2370	0.0000	0.2370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0720	0.3121	3.0668	5.8700e-003		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746
Total	0.0720	0.3121	3.0668	5.8700e-003	0.5807	1.4400e-003	0.5821	0.2370	1.4400e-003	0.2384	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746

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3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237
Total	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237

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3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

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	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234
Total	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234

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3.4 Building Construction & Track Laydown - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575
Total	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575

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3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

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	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569
Total	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569

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3.4 Building Construction & Track Laydown - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7100e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.7200e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2800e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0349	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2700e-003	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0881	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

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	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0865	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5603					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0119	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267
Total	0.5721	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

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	0.5603					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267
Total	0.5623	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201
Unmitigated	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Industrial Park	250.32	250.32	250.32	1,108,508	1,108,508
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	250.32	250.32	250.32	1,108,508	1,108,508

4.3 Trip Type Information

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Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Industrial Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Non-Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Parking Lot	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Unrefrigerated Warehouse-Rail	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	901.4120	901.4120	0.0213	4.4000e-003	903.2568
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	0.0000	901.4120	901.4120	0.0213	4.4000e-003	903.2568
NaturalGas Mitigated	7.4900e-003	0.0681	0.0572	4.1000e-004			5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1455	74.1455	1.4200e-003	1.3600e-003	74.5861
NaturalGas Unmitigated	7.4900e-003	0.0681	0.0572	4.1000e-004			5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1455	74.1455	1.4200e-003	1.3600e-003	74.5861

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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	219010	1.1800e-003	0.0107	9.0200e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.6872	11.6872	2.2000e-004	2.1000e-004	11.7567
General Light Industry	83260	4.5000e-004	4.0800e-003	3.4300e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4431	4.4431	9.0000e-005	8.0000e-005	4.4695
Industrial Park	1.07681e+006	5.8100e-003	0.0528	0.0443	3.2000e-004		4.0100e-003	4.0100e-003		4.0100e-003	4.0100e-003	0.0000	57.4627	57.4627	1.1000e-003	1.0500e-003	57.8042
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	10353	6.0000e-005	5.1000e-004	4.3000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5525	0.5525	1.0000e-005	1.0000e-005	0.5558
Total		7.5000e-003	0.0681	0.0572	4.0000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1455	74.1455	1.4200e-003	1.3500e-003	74.5861

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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	83260	4.5000e-004	4.0800e-003	3.4300e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4431	4.4431	9.0000e-005	8.0000e-005	4.4695
General Light Industry	219010	1.1800e-003	0.0107	9.0200e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.6872	11.6872	2.2000e-004	2.1000e-004	11.7567
Industrial Park	1.07681e+006	5.8100e-003	0.0528	0.0443	3.2000e-004		4.0100e-003	4.0100e-003		4.0100e-003	4.0100e-003	0.0000	57.4627	57.4627	1.1000e-003	1.0500e-003	57.8042
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	10353	6.0000e-005	5.1000e-004	4.3000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5525	0.5525	1.0000e-005	1.0000e-005	0.5558
Total		7.5000e-003	0.0681	0.0572	4.0000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	74.1455	74.1455	1.4200e-003	1.3500e-003	74.5861

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	134310	74.8055	1.7700e-003	3.7000e-004	74.9586
General Light Industry	51060	28.4385	6.7000e-004	1.4000e-004	28.4967
Industrial Park	1.34369e+006	748.3812	0.0177	3.6600e-003	749.9128
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	46410	25.8486	6.1000e-004	1.3000e-004	25.9015
Total		901.4119	0.0213	4.4200e-003	903.2568

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5.3 Energy by Land Use - Electricity**Mitigated**

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
		MT/yr			
General Light Industry	134310	74.8055	1.7700e-003	3.7000e-004	74.9586
General Light Industry	51060	28.4385	6.7000e-004	1.4000e-004	28.4967
Industrial Park	1.34369e+006	748.3812	0.0177	3.6600e-003	749.9128
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	46410	25.8486	6.1000e-004	1.3000e-004	25.9015
Total		901.4119	0.0213	4.4200e-003	903.2568

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Cleaning Supplies

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Unmitigated	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120

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	0.0647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5287					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Total	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5287					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.3000e-004	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Total	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120

7.0 Water Detail

7.1 Mitigation Measures Water

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	231.1275	1.0002	0.0246	263.4556
Unmitigated	231.1275	1.0002	0.0246	263.4556

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	3.86187 / 0	29.2323	0.1265	3.1100e-003	33.3210
Industrial Park	23.9205 / 0	181.0650	0.7836	0.0193	206.3909
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	2.75188 / 0	20.8302	0.0901	2.2100e-003	23.7437
Total		231.1275	1.0002	0.0246	263.4556

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	3.86187 / 0	29.2323	0.1265	3.1100e-003	33.3210
Industrial Park	23.9205 / 0	181.0650	0.7836	0.0193	206.3909
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	2.75188 / 0	20.8302	0.0901	2.2100e-003	23.7437
Total		231.1275	1.0002	0.0246	263.4556

8.0 Waste Detail

8.1 Mitigation Measures Waste

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	32.5131	1.9215	0.0000	80.5497
Unmitigated	32.5131	1.9215	0.0000	80.5497

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	20.71	4.2039	0.2485	0.0000	10.4151
Industrial Park	128.27	26.0377	1.5388	0.0000	64.5072
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	11.19	2.2715	0.1342	0.0000	5.6275
Total		32.5131	1.9215	0.0000	80.5497

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	20.71	4.2039	0.2485	0.0000	10.4151
Industrial Park	128.27	26.0377	1.5388	0.0000	64.5072
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	11.19	2.2715	0.1342	0.0000	5.6275
Total		32.5131	1.9215	0.0000	80.5497

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Construction GHG Emissions Summary Table

Total Construction GHG Emissions by Source (MTCO2e)

Source	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Design Option 1	Design Option 2
Equipment	17,385	17,936	11,636	6,850	17,385	17,936
Hauling	14,678	15,779	6,204	4,097	15,953	16,279
Vendor	2,691	2,691	2,144	1,288	2,691	2,691
Worker	7,344	7,555	4,854	3,072	7,344	7,555
Total	42,098.08	43,960.77	24,837.40	15,306.45	43,372.82	44,461.19
Amortization Period	30	30	30	30	30	30
Amortized	1,404	1,466	828	511	1,446	1,483

Construction GHG Emissions Calculation Worksheet

CalEEMod Annual GHG Emissions (MTCO2e)

Component	Activity	Phase	Year	Source	Alt 1	Alt 2	Alt 3	Alt 4	DO 1	DO 2
Aerial LRT	Guideway	Column Con	2023	Equipment	255.6	255.6	141.4	54.4	255.6	255.6
Aerial LRT	Guideway	Column Con	2024	Equipment	233.2	233.2	129.0	49.6	233.2	233.2
Aerial LRT	Guideway	Column Con	2023	Hauling			0.0	0.0		
Aerial LRT	Guideway	Column Con	2024	Hauling			0.0	0.0		
Aerial LRT	Guideway	Column Con	2023	Vendor	48.3	48.3	26.7	10.3	48.3	48.3
Aerial LRT	Guideway	Column Con	2024	Vendor	43.9	43.9	24.3	9.3	43.9	43.9
Aerial LRT	Guideway	Column Con	2023	Worker	140.7	140.7	77.9	29.9	140.7	140.7
Aerial LRT	Guideway	Column Con	2024	Worker	124.3	124.3	68.8	26.5	124.3	124.3
Aerial LRT	Guideway	Foundation Prep	2022	Equipment	364.7	364.7	201.7	77.6	364.7	364.7
Aerial LRT	Guideway	Foundation Prep	2023	Equipment	139.6	139.6	77.2	29.7	139.6	139.6
Aerial LRT	Guideway	Foundation Prep	2022	Hauling			0.0	0.0		
Aerial LRT	Guideway	Foundation Prep	2023	Hauling			0.0	0.0		
Aerial LRT	Guideway	Foundation Prep	2022	Vendor			0.0	0.0		
Aerial LRT	Guideway	Foundation Prep	2023	Vendor			0.0	0.0		
Aerial LRT	Guideway	Foundation Prep	2022	Worker	201.9	201.9	111.7	43.0	201.9	201.9
Aerial LRT	Guideway	Foundation Prep	2023	Worker	74.5	74.5	41.2	15.9	74.5	74.5
Aerial LRT	Stations	Foundation Prep	2022	Equipment	364.7	364.7	201.7	121.6	364.7	364.7
Aerial LRT	Stations	Foundation Prep	2023	Equipment	139.6	139.6	77.2	46.5	139.6	139.6
Aerial LRT	Stations	Foundation Prep	2022	Hauling			0.0	0.0		
Aerial LRT	Stations	Foundation Prep	2023	Hauling			0.0	0.0		
Aerial LRT	Stations	Foundation Prep	2022	Vendor			0.0	0.0		
Aerial LRT	Stations	Foundation Prep	2023	Vendor			0.0	0.0		
Aerial LRT	Stations	Foundation Prep	2022	Worker	201.9	201.9	111.7	67.3	201.9	201.9
Aerial LRT	Stations	Foundation Prep	2023	Worker	74.5	74.5	41.2	24.8	74.5	74.5
Aerial LRT	Stations	Platform Con	2023	Equipment	122.2	122.2	67.6	40.7	122.2	122.2
Aerial LRT	Stations	Platform Con	2024	Equipment	158.2	158.2	87.5	52.7	158.2	158.2
Aerial LRT	Stations	Platform Con	2023	Hauling			0.0	0.0		
Aerial LRT	Stations	Platform Con	2024	Hauling			0.0	0.0		
Aerial LRT	Stations	Platform Con	2023	Vendor	40.3	40.3	22.3	13.4	40.3	40.3
Aerial LRT	Stations	Platform Con	2024	Vendor	51.9	51.9	28.7	17.3	51.9	51.9
Aerial LRT	Stations	Platform Con	2023	Worker	117.3	117.3	64.9	39.1	117.3	117.3
Aerial LRT	Stations	Platform Con	2024	Worker	147.1	147.1	81.4	49.0	147.1	147.1
At-Grade LRT	Guideway	Track Bed Prep	2022	Equipment	263.8	263.8	263.8	120.1	263.8	263.8
At-Grade LRT	Guideway	Track Bed Prep	2023	Equipment	512.0	512.0	512.0	233.1	512.0	512.0
At-Grade LRT	Guideway	Track Bed Prep	2022	Hauling				0.0		
At-Grade LRT	Guideway	Track Bed Prep	2023	Hauling				0.0		
At-Grade LRT	Guideway	Track Bed Prep	2022	Vendor	49.9	49.9	49.9	22.7	49.9	49.9
At-Grade LRT	Guideway	Track Bed Prep	2023	Vendor	93.9	93.9	93.9	42.7	93.9	93.9

<u>Component</u>	<u>Activity</u>	<u>Phase</u>	<u>Year</u>	<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
At-Grade LRT	Guideway	Track Bed Prep	2022	Worker	48.7	48.7	48.7	22.2	48.7	48.7
At-Grade LRT	Guideway	Track Bed Prep	2023	Worker	91.1	91.1	91.1	41.5	91.1	91.1
At-Grade LRT	Guideway	Track Slab Con	2023	Equipment	214.6	214.6	214.6	97.7	214.6	214.6
At-Grade LRT	Guideway	Track Slab Con	2024	Equipment	350.2	350.2	350.2	159.4	350.2	350.2
At-Grade LRT	Guideway	Track Slab Con	2023	Hauling				0.0		
At-Grade LRT	Guideway	Track Slab Con	2024	Hauling				0.0		
At-Grade LRT	Guideway	Track Slab Con	2023	Vendor	54.0	54.0	54.0	24.6	54.0	54.0
At-Grade LRT	Guideway	Track Slab Con	2024	Vendor	87.8	87.8	87.8	40.0	87.8	87.8
At-Grade LRT	Guideway	Track Slab Con	2023	Worker	52.4	52.4	52.4	23.9	52.4	52.4
At-Grade LRT	Guideway	Track Slab Con	2024	Worker	82.9	82.9	82.9	37.7	82.9	82.9
At-Grade LRT	Guideway/Parking	Demolition	2022	Equipment	415.1	415.1	415.1	189.0	415.1	415.1
At-Grade LRT	Guideway/Parking	Demolition	2022	Hauling	814.9	814.9	814.9	371.0	814.9	814.9
At-Grade LRT	Guideway/Parking	Demolition	2022	Vendor				0.0		
At-Grade LRT	Guideway/Parking	Demolition	2022	Worker	257.8	257.8	257.8	117.4	257.8	257.8
At-Grade LRT	Parking Lots	Paving	2024	Equipment	167.6	167.6	167.6	134.1	167.6	167.6
At-Grade LRT	Parking Lots	Paving	2024	Hauling				0.0		
At-Grade LRT	Parking Lots	Paving	2024	Vendor				0.0		
At-Grade LRT	Parking Lots	Paving	2024	Worker	40.1	40.1	40.1	32.1	40.1	40.1
At-Grade LRT	Stations	Construction	2022	Equipment	188.3	188.3	188.3	94.2	188.3	188.3
At-Grade LRT	Stations	Construction	2023	Equipment	576.2	576.2	576.2	288.1	576.2	576.2
At-Grade LRT	Stations	Construction	2024	Equipment	343.5	343.5	343.5	171.7	343.5	343.5
At-Grade LRT	Stations	Construction	2022	Hauling				0.0		
At-Grade LRT	Stations	Construction	2023	Hauling				0.0		
At-Grade LRT	Stations	Construction	2024	Hauling				0.0		
At-Grade LRT	Stations	Construction	2022	Vendor	99.8	99.8	99.8	49.9	99.8	99.8
At-Grade LRT	Stations	Construction	2023	Vendor	295.8	295.8	295.8	147.9	295.8	295.8
At-Grade LRT	Stations	Construction	2024	Vendor	175.6	175.6	175.6	87.8	175.6	175.6
At-Grade LRT	Stations	Construction	2022	Worker	146.1	146.1	146.1	73.0	146.1	146.1
At-Grade LRT	Stations	Construction	2023	Worker	430.5	430.5	430.5	215.2	430.5	430.5
At-Grade LRT	Stations	Construction	2024	Worker	248.7	248.7	248.7	124.3	248.7	248.7
Demo&Relo	Demolition	Demolition	2022	Equipment	304.1	304.1	243.3	121.6	304.1	304.1
Demo&Relo	Demolition	Demolition	2022	Hauling	339.5	339.5	271.6	135.8	339.5	339.5
Demo&Relo	Demolition	Demolition	2022	Vendor			0.0	0.0		
Demo&Relo	Demolition	Demolition	2022	Worker	14.3	14.3	11.5	5.7	14.3	14.3
Demo&Relo	Freight Line Relocation	FLR	2022	Equipment	548.1	548.1	438.5	219.2	548.1	548.1
Demo&Relo	Freight Line Relocation	FLR	2023	Equipment	384.8	384.8	307.8	153.9	384.8	384.8
Demo&Relo	Freight Line Relocation	FLR	2022	Hauling			0.0	0.0		
Demo&Relo	Freight Line Relocation	FLR	2023	Hauling			0.0	0.0		
Demo&Relo	Freight Line Relocation	FLR	2022	Vendor			0.0	0.0		

<u>Component</u>	<u>Activity</u>	<u>Phase</u>	<u>Year</u>	<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
Demo&Relo	Freight Line Relocation	FLR	2023	Vendor			0.0	0.0		
Demo&Relo	Freight Line Relocation	FLR	2022	Worker	26.9	26.9	21.5	10.8	26.9	26.9
Demo&Relo	Freight Line Relocation	FLR	2023	Worker	18.2	18.2	14.6	7.3	18.2	18.2
Demo&Relo	Utility Relocation	UR	2022	Equipment	537.5	537.5	430.0	215.0	537.5	537.5
Demo&Relo	Utility Relocation	UR	2023	Equipment	594.6	594.6	475.7	237.9	594.6	594.6
Demo&Relo	Utility Relocation	UR	2024	Equipment	598.5	598.5	478.8	239.4	598.5	598.5
Demo&Relo	Utility Relocation	UR	2025	Equipment	259.2	259.2	207.4	103.7	259.2	259.2
Demo&Relo	Utility Relocation	UR	2022	Hauling			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2023	Hauling			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2024	Hauling			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2025	Hauling			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2022	Vendor			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2023	Vendor			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2024	Vendor			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2025	Vendor			0.0	0.0		
Demo&Relo	Utility Relocation	UR	2022	Worker	26.9	26.9	21.5	10.8	26.9	26.9
Demo&Relo	Utility Relocation	UR	2023	Worker	28.7	28.7	23.0	11.5	28.7	28.7
Demo&Relo	Utility Relocation	UR	2024	Worker	28.0	28.0	22.4	11.2	28.0	28.0
Demo&Relo	Utility Relocation	UR	2025	Worker	11.7	11.7	9.3	4.7	11.7	11.7
Excavation	Import/Export	Truck Hauling	2022	Hauling	2818.4	3564.9	939.8	630.4	3146.5	3208.5
Excavation	Import/Export	Truck Hauling	2023	Hauling	2988.2	3779.7	996.4	668.3	3336.0	3401.8
Excavation	Import/Export	Truck Hauling	2024	Hauling	3259.9	3042.3	998.3	669.6	3571.4	3674.3
Excavation	Import/Export	Truck Hauling	2025	Hauling	3121.4	2901.9	983.3	619.2	3408.8	3504.6
Excavation	Import/Export	Truck Hauling	2026	Hauling	333.0	333.0	196.5		333.0	333.0
Maint/Ops Facility	Construction	Coating/Striping	2024	Equipment	2.7	2.7	2.7	2.7	2.7	2.7
Maint/Ops Facility	Construction	Coating/Striping	2025	Equipment	17.7	17.7	17.7	17.7	17.7	17.7
Maint/Ops Facility	Construction	Coating/Striping	2024	Hauling						
Maint/Ops Facility	Construction	Coating/Striping	2025	Hauling						
Maint/Ops Facility	Construction	Coating/Striping	2024	Vendor						
Maint/Ops Facility	Construction	Coating/Striping	2025	Vendor						
Maint/Ops Facility	Construction	Coating/Striping	2024	Worker	3.6	3.6	3.6	3.6	3.6	3.6
Maint/Ops Facility	Construction	Coating/Striping	2025	Worker	22.3	22.3	22.3	22.3	22.3	22.3
Maint/Ops Facility	Construction	Construction	2023	Equipment	230.2	230.2	230.2	230.2	230.2	230.2
Maint/Ops Facility	Construction	Construction	2024	Equipment	489.3	489.3	489.3	489.3	489.3	489.3
Maint/Ops Facility	Construction	Construction	2023	Hauling						
Maint/Ops Facility	Construction	Construction	2024	Hauling						
Maint/Ops Facility	Construction	Construction	2023	Vendor	68.3	68.3	68.3	68.3	68.3	68.3
Maint/Ops Facility	Construction	Construction	2024	Vendor	144.5	144.5	144.5	144.5	144.5	144.5
Maint/Ops Facility	Construction	Construction	2023	Worker	198.7	198.7	198.7	198.7	198.7	198.7

<u>Component</u>	<u>Activity</u>	<u>Phase</u>	<u>Year</u>	<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
Maint/Ops Facility	Construction	Construction	2024	Worker	409.1	409.1	409.1	409.1	409.1	409.1
Maint/Ops Facility	Construction	Demolition	2022	Equipment	235.0	235.0	235.0	235.0	235.0	235.0
Maint/Ops Facility	Construction	Demolition	2022	Hauling	203.7	203.7	203.7	203.7	203.7	203.7
Maint/Ops Facility	Construction	Demolition	2022	Vendor	44.0	44.0	44.0	44.0	44.0	44.0
Maint/Ops Facility	Construction	Demolition	2022	Worker	128.9	128.9	128.9	128.9	128.9	128.9
Maint/Ops Facility	Construction	Paving	2024	Equipment	9.2	9.2	9.2	9.2	9.2	9.2
Maint/Ops Facility	Construction	Paving	2025	Equipment	59.5	59.5	59.5	59.5	59.5	59.5
Maint/Ops Facility	Construction	Paving	2024	Hauling						
Maint/Ops Facility	Construction	Paving	2025	Hauling						
Maint/Ops Facility	Construction	Paving	2024	Vendor	3.8	3.8	3.8	3.8	3.8	3.8
Maint/Ops Facility	Construction	Paving	2025	Vendor	24.4	24.4	24.4	24.4	24.4	24.4
Maint/Ops Facility	Construction	Paving	2024	Worker	7.1	7.1	7.1	7.1	7.1	7.1
Maint/Ops Facility	Construction	Paving	2025	Worker	44.6	44.6	44.6	44.6	44.6	44.6
Maint/Ops Facility	Construction	Site Prep	2022	Equipment	594.2	594.2	594.2	594.2	594.2	594.2
Maint/Ops Facility	Construction	Site Prep	2023	Equipment	519.9	519.9	519.9	519.9	519.9	519.9
Maint/Ops Facility	Construction	Site Prep	2022	Hauling	434.6	434.6	434.6	434.6	434.6	434.6
Maint/Ops Facility	Construction	Site Prep	2023	Hauling	364.4	364.4	364.4	364.4	364.4	364.4
Maint/Ops Facility	Construction	Site Prep	2022	Vendor	94.0	94.0	94.0	94.0	94.0	94.0
Maint/Ops Facility	Construction	Site Prep	2023	Vendor	79.6	79.6	79.6	79.6	79.6	79.6
Maint/Ops Facility	Construction	Site Prep	2022	Worker	275.0	275.0	275.0	275.0	275.0	275.0
Maint/Ops Facility	Construction	Site Prep	2023	Worker	231.8	231.8	231.8	231.8	231.8	231.8
Systems&TPSS	OCS	Construction	2022	Equipment	546.5	546.5	437.2	218.6	546.5	546.5
Systems&TPSS	OCS	Construction	2023	Equipment	604.8	604.8	483.8	241.9	604.8	604.8
Systems&TPSS	OCS	Construction	2024	Equipment	69.8	69.8	55.8	27.9	69.8	69.8
Systems&TPSS	OCS	Construction	2022	Hauling			0.0	0.0		
Systems&TPSS	OCS	Construction	2023	Hauling			0.0	0.0		
Systems&TPSS	OCS	Construction	2024	Hauling			0.0	0.0		
Systems&TPSS	OCS	Construction	2022	Vendor	138.0	138.0	110.4	55.2	138.0	138.0
Systems&TPSS	OCS	Construction	2023	Vendor	147.9	147.9	118.3	59.2	147.9	147.9
Systems&TPSS	OCS	Construction	2024	Vendor	17.0	17.0	13.6	6.8	17.0	17.0
Systems&TPSS	OCS	Construction	2022	Worker	269.3	269.3	215.4	107.7	269.3	269.3
Systems&TPSS	OCS	Construction	2023	Worker	287.0	287.0	229.6	114.8	287.0	287.0
Systems&TPSS	OCS	Construction	2024	Worker	32.1	32.1	25.7	12.8	32.1	32.1
Systems&TPSS	Signals	Construction	2022	Equipment	546.5	546.5	437.2	218.6	546.5	546.5
Systems&TPSS	Signals	Construction	2023	Equipment	604.8	604.8	483.8	241.9	604.8	604.8
Systems&TPSS	Signals	Construction	2024	Equipment	69.8	69.8	55.8	27.9	69.8	69.8
Systems&TPSS	Signals	Construction	2022	Hauling			0.0	0.0		
Systems&TPSS	Signals	Construction	2023	Hauling			0.0	0.0		
Systems&TPSS	Signals	Construction	2024	Hauling			0.0	0.0		

<u>Component</u>	<u>Activity</u>	<u>Phase</u>	<u>Year</u>	<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
Systems&TPSS	Signals	Construction	2022	Vendor	138.0	138.0	110.4	55.2	138.0	138.0
Systems&TPSS	Signals	Construction	2023	Vendor	147.9	147.9	118.3	59.2	147.9	147.9
Systems&TPSS	Signals	Construction	2024	Vendor	17.0	17.0	13.6	6.8	17.0	17.0
Systems&TPSS	Signals	Construction	2022	Worker	269.3	269.3	215.4	107.7	269.3	269.3
Systems&TPSS	Signals	Construction	2023	Worker	287.0	287.0	229.6	114.8	287.0	287.0
Systems&TPSS	Signals	Construction	2024	Worker	32.1	32.1	25.7	12.8	32.1	32.1
Systems&TPSS	TPSS	Construction	2022	Equipment	519.2	519.2	415.4	207.7	519.2	519.2
Systems&TPSS	TPSS	Construction	2023	Equipment	574.5	574.5	459.6	229.8	574.5	574.5
Systems&TPSS	TPSS	Construction	2024	Equipment	66.3	66.3	53.0	26.5	66.3	66.3
Systems&TPSS	TPSS	Construction	2022	Hauling			0.0	0.0		
Systems&TPSS	TPSS	Construction	2023	Hauling			0.0	0.0		
Systems&TPSS	TPSS	Construction	2024	Hauling			0.0	0.0		
Systems&TPSS	TPSS	Construction	2022	Vendor	138.0	138.0	110.4	55.2	138.0	138.0
Systems&TPSS	TPSS	Construction	2023	Vendor	147.9	147.9	118.3	59.2	147.9	147.9
Systems&TPSS	TPSS	Construction	2024	Vendor	17.0	17.0	13.6	6.8	17.0	17.0
Systems&TPSS	TPSS	Construction	2022	Worker	269.3	269.3	215.4	107.7	269.3	269.3
Systems&TPSS	TPSS	Construction	2023	Worker	287.0	287.0	229.6	114.8	287.0	287.0
Systems&TPSS	TPSS	Construction	2024	Worker	32.1	32.1	25.7	12.8	32.1	32.1
Underground LRT	Guideway	Excavation/Tunnel	2022	Equipment	518.2	518.2			518.2	518.2
Underground LRT	Guideway	Excavation/Tunnel	2023	Equipment	573.2	573.2			573.2	573.2
Underground LRT	Guideway	Excavation/Tunnel	2024	Equipment	11.0	11.0			11.0	11.0
Underground LRT	Guideway	Excavation/Tunnel	2022	Hauling						
Underground LRT	Guideway	Excavation/Tunnel	2023	Hauling						
Underground LRT	Guideway	Excavation/Tunnel	2024	Hauling						
Underground LRT	Guideway	Excavation/Tunnel	2022	Vendor						
Underground LRT	Guideway	Excavation/Tunnel	2023	Vendor						
Underground LRT	Guideway	Excavation/Tunnel	2024	Vendor						
Underground LRT	Guideway	Excavation/Tunnel	2022	Worker	201.9	201.9			201.9	201.9
Underground LRT	Guideway	Excavation/Tunnel	2023	Worker	215.2	215.2			215.2	215.2
Underground LRT	Guideway	Excavation/Tunnel	2024	Worker	4.0	4.0			4.0	4.0
Underground LRT	Guideway/Stations	Construction	2024	Equipment	592.8	592.8			592.8	592.8
Underground LRT	Guideway/Stations	Construction	2025	Equipment	602.0	602.0			602.0	602.0
Underground LRT	Guideway/Stations	Construction	2026	Equipment	189.1	189.1			189.1	189.1
Underground LRT	Guideway/Stations	Construction	2024	Hauling						
Underground LRT	Guideway/Stations	Construction	2025	Hauling						
Underground LRT	Guideway/Stations	Construction	2026	Hauling						
Underground LRT	Guideway/Stations	Construction	2024	Vendor	121.3	121.3			121.3	121.3
Underground LRT	Guideway/Stations	Construction	2025	Vendor	122.5	122.5			122.5	122.5
Underground LRT	Guideway/Stations	Construction	2026	Vendor	38.3	38.3			38.3	38.3

<u>Component</u>	<u>Activity</u>	<u>Phase</u>	<u>Year</u>	<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
Underground LRT	Guideway/Stations	Construction	2024	Worker	343.6	343.6			343.6	343.6
Underground LRT	Guideway/Stations	Construction	2025	Worker	335.4	335.4			335.4	335.4
Underground LRT	Guideway/Stations	Construction	2026	Worker	101.7	101.7			101.7	101.7
Underground LRT	Stations	Excavation/Grading	2022	Equipment	518.2	777.3			518.2	777.3
Underground LRT	Stations	Excavation/Grading	2023	Equipment	573.2	859.9			573.2	859.9
Underground LRT	Stations	Excavation/Grading	2024	Equipment	11.0	16.5			11.0	16.5
Underground LRT	Stations	Excavation/Grading	2022	Hauling		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2023	Hauling		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2024	Hauling		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2022	Vendor		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2023	Vendor		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2024	Vendor		0.0				0.0
Underground LRT	Stations	Excavation/Grading	2022	Worker	201.9	302.9			201.9	302.9
Underground LRT	Stations	Excavation/Grading	2023	Worker	215.2	322.9			215.2	322.9
Underground LRT	Stations	Excavation/Grading	2024	Worker	4.0	6.0			4.0	6.0

Total Construction GHG Emissions by Source (MTCO2e)

<u>Source</u>	<u>Alt 1</u>	<u>Alt 2</u>	<u>Alt 3</u>	<u>Alt 4</u>	<u>DO 1</u>	<u>DO 2</u>
Equipment	17,385	17,936	11,636	6,850	17,385	17,936
Hauling	14,678	15,779	6,204	4,097	15,953	16,279
Vendor	2,691	2,691	2,144	1,288	2,691	2,691
Worker	7,344	7,555	4,854	3,072	7,344	7,555
Total	42,098	43,961	24,837	15,306	43,373	44,461
Amortized	1,404	1,466	828	511	1,446	1,483

**Light Rail Corridor Components Construction
Annual CalEEMod Output Files**

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LACMTA West Santa Ana Branch Construction - Demolition & Relocations
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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	57.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - 9.4-miles of freight relocations x 50 feet width ≈ 46 acres.

Construction Phase - Freight Rail Line Relocation ~ 12 months

Utility Relocation ~ 40 months

Conservatively assume earliest possible completion

Off-road Equipment - LACMTA Construction Methods Report

Trips and VMT - Material Delivery to Site(s)

Grading -

Consumer Products - Construction Only

Area Coating - Construction Only

Landscape Equipment - Construction Only

Construction Off-road Equipment Mitigation - LACMTA Green Construction Policy

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

Demolition -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

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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	40.00	480.00
tblConstructionPhase	NumDays	40.00	1,044.00
tblConstructionPhase	NumDays	70.00	150.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	4/1/2022	8/19/2023
tblConstructionPhase	PhaseEndDate	5/27/2022	6/7/2025
tblConstructionPhase	PhaseStartDate	4/2/2022	2/7/2022
tblLandUse	LotAcreage	0.00	57.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts

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tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Graders
tbloffRoadEquipment	OffRoadEquipmentType		Cranes
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tbloffRoadEquipment	PhaseName		Utility Relocation
tbloffRoadEquipment	PhaseName		Utility Relocation
tbloffRoadEquipment	PhaseName		Utility Relocation
tbloffRoadEquipment	PhaseName		Utility Relocation
tbloffRoadEquipment	PhaseName		Utility Relocation
tbloffRoadEquipment	PhaseName		Utility Relocation
tbTripsAndVMT	HaulingTripNumber	0.00	9,000.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.0220	10.7954	8.4378	0.0200	2.4626	0.4432	2.9058	1.0622	0.4131	1.4752	0.0000	1,787.177 2	1,787.177 2	0.4092	0.0000	1,797.407 6
2023	0.6032	5.7804	5.4439	0.0116	1.7188	0.2501	1.9689	0.8727	0.2328	1.1054	0.0000	1,019.405 7	1,019.405 7	0.2782	0.0000	1,026.359 5
2024	0.3570	3.3134	3.3469	7.1000e-003	0.9799	0.1440	1.1239	0.5288	0.1339	0.6627	0.0000	622.2329	622.2329	0.1696	0.0000	626.4726
2025	0.1442	1.3018	1.4318	3.0700e-003	0.4244	0.0551	0.4795	0.2291	0.0512	0.2802	0.0000	269.0423	269.0423	0.0733	0.0000	270.8748
Maximum	1.0220	10.7954	8.4378	0.0200	2.4626	0.4432	2.9058	1.0622	0.4131	1.4752	0.0000	1,787.177 2	1,787.177 2	0.4092	0.0000	1,797.407 6

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2524	1.9903	9.8890	0.0200	1.0553	0.0289	1.0842	0.4399	0.0287	0.4686	0.0000	1,787.1755	1,787.1755	0.4092	0.0000	1,797.4059
2023	0.1522	0.5896	6.7177	0.0116	0.7044	0.0181	0.7226	0.3494	0.0181	0.3675	0.0000	1,019.4045	1,019.4045	0.2782	0.0000	1,026.3584
2024	0.0924	0.3595	4.1062	7.1000e-003	0.4031	0.0111	0.4142	0.2118	0.0111	0.2229	0.0000	622.2322	622.2322	0.1696	0.0000	626.4719
2025	0.0398	0.1554	1.7756	3.0700e-003	0.1746	4.8000e-003	0.1794	0.0918	4.7900e-003	0.0965	0.0000	269.0420	269.0420	0.0733	0.0000	270.8745
Maximum	0.2524	1.9903	9.8890	0.0200	1.0553	0.0289	1.0842	0.4399	0.0287	0.4686	0.0000	1,787.1755	1,787.1755	0.4092	0.0000	1,797.4059

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	74.76	85.40	-20.51	0.00	58.15	92.95	62.95	59.42	92.46	67.21	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	4.0626	0.9306
2	5-7-2022	8-6-2022	4.0479	0.9013
3	8-7-2022	11-6-2022	2.2714	0.2306
4	11-7-2022	2-6-2023	2.1555	0.2309
5	2-7-2023	5-6-2023	1.9172	0.2225
6	5-7-2023	8-6-2023	1.9812	0.2293
7	8-7-2023	11-6-2023	1.1161	0.1301
8	11-7-2023	2-6-2024	0.9531	0.1140

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9	2-7-2024	5-6-2024	0.9018	0.1111
10	5-7-2024	8-6-2024	0.9215	0.1132
11	8-7-2024	11-6-2024	0.9217	0.1135
12	11-7-2024	2-6-2025	0.8885	0.1136
13	2-7-2025	5-6-2025	0.8111	0.1096
14	5-7-2025	8-6-2025	0.2915	0.0393
		Highest	4.0626	0.9306

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Freight Rail Line Relocation	Site Preparation	2/7/2022	8/19/2023	6	480	Relocate existing at-grade freight tracks.
2	Utility Relocation	Site Preparation	2/7/2022	6/7/2025	6	1044	Relocate or temporarily reroute utilities.
3	Demolition	Demolition	2/7/2022	7/30/2022	6	150	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Utility Relocation	Rubber Tired Dozers	1	8.00	247	0.40
Utility Relocation	Excavators	2	8.00	158	0.38
Utility Relocation	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Freight Rail Line Relocation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Freight Rail Line Relocation	Excavators	2	8.00	158	0.38
Freight Rail Line Relocation	Rubber Tired Loaders	1	8.00	203	0.36
Freight Rail Line Relocation	Rough Terrain Forklifts	1	8.00	100	0.40
Freight Rail Line Relocation	Concrete/Industrial Saws	1	8.00	81	0.73
Freight Rail Line Relocation	Rollers	1	8.00	80	0.38
Utility Relocation	Rough Terrain Forklifts	1	8.00	100	0.40
Utility Relocation	Rollers	1	8.00	80	0.38
Utility Relocation	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Freight Rail Line Relocation	Graders	1	8.00	187	0.41
Utility Relocation	Cranes	1	8.00	231	0.29

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
Freight Rail Line Relocation	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Utility Relocation	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	9,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Freight Rail Line Relocation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9764	0.0000	0.9764	0.4805	0.0000	0.4805	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3644	3.7559	2.9834	6.2100e-003		0.1634	0.1634		0.1521	0.1521	0.0000	544.2102	544.2102	0.1556	0.0000	548.1008
Total	0.3644	3.7559	2.9834	6.2100e-003	0.9764	0.1634	1.1398	0.4805	0.1521	0.6325	0.0000	544.2102	544.2102	0.1556	0.0000	548.1008

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3.2 Freight Rail Line Relocation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257
Total	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257

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					0.3808	0.0000	0.3808	0.1874	0.0000	0.1874	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0743	0.3221	3.6565	6.2100e-003		9.9100e-003	9.9100e-003		9.9100e-003	9.9100e-003	0.0000	544.2095	544.2095	0.1556	0.0000	548.1002
Total	0.0743	0.3221	3.6565	6.2100e-003	0.3808	9.9100e-003	0.3907	0.1874	9.9100e-003	0.1973	0.0000	544.2095	544.2095	0.1556	0.0000	548.1002

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3.2 Freight Rail Line Relocation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257
Total	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257

3.2 Freight Rail Line Relocation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7235	0.0000	0.7235	0.3415	0.0000	0.3415	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2286	2.2895	2.0415	4.3600e-003		0.0964	0.0964		0.0897	0.0897	0.0000	382.0756	382.0756	0.1090	0.0000	384.8001
Total	0.2286	2.2895	2.0415	4.3600e-003	0.7235	0.0964	0.8199	0.3415	0.0897	0.4312	0.0000	382.0756	382.0756	0.1090	0.0000	384.8001

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3.2 Freight Rail Line Relocation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5100e-003	5.4200e-003	0.0634	2.0000e-004	0.0217	1.7000e-004	0.0219	5.7600e-003	1.5000e-004	5.9200e-003	0.0000	18.2009	18.2009	4.7000e-004	0.0000	18.2127
Total	7.5100e-003	5.4200e-003	0.0634	2.0000e-004	0.0217	1.7000e-004	0.0219	5.7600e-003	1.5000e-004	5.9200e-003	0.0000	18.2009	18.2009	4.7000e-004	0.0000	18.2127

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					0.2821	0.0000	0.2821	0.1332	0.0000	0.1332	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0522	0.2262	2.5674	4.3600e-003		6.9600e-003	6.9600e-003		6.9600e-003	6.9600e-003	0.0000	382.0752	382.0752	0.1090	0.0000	384.7997
Total	0.0522	0.2262	2.5674	4.3600e-003	0.2821	6.9600e-003	0.2891	0.1332	6.9600e-003	0.1401	0.0000	382.0752	382.0752	0.1090	0.0000	384.7997

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3.2 Freight Rail Line Relocation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5100e-003	5.4200e-003	0.0634	2.0000e-004	0.0217	1.7000e-004	0.0219	5.7600e-003	1.5000e-004	5.9200e-003	0.0000	18.2009	18.2009	4.7000e-004	0.0000	18.2127
Total	7.5100e-003	5.4200e-003	0.0634	2.0000e-004	0.0217	1.7000e-004	0.0219	5.7600e-003	1.5000e-004	5.9200e-003	0.0000	18.2009	18.2009	4.7000e-004	0.0000	18.2127

3.3 Utility Relocation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8491	0.0000	0.8491	0.4667	0.0000	0.4667	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3584	3.6046	3.0074	6.0900e-003		0.1644	0.1644		0.1529	0.1529	0.0000	533.6639	533.6639	0.1522	0.0000	537.4693
Total	0.3584	3.6046	3.0074	6.0900e-003	0.8491	0.1644	1.0135	0.4667	0.1529	0.6196	0.0000	533.6639	533.6639	0.1522	0.0000	537.4693

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3.3 Utility Relocation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257
Total	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257

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					0.3312	0.0000	0.3312	0.1820	0.0000	0.1820	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0729	0.3158	3.6036	6.0900e-003		9.7200e-003	9.7200e-003		9.7200e-003	9.7200e-003	0.0000	533.6633	533.6633	0.1522	0.0000	537.4687
Total	0.0729	0.3158	3.6036	6.0900e-003	0.3312	9.7200e-003	0.3409	0.1820	9.7200e-003	0.1918	0.0000	533.6633	533.6633	0.1522	0.0000	537.4687

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3.3 Utility Relocation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257
Total	0.0114	8.5300e-003	0.0983	3.0000e-004	0.0309	2.5000e-004	0.0312	8.2100e-003	2.3000e-004	8.4300e-003	0.0000	26.9072	26.9072	7.4000e-004	0.0000	26.9257

3.3 Utility Relocation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9395	0.0000	0.9395	0.5164	0.0000	0.5164	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3552	3.4770	3.2390	6.7400e-003		0.1533	0.1533		0.1426	0.1426	0.0000	590.4488	590.4488	0.1680	0.0000	594.6480
Total	0.3552	3.4770	3.2390	6.7400e-003	0.9395	0.1533	1.0927	0.5164	0.1426	0.6590	0.0000	590.4488	590.4488	0.1680	0.0000	594.6480

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3.3 Utility Relocation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.5400e-003	0.1000	3.2000e-004	0.0342	2.7000e-004	0.0345	9.0800e-003	2.4000e-004	9.3200e-003	0.0000	28.6803	28.6803	7.4000e-004	0.0000	28.6987
Total	0.0118	8.5400e-003	0.1000	3.2000e-004	0.0342	2.7000e-004	0.0345	9.0800e-003	2.4000e-004	9.3200e-003	0.0000	28.6803	28.6803	7.4000e-004	0.0000	28.6987

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					0.3664	0.0000	0.3664	0.2014	0.0000	0.2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0806	0.3494	3.9869	6.7400e-003		0.0108	0.0108		0.0108	0.0108	0.0000	590.4481	590.4481	0.1680	0.0000	594.6473
Total	0.0806	0.3494	3.9869	6.7400e-003	0.3664	0.0108	0.3771	0.2014	0.0108	0.2121	0.0000	590.4481	590.4481	0.1680	0.0000	594.6473

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3.3 Utility Relocation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.5400e-003	0.1000	3.2000e-004	0.0342	2.7000e-004	0.0345	9.0800e-003	2.4000e-004	9.3200e-003	0.0000	28.6803	28.6803	7.4000e-004	0.0000	28.6987
Total	0.0118	8.5400e-003	0.1000	3.2000e-004	0.0342	2.7000e-004	0.0345	9.0800e-003	2.4000e-004	9.3200e-003	0.0000	28.6803	28.6803	7.4000e-004	0.0000	28.6987

3.3 Utility Relocation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9455	0.0000	0.9455	0.5197	0.0000	0.5197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3458	3.3055	3.2532	6.7900e-003		0.1437	0.1437		0.1336	0.1336	0.0000	594.2637	594.2637	0.1689	0.0000	598.4864
Total	0.3458	3.3055	3.2532	6.7900e-003	0.9455	0.1437	1.0892	0.5197	0.1336	0.6533	0.0000	594.2637	594.2637	0.1689	0.0000	598.4864

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3.3 Utility Relocation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	7.8400e-003	0.0937	3.1000e-004	0.0344	2.6000e-004	0.0347	9.1400e-003	2.4000e-004	9.3800e-003	0.0000	27.9692	27.9692	6.8000e-004	0.0000	27.9862
Total	0.0113	7.8400e-003	0.0937	3.1000e-004	0.0344	2.6000e-004	0.0347	9.1400e-003	2.4000e-004	9.3800e-003	0.0000	27.9692	27.9692	6.8000e-004	0.0000	27.9862

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					0.3687	0.0000	0.3687	0.2027	0.0000	0.2027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0812	0.3517	4.0125	6.7900e-003		0.0108	0.0108		0.0108	0.0108	0.0000	594.2630	594.2630	0.1689	0.0000	598.4857
Total	0.0812	0.3517	4.0125	6.7900e-003	0.3687	0.0108	0.3796	0.2027	0.0108	0.2135	0.0000	594.2630	594.2630	0.1689	0.0000	598.4857

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3.3 Utility Relocation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0113	7.8400e-003	0.0937	3.1000e-004	0.0344	2.6000e-004	0.0347	9.1400e-003	2.4000e-004	9.3800e-003	0.0000	27.9692	27.9692	6.8000e-004	0.0000	27.9862
Total	0.0113	7.8400e-003	0.0937	3.1000e-004	0.0344	2.6000e-004	0.0347	9.1400e-003	2.4000e-004	9.3800e-003	0.0000	27.9692	27.9692	6.8000e-004	0.0000	27.9862

3.3 Utility Relocation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4095	0.0000	0.4095	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1396	1.2987	1.3941	2.9400e-003		0.0550	0.0550		0.0511	0.0511	0.0000	257.3973	257.3973	0.0730	0.0000	259.2231
Total	0.1396	1.2987	1.3941	2.9400e-003	0.4095	0.0550	0.4645	0.2251	0.0511	0.2762	0.0000	257.3973	257.3973	0.0730	0.0000	259.2231

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3.3 Utility Relocation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6500e-003	3.1100e-003	0.0377	1.3000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	11.6450	11.6450	2.7000e-004	0.0000	11.6517
Total	4.6500e-003	3.1100e-003	0.0377	1.3000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	11.6450	11.6450	2.7000e-004	0.0000	11.6517

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					0.1597	0.0000	0.1597	0.0878	0.0000	0.0878	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0352	0.1523	1.7379	2.9400e-003		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	257.3970	257.3970	0.0730	0.0000	259.2228
Total	0.0352	0.1523	1.7379	2.9400e-003	0.1597	4.6900e-003	0.1644	0.0878	4.6900e-003	0.0925	0.0000	257.3970	257.3970	0.0730	0.0000	259.2228

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3.3 Utility Relocation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6500e-003	3.1100e-003	0.0377	1.3000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	11.6450	11.6450	2.7000e-004	0.0000	11.6517
Total	4.6500e-003	3.1100e-003	0.0377	1.3000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	11.6450	11.6450	2.7000e-004	0.0000	11.6517

3.4 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4815	0.0000	0.4815	0.0729	0.0000	0.0729	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2343	2.2571	1.9110	3.4600e-003		0.1115	0.1115		0.1044	0.1044	0.0000	302.2224	302.2224	0.0761	0.0000	304.1239
Total	0.2343	2.2571	1.9110	3.4600e-003	0.4815	0.1115	0.5930	0.0729	0.1044	0.1773	0.0000	302.2224	302.2224	0.0761	0.0000	304.1239

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3.4 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0361	1.1562	0.2872	3.4400e-003	0.0773	3.2400e-003	0.0806	0.0212	3.1000e-003	0.0243	0.0000	338.9541	338.9541	0.0234	0.0000	339.5401
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	6.0500e-003	4.5400e-003	0.0523	1.6000e-004	0.0164	1.3000e-004	0.0166	4.3700e-003	1.2000e-004	4.4900e-003	0.0000	14.3123	14.3123	3.9000e-004	0.0000	14.3222
Total	0.0421	1.1607	0.3395	3.6000e-003	0.0938	3.3700e-003	0.0972	0.0256	3.2200e-003	0.0288	0.0000	353.2664	353.2664	0.0238	0.0000	353.8622

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					0.1878	0.0000	0.1878	0.0284	0.0000	0.0284	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0403	0.1746	2.0928	3.4600e-003		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	302.2220	302.2220	0.0761	0.0000	304.1235
Total	0.0403	0.1746	2.0928	3.4600e-003	0.1878	5.3700e-003	0.1932	0.0284	5.3700e-003	0.0338	0.0000	302.2220	302.2220	0.0761	0.0000	304.1235

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3.4 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0361	1.1562	0.2872	3.4400e-003	0.0773	3.2400e-003	0.0806	0.0212	3.1000e-003	0.0243	0.0000	338.9541	338.9541	0.0234	0.0000	339.5401
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	6.0500e-003	4.5400e-003	0.0523	1.6000e-004	0.0164	1.3000e-004	0.0166	4.3700e-003	1.2000e-004	4.4900e-003	0.0000	14.3123	14.3123	3.9000e-004	0.0000	14.3222
Total	0.0421	1.1607	0.3395	3.6000e-003	0.0938	3.3700e-003	0.0972	0.0256	3.2200e-003	0.0288	0.0000	353.2664	353.2664	0.0238	0.0000	353.8622

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

LACMTA WSAB Construction GHG - Hauling (Alt 1) - Los Angeles-South Coast County, Annual

LACMTA WSAB Construction GHG - Hauling (Alt 1)
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	153.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
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

LACMTA WSAB Construction GHG - Hauling (Alt 1) - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - LRT Corridor + Parking + MSF

Construction Phase - All Cut/Fill Material Hauling

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Trips and VMT - All Hauling

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	90.00
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	MaterialExported	0.00	335,760.00
tblGrading	MaterialExported	0.00	332,950.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	289,270.00
tblGrading	MaterialExported	0.00	20,665.00

LACMTA WSAB Construction GHG - Hauling (Alt 1) - Los Angeles-South Coast County, Annual

tblGrading	MaterialImported	0.00	54,295.00
tblGrading	MaterialImported	0.00	118,725.00
tblGrading	MaterialImported	0.00	515,970.00
tblGrading	MaterialImported	0.00	40,320.00
tblLandUse	LotAcreage	0.00	153.50
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	41,970.00	67,200.00
tblTripsAndVMT	HaulingTripNumber	48,405.00	77,500.00
tblTripsAndVMT	HaulingTripNumber	16,591.00	106,000.00
tblTripsAndVMT	HaulingTripNumber	100,655.00	81,600.00
tblTripsAndVMT	HaulingTripNumber	7,623.00	12,200.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

LACMTA WSAB Construction GHG - Hauling (Alt 1) - Los Angeles-South Coast County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2994	9.5971	2.3843	0.0286	1.8275	0.0269	1.8544	0.4628	0.0257	0.4885	0.0000	2,813.5635	2,813.5635	0.1946	0.0000	2,818.4277
2023	0.2174	6.9665	2.3931	0.0302	1.8445	0.0125	1.8570	0.4689	0.0119	0.4808	0.0000	2,983.2353	2,983.2353	0.1999	0.0000	2,988.2328
2024	0.2388	7.5815	2.6501	0.0329	2.4342	0.0135	2.4477	0.6114	0.0129	0.6243	0.0000	3,254.4506	3,254.4506	0.2190	0.0000	3,259.9248
2025	0.2287	7.1965	2.5696	0.0315	2.0562	0.0128	2.0690	0.5192	0.0123	0.5315	0.0000	3,116.1400	3,116.1400	0.2106	0.0000	3,121.4047
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.2994	9.5971	2.6501	0.0329	2.4342	0.0269	2.4477	0.6114	0.0257	0.6243	0.0000	3,254.4506	3,254.4506	0.2190	0.0000	3,259.9248

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2994	9.5971	2.3843	0.0286	1.8275	0.0269	1.8544	0.4628	0.0257	0.4885	0.0000	2,813.5635	2,813.5635	0.1946	0.0000	2,818.4277
2023	0.2174	6.9665	2.3931	0.0302	1.8445	0.0125	1.8570	0.4689	0.0119	0.4808	0.0000	2,983.2353	2,983.2353	0.1999	0.0000	2,988.2328
2024	0.2388	7.5815	2.6501	0.0329	2.4342	0.0135	2.4477	0.6114	0.0129	0.6243	0.0000	3,254.4506	3,254.4506	0.2190	0.0000	3,259.9248
2025	0.2287	7.1965	2.5696	0.0315	2.0562	0.0128	2.0690	0.5192	0.0123	0.5315	0.0000	3,116.1400	3,116.1400	0.2106	0.0000	3,121.4047
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.2994	9.5971	2.6501	0.0329	2.4342	0.0269	2.4477	0.6114	0.0257	0.6243	0.0000	3,254.4506	3,254.4506	0.2190	0.0000	3,259.9248

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	2.6164	2.6164
2	5-7-2022	8-6-2022	2.6857	2.6857
3	8-7-2022	11-6-2022	2.6985	2.6985
4	11-7-2022	2-6-2023	2.3424	2.3424
5	2-7-2023	5-6-2023	1.7214	1.7214
6	5-7-2023	8-6-2023	1.7715	1.7715

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7	8-7-2023	11-6-2023	1.7769	1.7769
8	11-7-2023	2-6-2024	1.8244	1.8244
9	2-7-2024	5-6-2024	1.8860	1.8860
10	5-7-2024	8-6-2024	1.9189	1.9189
11	8-7-2024	11-6-2024	1.9249	1.9249
12	11-7-2024	2-6-2025	1.9232	1.9232
13	2-7-2025	5-6-2025	1.8392	1.8392
14	5-7-2025	8-6-2025	1.8924	1.8924
15	8-7-2025	11-6-2025	1.8983	1.8983
16	11-7-2025	2-6-2026	1.2098	1.2098
17	2-7-2026	5-6-2026	0.4119	0.4119
		Highest	2.6985	2.6985

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Northern Section Tunnel	Grading	2/7/2022	1/6/2024	6	600	
2	Northern Section Stations	Grading	2/7/2022	12/6/2025	6	1200	
3	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	
4	Northern Section Cross-Overs	Grading	1/8/2024	12/6/2025	6	600	
5	Northern Section Other Cut/Fill	Grading	12/8/2025	3/21/2026	6	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Northern Section Tunnel	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Stations	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Cross-Overs	Rubber Tired Dozers	1	0.00	247	0.40
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Other Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

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3.6 Northern Section Other Cut/Fill - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	153.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
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

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Project Characteristics -

Land Use - LRT Corridor + Parking + MSF

Construction Phase - All Cut/Fill Material Hauling

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Trips and VMT - All Hauling

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	90.00
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	MaterialExported	0.00	403,990.00
tblGrading	MaterialExported	0.00	576,200.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	163,610.00
tblGrading	MaterialExported	0.00	20,665.00

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tblGrading	MaterialImported	0.00	96,120.00
tblGrading	MaterialImported	0.00	515,970.00
tblGrading	MaterialImported	0.00	38,880.00
tblGrading	MaterialImported	0.00	40,320.00
tblLandUse	LotAcreage	0.00	153.50
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	50,499.00	80,800.00
tblTripsAndVMT	HaulingTripNumber	84,040.00	134,500.00
tblTripsAndVMT	HaulingTripNumber	66,246.00	106,000.00
tblTripsAndVMT	HaulingTripNumber	25,311.00	40,500.00
tblTripsAndVMT	HaulingTripNumber	7,623.00	12,200.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3787	12.1391	3.0158	0.0361	2.3683	0.0340	2.4023	0.5965	0.0326	0.6290	0.0000	3,558.7728	3,558.7728	0.2461	0.0000	3,564.9254
2023	0.2750	8.8117	3.0269	0.0382	2.3898	0.0158	2.4055	0.6043	0.0151	0.6193	0.0000	3,773.3845	3,773.3845	0.2528	0.0000	3,779.7056
2024	0.2229	7.0754	2.4732	0.0307	2.6203	0.0126	2.6329	0.6547	0.0121	0.6668	0.0000	3,037.1778	3,037.1778	0.2044	0.0000	3,042.2865
2025	0.2126	6.6905	2.3889	0.0293	2.1503	0.0119	2.1622	0.5403	0.0114	0.5517	0.0000	2,897.0356	2,897.0356	0.1958	0.0000	2,901.9301
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3787	12.1391	3.0269	0.0382	2.6203	0.0340	2.6329	0.6547	0.0326	0.6668	0.0000	3,773.3845	3,773.3845	0.2528	0.0000	3,779.7056

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3787	12.1391	3.0158	0.0361	2.3683	0.0340	2.4023	0.5965	0.0326	0.6290	0.0000	3,558.7728	3,558.7728	0.2461	0.0000	3,564.9254
2023	0.2750	8.8117	3.0269	0.0382	2.3898	0.0158	2.4055	0.6043	0.0151	0.6193	0.0000	3,773.3845	3,773.3845	0.2528	0.0000	3,779.7056
2024	0.2229	7.0754	2.4732	0.0307	2.6203	0.0126	2.6329	0.6547	0.0121	0.6668	0.0000	3,037.1778	3,037.1778	0.2044	0.0000	3,042.2865
2025	0.2126	6.6905	2.3889	0.0293	2.1503	0.0119	2.1622	0.5403	0.0114	0.5517	0.0000	2,897.0356	2,897.0356	0.1958	0.0000	2,901.9301
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3787	12.1391	3.0269	0.0382	2.6203	0.0340	2.6329	0.6547	0.0326	0.6668	0.0000	3,773.3845	3,773.3845	0.2528	0.0000	3,779.7056

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	3.3094	3.3094
2	5-7-2022	8-6-2022	3.3970	3.3970
3	8-7-2022	11-6-2022	3.4132	3.4132
4	11-7-2022	2-6-2023	2.9628	2.9628
5	2-7-2023	5-6-2023	2.1774	2.1774
6	5-7-2023	8-6-2023	2.2407	2.2407

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7	8-7-2023	11-6-2023	2.2475	2.2475
8	11-7-2023	2-6-2024	2.0953	2.0953
9	2-7-2024	5-6-2024	1.7489	1.7489
10	5-7-2024	8-6-2024	1.7794	1.7794
11	8-7-2024	11-6-2024	1.7850	1.7850
12	11-7-2024	2-6-2025	1.7834	1.7834
13	2-7-2025	5-6-2025	1.7055	1.7055
14	5-7-2025	8-6-2025	1.7548	1.7548
15	8-7-2025	11-6-2025	1.7604	1.7604
16	11-7-2025	2-6-2026	1.1646	1.1646
17	2-7-2026	5-6-2026	0.4119	0.4119
		Highest	3.4132	3.4132

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Northern Section Tunnel	Grading	2/7/2022	1/6/2024	6	600	
2	Northern Section Stations	Grading	2/7/2022	12/6/2025	6	1200	
3	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	
4	Northern Section Cross-Overs	Grading	1/8/2024	12/6/2025	6	600	
5	Northern Section Other Cut/Fill	Grading	12/8/2025	3/21/2026	6	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Northern Section Tunnel	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Stations	Rubber Tired Dozers	1	0.00	247	0.40
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Cross-Overs	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Other Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

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3.6 Northern Section Other Cut/Fill - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	122.60	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -
 Land Use - 14.2-mile LRT Corridor (Slauson/A-Line to Pioneer) + Parking + MSF
 Construction Phase - All Cut/Fill Material Hauling
 Off-road Equipment - No Equipment
 Off-road Equipment - No Equipment
 Off-road Equipment - No Equipment
 Trips and VMT - All Hauling
 Grading -

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	90.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	20,665.00
tblGrading	MaterialImported	0.00	118,725.00
tblGrading	MaterialImported	0.00	35,510.00
tblLandUse	LotAcreage	0.00	122.60
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	16,591.00	106,000.00
tblTripsAndVMT	HaulingTripNumber	7,022.00	7,200.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0998	3.2001	0.7950	9.5200e-003	0.7455	8.9700e-003	0.7545	0.1885	8.5800e-003	0.1971	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714
2023	0.0725	2.3229	0.7980	0.0101	0.7512	4.1500e-003	0.7553	0.1906	3.9700e-003	0.1946	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909
2024	0.0731	2.3217	0.8115	0.0101	0.7516	4.1300e-003	0.7557	0.1907	3.9500e-003	0.1947	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734
2025	0.0721	2.2671	0.8095	9.9200e-003	0.8007	4.0400e-003	0.8047	0.2024	3.8600e-003	0.2063	0.0000	981.6584	981.6584	0.0663	0.0000	983.3169
2026	0.0144	0.4484	0.1635	1.9800e-003	0.0615	8.0000e-004	0.0623	0.0162	7.6000e-004	0.0169	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171
Maximum	0.0998	3.2001	0.8115	0.0101	0.8007	8.9700e-003	0.8047	0.2024	8.5800e-003	0.2063	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0998	3.2001	0.7950	9.5200e-003	0.7455	8.9700e-003	0.7545	0.1885	8.5800e-003	0.1971	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714
2023	0.0725	2.3229	0.7980	0.0101	0.7512	4.1500e-003	0.7553	0.1906	3.9700e-003	0.1946	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909
2024	0.0731	2.3217	0.8115	0.0101	0.7516	4.1300e-003	0.7557	0.1907	3.9500e-003	0.1947	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734
2025	0.0721	2.2671	0.8095	9.9200e-003	0.8007	4.0400e-003	0.8047	0.2024	3.8600e-003	0.2063	0.0000	981.6584	981.6584	0.0663	0.0000	983.3169
2026	0.0144	0.4484	0.1635	1.9800e-003	0.0615	8.0000e-004	0.0623	0.0162	7.6000e-004	0.0169	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171
Maximum	0.0998	3.2001	0.8115	0.0101	0.8007	8.9700e-003	0.8047	0.2024	8.5800e-003	0.2063	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	0.8724	0.8724
2	5-7-2022	8-6-2022	0.8955	0.8955
3	8-7-2022	11-6-2022	0.8998	0.8998
4	11-7-2022	2-6-2023	0.7810	0.7810
5	2-7-2023	5-6-2023	0.5740	0.5740
6	5-7-2023	8-6-2023	0.5907	0.5907

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7	8-7-2023	11-6-2023	0.5925	0.5925
8	11-7-2023	2-6-2024	0.5936	0.5936
9	2-7-2024	5-6-2024	0.5766	0.5766
10	5-7-2024	8-6-2024	0.5867	0.5867
11	8-7-2024	11-6-2024	0.5885	0.5885
12	11-7-2024	2-6-2025	0.5880	0.5880
13	2-7-2025	5-6-2025	0.5623	0.5623
14	5-7-2025	8-6-2025	0.5786	0.5786
15	8-7-2025	11-6-2025	0.5804	0.5804
16	11-7-2025	2-6-2026	0.5371	0.5371
17	2-7-2026	5-6-2026	0.2431	0.2431
		Highest	0.8998	0.8998

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	
2	Northern Section Other Cut/Fill	Grading	12/8/2025	3/21/2026	6	90	

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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Other Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Southern Section Cut/Fill	1	0.00	0.00	106,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Northern Section Other Cut/Fill	1	0.00	0.00	7,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Southern Section Cut/Fill - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0998	3.2001	0.7950	9.5200e-003	0.7380	8.9700e-003	0.7470	0.1874	8.5800e-003	0.1960	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0998	3.2001	0.7950	9.5200e-003	0.7380	8.9700e-003	0.7470	0.1874	8.5800e-003	0.1960	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714

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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					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0998	3.2001	0.7950	9.5200e-003	0.7380	8.9700e-003	0.7470	0.1874	8.5800e-003	0.1960	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0998	3.2001	0.7950	9.5200e-003	0.7380	8.9700e-003	0.7470	0.1874	8.5800e-003	0.1960	0.0000	938.1495	938.1495	0.0649	0.0000	939.7714

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3.2 Southern Section Cut/Fill - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0725	2.3229	0.7980	0.0101	0.7437	4.1500e-003	0.7478	0.1895	3.9700e-003	0.1934	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0725	2.3229	0.7980	0.0101	0.7437	4.1500e-003	0.7478	0.1895	3.9700e-003	0.1934	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909

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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					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0725	2.3229	0.7980	0.0101	0.7437	4.1500e-003	0.7478	0.1895	3.9700e-003	0.1934	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0725	2.3229	0.7980	0.0101	0.7437	4.1500e-003	0.7478	0.1895	3.9700e-003	0.1934	0.0000	994.7246	994.7246	0.0667	0.0000	996.3909

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3.2 Southern Section Cut/Fill - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0731	2.3217	0.8115	0.0101	0.7441	4.1300e-003	0.7482	0.1896	3.9500e-003	0.1935	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0731	2.3217	0.8115	0.0101	0.7441	4.1300e-003	0.7482	0.1896	3.9500e-003	0.1935	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734

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3.2 Southern Section Cut/Fill - 2024

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					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0731	2.3217	0.8115	0.0101	0.7441	4.1300e-003	0.7482	0.1896	3.9500e-003	0.1935	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0731	2.3217	0.8115	0.0101	0.7441	4.1300e-003	0.7482	0.1896	3.9500e-003	0.1935	0.0000	996.5971	996.5971	0.0671	0.0000	998.2734

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3.2 Southern Section Cut/Fill - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0676	2.1284	0.7600	9.3100e-003	0.7399	3.7900e-003	0.7437	0.1881	3.6300e-003	0.1917	0.0000	921.6298	921.6298	0.0623	0.0000	923.1868
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0676	2.1284	0.7600	9.3100e-003	0.7399	3.7900e-003	0.7437	0.1881	3.6300e-003	0.1917	0.0000	921.6298	921.6298	0.0623	0.0000	923.1868

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3.2 Southern Section Cut/Fill - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	7.5000e-003	0.0000	7.5000e-003	1.1400e-003	0.0000	1.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0676	2.1284	0.7600	9.3100e-003	0.7399	3.7900e-003	0.7437	0.1881	3.6300e-003	0.1917	0.0000	921.6298	921.6298	0.0623	0.0000	923.1868
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0676	2.1284	0.7600	9.3100e-003	0.7399	3.7900e-003	0.7437	0.1881	3.6300e-003	0.1917	0.0000	921.6298	921.6298	0.0623	0.0000	923.1868

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3.3 Northern Section Other Cut/Fill - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	4.4100e-003	0.1386	0.0495	6.1000e-004	0.0501	2.5000e-004	0.0504	0.0127	2.4000e-004	0.0130	0.0000	60.0286	60.0286	4.0600e-003	0.0000	60.1300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.4100e-003	0.1386	0.0495	6.1000e-004	0.0501	2.5000e-004	0.0504	0.0127	2.4000e-004	0.0130	0.0000	60.0286	60.0286	4.0600e-003	0.0000	60.1300

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3.3 Northern Section Other Cut/Fill - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	4.4100e-003	0.1386	0.0495	6.1000e-004	0.0501	2.5000e-004	0.0504	0.0127	2.4000e-004	0.0130	0.0000	60.0286	60.0286	4.0600e-003	0.0000	60.1300
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.4100e-003	0.1386	0.0495	6.1000e-004	0.0501	2.5000e-004	0.0504	0.0127	2.4000e-004	0.0130	0.0000	60.0286	60.0286	4.0600e-003	0.0000	60.1300

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3.3 Northern Section Other Cut/Fill - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0144	0.4484	0.1635	1.9800e-003	0.0583	8.0000e-004	0.0591	0.0157	7.6000e-004	0.0165	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0144	0.4484	0.1635	1.9800e-003	0.0583	8.0000e-004	0.0591	0.0157	7.6000e-004	0.0165	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171

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3.3 Northern Section Other Cut/Fill - 2026

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					3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	3.1800e-003	0.0000	3.1800e-003	4.8000e-004	0.0000	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0144	0.4484	0.1635	1.9800e-003	0.0583	8.0000e-004	0.0591	0.0157	7.6000e-004	0.0165	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0144	0.4484	0.1635	1.9800e-003	0.0583	8.0000e-004	0.0591	0.0157	7.6000e-004	0.0165	0.0000	196.1850	196.1850	0.0133	0.0000	196.5171

4.0 Operational Detail - Mobile

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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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

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	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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	71.90	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
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 -
 Land Use - 14.2-mile LRT Corridor (Slauson/A-Line to Pioneer) + Parking + MSF
 Construction Phase - All Cut/Fill Material Hauling
 Off-road Equipment - No Equipment
 Off-road Equipment - No Equipment
 Trips and VMT - All Hauling
 Grading -

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	MaterialImported	0.00	355,290.00
tblLandUse	LotAcreage	0.00	71.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	16,591.00	71,100.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0670	2.1465	0.5333	6.3900e-003	0.5151	6.0200e-003	0.5211	0.1287	5.7600e-003	0.1345	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561
2023	0.0486	1.5581	0.5352	6.7500e-003	0.5189	2.7900e-003	0.5217	0.1301	2.6600e-003	0.1328	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339
2024	0.0491	1.5573	0.5443	6.7600e-003	0.5192	2.7700e-003	0.5219	0.1302	2.6500e-003	0.1329	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966
2025	0.0454	1.4277	0.5098	6.2400e-003	0.5164	2.5400e-003	0.5189	0.1292	2.4300e-003	0.1316	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319
Maximum	0.0670	2.1465	0.5443	6.7600e-003	0.5192	6.0200e-003	0.5219	0.1302	5.7600e-003	0.1345	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0670	2.1465	0.5333	6.3900e-003	0.5151	6.0200e-003	0.5211	0.1287	5.7600e-003	0.1345	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561
2023	0.0486	1.5581	0.5352	6.7500e-003	0.5189	2.7900e-003	0.5217	0.1301	2.6600e-003	0.1328	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339
2024	0.0491	1.5573	0.5443	6.7600e-003	0.5192	2.7700e-003	0.5219	0.1302	2.6500e-003	0.1329	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966
2025	0.0454	1.4277	0.5098	6.2400e-003	0.5164	2.5400e-003	0.5189	0.1292	2.4300e-003	0.1316	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319
Maximum	0.0670	2.1465	0.5443	6.7600e-003	0.5192	6.0200e-003	0.5219	0.1302	5.7600e-003	0.1345	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	0.5852	0.5852
2	5-7-2022	8-6-2022	0.6007	0.6007
3	8-7-2022	11-6-2022	0.6035	0.6035
4	11-7-2022	2-6-2023	0.5239	0.5239
5	2-7-2023	5-6-2023	0.3850	0.3850
6	5-7-2023	8-6-2023	0.3962	0.3962
7	8-7-2023	11-6-2023	0.3974	0.3974
8	11-7-2023	2-6-2024	0.3982	0.3982

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9	2-7-2024	5-6-2024	0.3868	0.3868
10	5-7-2024	8-6-2024	0.3935	0.3935
11	8-7-2024	11-6-2024	0.3948	0.3948
12	11-7-2024	2-6-2025	0.3944	0.3944
13	2-7-2025	5-6-2025	0.3772	0.3772
14	5-7-2025	8-6-2025	0.3881	0.3881
15	8-7-2025	9-30-2025	0.2320	0.2320
		Highest	0.6035	0.6035

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Southern Section Cut/Fill	1	0.00	0.00	71,100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Southern Section Cut/Fill - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0670	2.1465	0.5333	6.3900e-003	0.4950	6.0200e-003	0.5010	0.1257	5.7600e-003	0.1315	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0670	2.1465	0.5333	6.3900e-003	0.4950	6.0200e-003	0.5010	0.1257	5.7600e-003	0.1315	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561

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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					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0670	2.1465	0.5333	6.3900e-003	0.4950	6.0200e-003	0.5010	0.1257	5.7600e-003	0.1315	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0670	2.1465	0.5333	6.3900e-003	0.4950	6.0200e-003	0.5010	0.1257	5.7600e-003	0.1315	0.0000	629.2682	629.2682	0.0435	0.0000	630.3561

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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					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0486	1.5581	0.5352	6.7500e-003	0.4988	2.7900e-003	0.5016	0.1271	2.6600e-003	0.1297	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0486	1.5581	0.5352	6.7500e-003	0.4988	2.7900e-003	0.5016	0.1271	2.6600e-003	0.1297	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339

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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					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0486	1.5581	0.5352	6.7500e-003	0.4988	2.7900e-003	0.5016	0.1271	2.6600e-003	0.1297	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0486	1.5581	0.5352	6.7500e-003	0.4988	2.7900e-003	0.5016	0.1271	2.6600e-003	0.1297	0.0000	667.2162	667.2162	0.0447	0.0000	668.3339

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3.2 Southern Section Cut/Fill - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0491	1.5573	0.5443	6.7600e-003	0.4991	2.7700e-003	0.5019	0.1272	2.6500e-003	0.1298	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0491	1.5573	0.5443	6.7600e-003	0.4991	2.7700e-003	0.5019	0.1272	2.6500e-003	0.1298	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966

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3.2 Southern Section Cut/Fill - 2024

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					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0491	1.5573	0.5443	6.7600e-003	0.4991	2.7700e-003	0.5019	0.1272	2.6500e-003	0.1298	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0491	1.5573	0.5443	6.7600e-003	0.4991	2.7700e-003	0.5019	0.1272	2.6500e-003	0.1298	0.0000	668.4722	668.4722	0.0450	0.0000	669.5966

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3.2 Southern Section Cut/Fill - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0454	1.4277	0.5098	6.2400e-003	0.4963	2.5400e-003	0.4989	0.1262	2.4300e-003	0.1286	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0454	1.4277	0.5098	6.2400e-003	0.4963	2.5400e-003	0.4989	0.1262	2.4300e-003	0.1286	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319

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3.2 Southern Section Cut/Fill - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0201	0.0000	0.0201	3.0400e-003	0.0000	3.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0454	1.4277	0.5098	6.2400e-003	0.4963	2.5400e-003	0.4989	0.1262	2.4300e-003	0.1286	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0454	1.4277	0.5098	6.2400e-003	0.4963	2.5400e-003	0.4989	0.1262	2.4300e-003	0.1286	0.0000	618.1875	618.1875	0.0418	0.0000	619.2319

4.0 Operational Detail - Mobile

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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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

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	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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	153.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - LRT Corridor + Parking + MSF

Construction Phase - All Cut/Fill Material Hauling

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Trips and VMT - All Hauling

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	90.00
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	MaterialExported	0.00	365,520.00
tblGrading	MaterialExported	0.00	416,565.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	300,055.00
tblGrading	MaterialExported	0.00	20,665.00

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tblGrading	MaterialImported	0.00	95,450.00
tblGrading	MaterialImported	0.00	515,970.00
tblGrading	MaterialImported	0.00	127,495.00
tblGrading	MaterialImported	0.00	40,320.00
tblLandUse	LotAcreage	0.00	153.50
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	45,690.00	73,200.00
tblTripsAndVMT	HaulingTripNumber	64,002.00	102,500.00
tblTripsAndVMT	HaulingTripNumber	66,246.00	106,000.00
tblTripsAndVMT	HaulingTripNumber	53,444.00	85,600.00
tblTripsAndVMT	HaulingTripNumber	7,623.00	12,200.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3343	10.7141	2.6618	0.0319	2.0776	0.0300	2.1076	0.5234	0.0287	0.5521	0.0000	3,141.0307	3,141.0307	0.2172	0.0000	3,146.4611
2023	0.2427	7.7773	2.6716	0.0337	2.0965	0.0139	2.1104	0.5303	0.0133	0.5436	0.0000	3,330.4505	3,330.4505	0.2232	0.0000	3,336.0296
2024	0.2616	8.3060	2.9033	0.0361	2.6886	0.0148	2.7034	0.6751	0.0142	0.6892	0.0000	3,565.4305	3,565.4305	0.2399	0.0000	3,571.4278
2025	0.2498	7.8591	2.8062	0.0344	2.2688	0.0140	2.2828	0.5726	0.0134	0.5860	0.0000	3,403.0625	3,403.0625	0.2300	0.0000	3,408.8119
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3343	10.7141	2.9033	0.0361	2.6886	0.0300	2.7034	0.6751	0.0287	0.6892	0.0000	3,565.4305	3,565.4305	0.2399	0.0000	3,571.4278

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3343	10.7141	2.6618	0.0319	2.0776	0.0300	2.1076	0.5234	0.0287	0.5521	0.0000	3,141.0307	3,141.0307	0.2172	0.0000	3,146.4611
2023	0.2427	7.7773	2.6716	0.0337	2.0965	0.0139	2.1104	0.5303	0.0133	0.5436	0.0000	3,330.4505	3,330.4505	0.2232	0.0000	3,336.0296
2024	0.2616	8.3060	2.9033	0.0361	2.6886	0.0148	2.7034	0.6751	0.0142	0.6892	0.0000	3,565.4305	3,565.4305	0.2399	0.0000	3,571.4278
2025	0.2498	7.8591	2.8062	0.0344	2.2688	0.0140	2.2828	0.5726	0.0134	0.5860	0.0000	3,403.0625	3,403.0625	0.2300	0.0000	3,408.8119
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3343	10.7141	2.9033	0.0361	2.6886	0.0300	2.7034	0.6751	0.0287	0.6892	0.0000	3,565.4305	3,565.4305	0.2399	0.0000	3,571.4278

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	2.9209	2.9209
2	5-7-2022	8-6-2022	2.9983	2.9983
3	8-7-2022	11-6-2022	3.0125	3.0125
4	11-7-2022	2-6-2023	2.6150	2.6150
5	2-7-2023	5-6-2023	1.9218	1.9218
6	5-7-2023	8-6-2023	1.9776	1.9776

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7	8-7-2023	11-6-2023	1.9837	1.9837
8	11-7-2023	2-6-2024	2.0236	2.0236
9	2-7-2024	5-6-2024	2.0655	2.0655
10	5-7-2024	8-6-2024	2.1015	2.1015
11	8-7-2024	11-6-2024	2.1081	2.1081
12	11-7-2024	2-6-2025	2.1062	2.1062
13	2-7-2025	5-6-2025	2.0143	2.0143
14	5-7-2025	8-6-2025	2.0725	2.0725
15	8-7-2025	11-6-2025	2.0790	2.0790
16	11-7-2025	2-6-2026	1.2690	1.2690
17	2-7-2026	5-6-2026	0.4119	0.4119
		Highest	3.0125	3.0125

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Northern Section Tunnel	Grading	2/7/2022	1/6/2024	6	600	
2	Northern Section Stations	Grading	2/7/2022	12/6/2025	6	1200	
3	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	
4	Northern Section Cross-Overs	Grading	1/8/2024	12/6/2025	6	600	
5	Northern Section Other Cut/Fill	Grading	12/8/2025	3/21/2026	6	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Northern Section Tunnel	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Stations	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Cross-Overs	Rubber Tired Dozers	1	0.00	247	0.40
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Other Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

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3.6 Northern Section Other Cut/Fill - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	153.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
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

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Project Characteristics -

Land Use - LRT Corridor + Parking + MSF

Construction Phase - All Cut/Fill Material Hauling

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Off-road Equipment - No Equipment

Trips and VMT - All Hauling

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	1,200.00
tblConstructionPhase	NumDays	310.00	600.00
tblConstructionPhase	NumDays	310.00	90.00
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	MaterialExported	0.00	335,760.00
tblGrading	MaterialExported	0.00	553,180.00
tblGrading	MaterialExported	0.00	14,000.00
tblGrading	MaterialExported	0.00	289,270.00
tblGrading	MaterialExported	0.00	20,665.00

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tblGrading	MaterialImported	0.00	74,180.00
tblGrading	MaterialImported	0.00	515,970.00
tblGrading	MaterialImported	0.00	118,725.00
tblGrading	MaterialImported	0.00	40,320.00
tblLandUse	LotAcreage	0.00	153.50
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	41,970.00	67,200.00
tblTripsAndVMT	HaulingTripNumber	78,420.00	121,500.00
tblTripsAndVMT	HaulingTripNumber	66,246.00	106,000.00
tblTripsAndVMT	HaulingTripNumber	50,999.00	81,600.00
tblTripsAndVMT	HaulingTripNumber	7,623.00	12,200.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3409	10.9255	2.7143	0.0325	2.1699	0.0306	2.2005	0.5460	0.0293	0.5753	0.0000	3,202.9840	3,202.9840	0.2215	0.0000	3,208.5215
2023	0.2475	7.9307	2.7243	0.0344	2.1892	0.0142	2.2034	0.5530	0.0136	0.5666	0.0000	3,396.1399	3,396.1399	0.2276	0.0000	3,401.8290
2024	0.2692	8.5453	2.9870	0.0371	2.7566	0.0152	2.7718	0.6921	0.0146	0.7067	0.0000	3,668.1324	3,668.1324	0.2468	0.0000	3,674.3024
2025	0.2568	8.0800	2.8850	0.0353	2.3769	0.0144	2.3913	0.5993	0.0138	0.6131	0.0000	3,498.7033	3,498.7033	0.2364	0.0000	3,504.6143
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3409	10.9255	2.9870	0.0371	2.7566	0.0306	2.7718	0.6921	0.0293	0.7067	0.0000	3,668.1324	3,668.1324	0.2468	0.0000	3,674.3024

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3409	10.9255	2.7143	0.0325	2.1699	0.0306	2.2005	0.5460	0.0293	0.5753	0.0000	3,202.9840	3,202.9840	0.2215	0.0000	3,208.5215
2023	0.2475	7.9307	2.7243	0.0344	2.1892	0.0142	2.2034	0.5530	0.0136	0.5666	0.0000	3,396.1399	3,396.1399	0.2276	0.0000	3,401.8290
2024	0.2692	8.5453	2.9870	0.0371	2.7566	0.0152	2.7718	0.6921	0.0146	0.7067	0.0000	3,668.1324	3,668.1324	0.2468	0.0000	3,674.3024
2025	0.2568	8.0800	2.8850	0.0353	2.3769	0.0144	2.3913	0.5993	0.0138	0.6131	0.0000	3,498.7033	3,498.7033	0.2364	0.0000	3,504.6143
2026	0.0244	0.7599	0.2771	3.3500e-003	0.1022	1.3500e-003	0.1036	0.0271	1.2900e-003	0.0284	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Maximum	0.3409	10.9255	2.9870	0.0371	2.7566	0.0306	2.7718	0.6921	0.0293	0.7067	0.0000	3,668.1324	3,668.1324	0.2468	0.0000	3,674.3024

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	2.9785	2.9785
2	5-7-2022	8-6-2022	3.0574	3.0574
3	8-7-2022	11-6-2022	3.0720	3.0720
4	11-7-2022	2-6-2023	2.6666	2.6666
5	2-7-2023	5-6-2023	1.9597	1.9597
6	5-7-2023	8-6-2023	2.0166	2.0166

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7	8-7-2023	11-6-2023	2.0228	2.0228
8	11-7-2023	2-6-2024	2.0708	2.0708
9	2-7-2024	5-6-2024	2.1253	2.1253
10	5-7-2024	8-6-2024	2.1624	2.1624
11	8-7-2024	11-6-2024	2.1692	2.1692
12	11-7-2024	2-6-2025	2.1672	2.1672
13	2-7-2025	5-6-2025	2.0726	2.0726
14	5-7-2025	8-6-2025	2.1325	2.1325
15	8-7-2025	11-6-2025	2.1393	2.1393
16	11-7-2025	2-6-2026	1.2887	1.2887
17	2-7-2026	5-6-2026	0.4119	0.4119
		Highest	3.0720	3.0720

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Northern Section Tunnel	Grading	2/7/2022	1/6/2024	6	600	
2	Northern Section Stations	Grading	2/7/2022	12/6/2025	6	1200	
3	Southern Section Cut/Fill	Grading	2/7/2022	12/6/2025	6	1200	
4	Northern Section Cross-Overs	Grading	1/8/2024	12/6/2025	6	600	
5	Northern Section Other Cut/Fill	Grading	12/8/2025	3/21/2026	6	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Northern Section Tunnel	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Stations	Rubber Tired Dozers	1	0.00	247	0.40
Southern Section Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Cross-Overs	Rubber Tired Dozers	1	0.00	247	0.40
Northern Section Other Cut/Fill	Rubber Tired Dozers	1	0.00	247	0.40

Trips and VMT

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3.6 Northern Section Other Cut/Fill - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0244	0.7599	0.2771	3.3500e-003	0.0988	1.3500e-003	0.1001	0.0266	1.2900e-003	0.0279	0.0000	332.4246	332.4246	0.0225	0.0000	332.9872

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	13.95	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - 2.3 miles underground LRT corridor

Construction Phase - Construction Methods Report - 50 months max duration

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

Grading -

Trips and VMT - Concrete Truck and Material Deliveries

Excavation accounted for in separate moeling file

Fleet Mix -

Area Coating -

Construction Off-road Equipment Mitigation - LACMTA Green Construction Policy

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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

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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	30.00	600.00
tblConstructionPhase	NumDays	30.00	600.00
tblConstructionPhase	NumDays	300.00	600.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblLandUse	LotAcreage	0.00	13.95
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	150.00
tblTripsAndVMT	WorkerTripNumber	15.00	150.00
tblTripsAndVMT	WorkerTripNumber	0.00	300.00

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.9779	8.6371	6.4146	0.0162	4.1781	0.3801	4.5582	2.0244	0.3497	2.3741	0.0000	1,431.720 9	1,431.720 9	0.3436	0.0000	1,440.311 6
2023	0.9455	7.9689	6.6418	0.0177	4.5888	0.3413	4.9300	2.2361	0.3140	2.5501	0.0000	1,567.478 3	1,567.478 3	0.3789	0.0000	1,576.950 6
2024	0.4373	3.0742	4.3927	0.0122	0.8551	0.1013	0.9564	0.1982	0.0965	0.2947	0.0000	1,083.807 2	1,083.807 2	0.1610	0.0000	1,087.831 4
2025	0.4048	2.8332	4.2352	0.0119	0.4619	0.0869	0.5488	0.1234	0.0828	0.2062	0.0000	1,056.115 3	1,056.115 3	0.1544	0.0000	1,059.974 5
2026	0.1252	0.8868	1.3075	3.7000e-003	0.1451	0.0273	0.1724	0.0388	0.0260	0.0648	0.0000	327.9460	327.9460	0.0483	0.0000	329.1527
Maximum	0.9779	8.6371	6.6418	0.0177	4.5888	0.3801	4.9300	2.2361	0.3497	2.5501	0.0000	1,567.478 3	1,567.478 3	0.3789	0.0000	1,576.950 6

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3145	0.7512	7.6429	0.0162	1.9122	0.0229	1.9351	0.8646	0.0226	0.8872	0.0000	1,431.7196	1,431.7196	0.3436	0.0000	1,440.3103
2023	0.3367	0.8176	8.3248	0.0177	2.1025	0.0252	2.1276	0.9552	0.0249	0.9801	0.0000	1,567.4769	1,567.4769	0.3789	0.0000	1,576.9492
2024	0.2393	1.0462	5.2909	0.0122	0.6169	0.0145	0.6315	0.1531	0.0143	0.1673	0.0000	1,083.8065	1,083.8065	0.1610	0.0000	1,087.8307
2025	0.2295	1.0352	5.1256	0.0119	0.4619	0.0142	0.4761	0.1234	0.0139	0.1374	0.0000	1,056.1146	1,056.1146	0.1544	0.0000	1,059.9738
2026	0.0702	0.3219	1.5873	3.7000e-003	0.1451	4.4200e-003	0.1495	0.0388	4.3400e-003	0.0431	0.0000	327.9458	327.9458	0.0483	0.0000	329.1525
Maximum	0.3367	1.0462	8.3248	0.0177	2.1025	0.0252	2.1276	0.9552	0.0249	0.9801	0.0000	1,567.4769	1,567.4769	0.3789	0.0000	1,576.9492

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	58.83	83.03	-21.66	0.00	48.79	91.33	52.36	53.80	90.80	59.65	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	2.6017	0.2890
2	5-7-2022	8-6-2022	2.6841	0.2935
3	8-7-2022	11-6-2022	2.6877	0.2970
4	11-7-2022	2-6-2023	2.5177	0.2997
5	2-7-2023	5-6-2023	2.1804	0.2830
6	5-7-2023	8-6-2023	2.2489	0.2876

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7	8-7-2023	11-6-2023	2.2523	0.2909
8	11-7-2023	2-6-2024	1.7707	0.3019
9	2-7-2024	5-6-2024	0.8366	0.3156
10	5-7-2024	8-6-2024	0.8514	0.3188
11	8-7-2024	11-6-2024	0.8540	0.3214
12	11-7-2024	2-6-2025	0.8415	0.3232
13	2-7-2025	5-6-2025	0.7882	0.3076
14	5-7-2025	8-6-2025	0.8112	0.3143
15	8-7-2025	11-6-2025	0.8136	0.3168
16	11-7-2025	2-6-2026	0.8155	0.3187
17	2-7-2026	5-6-2026	0.6789	0.2631
		Highest	2.6877	0.3232

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Excavation & Tunneling - LRT Guideway	Grading	2/7/2022	1/6/2024	6	600	
2	Excavation & Grading - LRT Stations	Grading	2/7/2022	1/6/2024	6	600	
3	Construction - LRT Guideway & Stations	Building Construction	1/8/2024	4/24/2026	5	600	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Construction - LRT Guideway & Stations	Cranes	1	8.00	231	0.29
Excavation & Tunneling - LRT Guideway	Excavators	2	8.00	158	0.38
Excavation & Grading - LRT Stations	Excavators	2	8.00	158	0.38
Excavation & Grading - LRT Stations	Crawler Tractors	1	8.00	212	0.43
Construction - LRT Guideway & Stations	Bore/Drill Rigs	2	8.00	221	0.50
Excavation & Tunneling - LRT Guideway	Rubber Tired Dozers	2	8.00	247	0.40
Excavation & Grading - LRT Stations	Rubber Tired Dozers	2	8.00	247	0.40
Excavation & Grading - LRT Stations	Rubber Tired Loaders	1	8.00	203	0.36
Excavation & Tunneling - LRT Guideway	Crawler Tractors	1	8.00	212	0.43
Excavation & Tunneling - LRT Guideway	Rubber Tired Loaders	1	8.00	203	0.36
Construction - LRT Guideway & Stations	Generator Sets	2	8.00	84	0.74
Construction - LRT Guideway & Stations	Welders	2	8.00	46	0.45
Construction - LRT Guideway & Stations	Rough Terrain Forklifts	3	8.00	100	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
Excavation & Tunneling - LRT Guideway	6	150.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Excavation & Grading - LRT Stations	6	150.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction - LRT Guideway & Stations	10	300.00	40.00	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

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3.2 Excavation & Tunneling - LRT Guideway - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8573	0.0000	1.8573	0.9507	0.0000	0.9507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4036	4.2546	2.4704	5.8500e-003		0.1882	0.1882		0.1731	0.1731	0.0000	514.0567	514.0567	0.1663	0.0000	518.2131
Total	0.4036	4.2546	2.4704	5.8500e-003	1.8573	0.1882	2.0455	0.9507	0.1731	1.1238	0.0000	514.0567	514.0567	0.1663	0.0000	518.2131

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	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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3.2 Excavation & Tunneling - LRT Guideway - 2022

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					0.7244	0.0000	0.7244	0.3708	0.0000	0.3708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0719	0.3116	3.0845	5.8500e-003		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	514.0561	514.0561	0.1663	0.0000	518.2125
Total	0.0719	0.3116	3.0845	5.8500e-003	0.7244	9.5900e-003	0.7339	0.3708	9.5900e-003	0.3804	0.0000	514.0561	514.0561	0.1663	0.0000	518.2125

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	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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3.2 Excavation & Tunneling - LRT Guideway - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0380	0.0000	2.0380	1.0500	0.0000	1.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3840	3.9204	2.5711	6.4700e-003		0.1687	0.1687		0.1552	0.1552	0.0000	568.6371	568.6371	0.1839	0.0000	573.2348
Total	0.3840	3.9204	2.5711	6.4700e-003	2.0380	0.1687	2.2066	1.0500	0.1552	1.2051	0.0000	568.6371	568.6371	0.1839	0.0000	573.2348

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	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405
Total	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405

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3.2 Excavation & Tunneling - LRT Guideway - 2023

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					0.7948	0.0000	0.7948	0.4095	0.0000	0.4095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.3447	3.4126	6.4700e-003		0.0106	0.0106		0.0106	0.0106	0.0000	568.6364	568.6364	0.1839	0.0000	573.2341
Total	0.0796	0.3447	3.4126	6.4700e-003	0.7948	0.0106	0.8054	0.4095	0.0106	0.4201	0.0000	568.6364	568.6364	0.1839	0.0000	573.2341

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	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405
Total	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405

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3.2 Excavation & Tunneling - LRT Guideway - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0370	0.0000	0.0370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2900e-003	0.0724	0.0495	1.2000e-004		3.1300e-003	3.1300e-003		2.8800e-003	2.8800e-003	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254
Total	7.2900e-003	0.0724	0.0495	1.2000e-004	0.1952	3.1300e-003	0.1983	0.0370	2.8800e-003	0.0399	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254

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	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108
Total	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108

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3.2 Excavation & Tunneling - LRT Guideway - 2024

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					0.0761	0.0000	0.0761	0.0144	0.0000	0.0144	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5300e-003	6.6300e-003	0.0656	1.2000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254
Total	1.5300e-003	6.6300e-003	0.0656	1.2000e-004	0.0761	2.0000e-004	0.0763	0.0144	2.0000e-004	0.0146	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254

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	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108
Total	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108

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3.3 Excavation & Grading - LRT Stations - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8573	0.0000	1.8573	0.9507	0.0000	0.9507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4036	4.2546	2.4704	5.8500e-003		0.1882	0.1882		0.1731	0.1731	0.0000	514.0567	514.0567	0.1663	0.0000	518.2131
Total	0.4036	4.2546	2.4704	5.8500e-003	1.8573	0.1882	2.0455	0.9507	0.1731	1.1238	0.0000	514.0567	514.0567	0.1663	0.0000	518.2131

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	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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3.3 Excavation & Grading - LRT Stations - 2022

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					0.7244	0.0000	0.7244	0.3708	0.0000	0.3708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0719	0.3116	3.0845	5.8500e-003		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	514.0561	514.0561	0.1663	0.0000	518.2125
Total	0.0719	0.3116	3.0845	5.8500e-003	0.7244	9.5900e-003	0.7339	0.3708	9.5900e-003	0.3804	0.0000	514.0561	514.0561	0.1663	0.0000	518.2125

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	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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3.3 Excavation & Grading - LRT Stations - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0380	0.0000	2.0380	1.0500	0.0000	1.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3840	3.9204	2.5711	6.4700e-003		0.1687	0.1687		0.1552	0.1552	0.0000	568.6371	568.6371	0.1839	0.0000	573.2348
Total	0.3840	3.9204	2.5711	6.4700e-003	2.0380	0.1687	2.2066	1.0500	0.1552	1.2051	0.0000	568.6371	568.6371	0.1839	0.0000	573.2348

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	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405
Total	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405

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3.3 Excavation & Grading - LRT Stations - 2023

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					0.7948	0.0000	0.7948	0.4095	0.0000	0.4095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.3447	3.4126	6.4700e-003		0.0106	0.0106		0.0106	0.0106	0.0000	568.6364	568.6364	0.1839	0.0000	573.2341
Total	0.0796	0.3447	3.4126	6.4700e-003	0.7948	0.0106	0.8054	0.4095	0.0106	0.4201	0.0000	568.6364	568.6364	0.1839	0.0000	573.2341

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	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405
Total	0.0888	0.0640	0.7497	2.3800e-003	0.2564	1.9900e-003	0.2584	0.0681	1.8300e-003	0.0699	0.0000	215.1020	215.1020	5.5400e-003	0.0000	215.2405

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3.3 Excavation & Grading - LRT Stations - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0370	0.0000	0.0370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2900e-003	0.0724	0.0495	1.2000e-004		3.1300e-003	3.1300e-003		2.8800e-003	2.8800e-003	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254
Total	7.2900e-003	0.0724	0.0495	1.2000e-004	0.1952	3.1300e-003	0.1983	0.0370	2.8800e-003	0.0399	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254

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	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108
Total	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108

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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					0.0761	0.0000	0.0761	0.0144	0.0000	0.0144	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5300e-003	6.6300e-003	0.0656	1.2000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254
Total	1.5300e-003	6.6300e-003	0.0656	1.2000e-004	0.0761	2.0000e-004	0.0763	0.0144	2.0000e-004	0.0146	0.0000	10.9370	10.9370	3.5400e-003	0.0000	11.0254

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	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108
Total	1.6200e-003	1.1200e-003	0.0134	4.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.0083	4.0083	1.0000e-004	0.0000	4.0108

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3.4 Construction - LRT Guideway & Stations - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2701	2.4682	3.0035	6.8600e-003		0.0913	0.0913		0.0873	0.0873	0.0000	589.3672	589.3672	0.1388	0.0000	592.8373
Total	0.2701	2.4682	3.0035	6.8600e-003		0.0913	0.0913		0.0873	0.0873	0.0000	589.3672	589.3672	0.1388	0.0000	592.8373

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	0.0109	0.3628	0.1132	1.2500e-003	0.0324	4.2000e-004	0.0328	9.3500e-003	4.0000e-004	9.7500e-003	0.0000	121.1701	121.1701	6.5300e-003	0.0000	121.3334
Worker	0.1385	0.0962	1.1502	3.8000e-003	0.4224	3.2300e-003	0.4257	0.1122	2.9700e-003	0.1152	0.0000	343.3793	343.3793	8.3600e-003	0.0000	343.5883
Total	0.1494	0.4590	1.2634	5.0500e-003	0.4548	3.6500e-003	0.4585	0.1216	3.3700e-003	0.1249	0.0000	464.5494	464.5494	0.0149	0.0000	464.9217

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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	0.0836	0.5717	3.8693	6.8600e-003		0.0104	0.0104		0.0104	0.0104	0.0000	589.3665	589.3665	0.1388	0.0000	592.8366
Total	0.0836	0.5717	3.8693	6.8600e-003		0.0104	0.0104		0.0104	0.0104	0.0000	589.3665	589.3665	0.1388	0.0000	592.8366

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	0.0109	0.3628	0.1132	1.2500e-003	0.0324	4.2000e-004	0.0328	9.3500e-003	4.0000e-004	9.7500e-003	0.0000	121.1701	121.1701	6.5300e-003	0.0000	121.3334
Worker	0.1385	0.0962	1.1502	3.8000e-003	0.4224	3.2300e-003	0.4257	0.1122	2.9700e-003	0.1152	0.0000	343.3793	343.3793	8.3600e-003	0.0000	343.5883
Total	0.1494	0.4590	1.2634	5.0500e-003	0.4548	3.6500e-003	0.4585	0.1216	3.3700e-003	0.1249	0.0000	464.5494	464.5494	0.0149	0.0000	464.9217

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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	0.2603	2.3786	3.0391	6.9600e-003		0.0832	0.0832		0.0794	0.0794	0.0000	598.5090	598.5090	0.1401	0.0000	602.0113
Total	0.2603	2.3786	3.0391	6.9600e-003		0.0832	0.0832		0.0794	0.0794	0.0000	598.5090	598.5090	0.1401	0.0000	602.0113

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	0.0107	0.3652	0.1120	1.2600e-003	0.0329	4.2000e-004	0.0333	9.4900e-003	4.0000e-004	9.8900e-003	0.0000	122.3855	122.3855	6.5400e-003	0.0000	122.5489
Worker	0.1338	0.0894	1.0841	3.7100e-003	0.4290	3.2100e-003	0.4322	0.1139	2.9600e-003	0.1169	0.0000	335.2208	335.2208	7.7400e-003	0.0000	335.4143
Total	0.1445	0.4546	1.1961	4.9700e-003	0.4619	3.6300e-003	0.4655	0.1234	3.3600e-003	0.1268	0.0000	457.6063	457.6063	0.0143	0.0000	457.9632

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3.4 Construction - LRT Guideway & Stations - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0850	0.5806	3.9296	6.9600e-003		0.0106	0.0106		0.0106	0.0106	0.0000	598.5083	598.5083	0.1401	0.0000	602.0105
Total	0.0850	0.5806	3.9296	6.9600e-003		0.0106	0.0106		0.0106	0.0106	0.0000	598.5083	598.5083	0.1401	0.0000	602.0105

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	0.0107	0.3652	0.1120	1.2600e-003	0.0329	4.2000e-004	0.0333	9.4900e-003	4.0000e-004	9.8900e-003	0.0000	122.3855	122.3855	6.5400e-003	0.0000	122.5489
Worker	0.1338	0.0894	1.0841	3.7100e-003	0.4290	3.2100e-003	0.4322	0.1139	2.9600e-003	0.1169	0.0000	335.2208	335.2208	7.7400e-003	0.0000	335.4143
Total	0.1445	0.4546	1.1961	4.9700e-003	0.4619	3.6300e-003	0.4655	0.1234	3.3600e-003	0.1268	0.0000	457.6063	457.6063	0.0143	0.0000	457.9632

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3.4 Construction - LRT Guideway & Stations - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0818	0.7473	0.9548	2.1900e-003		0.0262	0.0262		0.0250	0.0250	0.0000	188.0373	188.0373	0.0440	0.0000	189.1376
Total	0.0818	0.7473	0.9548	2.1900e-003		0.0262	0.0262		0.0250	0.0250	0.0000	188.0373	188.0373	0.0440	0.0000	189.1376

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	3.3000e-003	0.1137	0.0345	3.9000e-004	0.0103	1.3000e-004	0.0105	2.9800e-003	1.2000e-004	3.1000e-003	0.0000	38.2484	38.2484	2.0200e-003	0.0000	38.2990
Worker	0.0402	0.0259	0.3183	1.1200e-003	0.1348	9.7000e-004	0.1358	0.0358	9.0000e-004	0.0367	0.0000	101.6603	101.6603	2.2300e-003	0.0000	101.7160
Total	0.0435	0.1395	0.3527	1.5100e-003	0.1451	1.1000e-003	0.1462	0.0388	1.0200e-003	0.0398	0.0000	139.9087	139.9087	4.2500e-003	0.0000	140.0150

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3.4 Construction - LRT Guideway & Stations - 2026

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	0.1824	1.2346	2.1900e-003		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	188.0371	188.0371	0.0440	0.0000	189.1374
Total	0.0267	0.1824	1.2346	2.1900e-003		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	188.0371	188.0371	0.0440	0.0000	189.1374

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	3.3000e-003	0.1137	0.0345	3.9000e-004	0.0103	1.3000e-004	0.0105	2.9800e-003	1.2000e-004	3.1000e-003	0.0000	38.2484	38.2484	2.0200e-003	0.0000	38.2990
Worker	0.0402	0.0259	0.3183	1.1200e-003	0.1348	9.7000e-004	0.1358	0.0358	9.0000e-004	0.0367	0.0000	101.6603	101.6603	2.2300e-003	0.0000	101.7160
Total	0.0435	0.1395	0.3527	1.5100e-003	0.1451	1.1000e-003	0.1462	0.0388	1.0200e-003	0.0398	0.0000	139.9087	139.9087	4.2500e-003	0.0000	140.0150

4.0 Operational Detail - Mobile

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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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

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	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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	78.20	0.00	0
Enclosed Parking with Elevator	350.00	Space	1.90	140,000.00	0
Enclosed Parking with Elevator	500.00	Space	3.80	200,000.00	0
Enclosed Parking with Elevator	440.00	Space	4.70	176,000.00	0
Parking Lot	170.00	Space	1.60	68,000.00	0
Parking Lot	260.00	Space	2.50	104,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstructionPhase	NumDays	1,550.00	600.00
tblConstructionPhase	NumDays	1,550.00	300.00
tblConstructionPhase	NumDays	110.00	90.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblLandUse	LotAcreage	0.00	78.20
tblLandUse	LotAcreage	3.15	1.90
tblLandUse	LotAcreage	3.96	4.70
tblLandUse	LotAcreage	4.50	3.80
tblLandUse	LotAcreage	1.53	1.60
tblLandUse	LotAcreage	2.34	2.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	12,854.00	21,600.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	113.00	80.00
tblTripsAndVMT	VendorTripNumber	113.00	40.00

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tblTripsAndVMT	WorkerTripNumber	20.00	300.00
tblTripsAndVMT	WorkerTripNumber	25.00	100.00
tblTripsAndVMT	WorkerTripNumber	289.00	300.00
tblTripsAndVMT	WorkerTripNumber	289.00	100.00
tblTripsAndVMT	WorkerTripNumber	25.00	100.00

2.0 Emissions Summary

LACMTA West Santa Ana Branch Construction - At-Grade LRT - Los Angeles-South Coast County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.9228	9.7392	7.0834	0.0247	2.9079	0.2915	3.1993	0.7655	0.2724	1.0378	0.0000	2,276.6769	2,276.6769	0.3104	0.0000	2,284.4368
2023	1.1077	9.5751	9.9169	0.0259	2.1532	0.3501	2.5032	0.8883	0.3284	1.2166	0.0000	2,311.1317	2,311.1317	0.3731	0.0000	2,320.4592
2024	0.6760	5.3916	7.4461	0.0168	0.5273	0.1990	0.7262	0.1417	0.1884	0.3301	0.0000	1,490.9539	1,490.9539	0.2170	0.0000	1,496.3798
Maximum	1.1077	9.7392	9.9169	0.0259	2.9079	0.3501	3.1993	0.8883	0.3284	1.2166	0.0000	2,311.1317	2,311.1317	0.3731	0.0000	2,320.4592

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.4143	4.0892	8.0185	0.0247	1.5877	0.0285	1.6162	0.4206	0.0278	0.4484	0.0000	2,276.6759	2,276.6759	0.3104	0.0000	2,284.4358
2023	0.4600	2.6357	11.3264	0.0259	1.3288	0.0300	1.3587	0.4780	0.0295	0.5075	0.0000	2,311.1302	2,311.1302	0.3731	0.0000	2,320.4576
2024	0.2994	1.7173	8.1512	0.0168	0.5273	0.0194	0.5467	0.1417	0.0191	0.1607	0.0000	1,490.9529	1,490.9529	0.2170	0.0000	1,496.3788
Maximum	0.4600	4.0892	11.3264	0.0259	1.5877	0.0300	1.6162	0.4780	0.0295	0.5075	0.0000	2,311.1302	2,311.1302	0.3731	0.0000	2,320.4576

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	ROG	NOx	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	56.63	65.83	-12.47	0.00	38.38	90.73	45.22	42.06	90.32	56.80	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	2.6463	1.3920
2	5-7-2022	8-6-2022	2.7217	1.4251
3	8-7-2022	11-6-2022	3.1292	1.0411
4	11-7-2022	2-6-2023	3.1857	0.8443
5	2-7-2023	5-6-2023	2.8205	0.7446
6	5-7-2023	8-6-2023	2.9095	0.7637
7	8-7-2023	11-6-2023	2.3875	0.7861
8	11-7-2023	2-6-2024	2.2735	0.7957
9	2-7-2024	5-6-2024	2.2763	0.7913
10	5-7-2024	8-6-2024	2.8595	0.8841
		Highest	3.1857	1.4251

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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	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1,717.6471	1,717.6471	0.0406	8.3900e-003	1,721.1624
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	0.0561	2.0000e-004	0.0219	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	8.0000e-005	8.0000e-005	0.0000	1,717.6898	1,717.6898	0.0407	8.3900e-003	1,721.2079

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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	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1,717.6471	1,717.6471	0.0406	8.3900e-003	1,721.1624
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	0.0561	2.0000e-004	0.0219	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	8.0000e-005	8.0000e-005	0.0000	1,717.6898	1,717.6898	0.0407	8.3900e-003	1,721.2079

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Guideway/Parking - Demolition	Demolition	2/7/2022	9/3/2022	6	180	
2	Guideway - Track bed preparation	Site Preparation	9/5/2022	8/19/2023	6	300	
3	Stations - Building Construction	Building Construction	9/5/2022	8/3/2024	6	600	
4	Guideway - Track slab construction	Building Construction	8/21/2023	8/3/2024	6	300	
5	Paving - Parking Lots	Paving	4/22/2024	8/3/2024	6	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 14.5

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

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Guideway/Parking - Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Guideway/Parking - Demolition	Excavators	2	8.00	158	0.38
Guideway/Parking - Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Guideway/Parking - Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Guideway - Track bed preparation	Excavators	2	8.00	158	0.38
Guideway - Track bed preparation	Graders	2	8.00	187	0.41
Guideway - Track bed preparation	Rollers	2	8.00	80	0.38
Guideway - Track bed preparation	Rubber Tired Dozers	2	8.00	247	0.40
Guideway - Track bed preparation	Rubber Tired Loaders	2	8.00	203	0.36
Stations - Building Construction	Cranes	2	8.00	231	0.29
Stations - Building Construction	Generator Sets	2	8.00	84	0.74
Stations - Building Construction	Rough Terrain Forklifts	2	8.00	100	0.40
Stations - Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Stations - Building Construction	Welders	2	8.00	46	0.45
Guideway - Track slab construction	Generator Sets	2	8.00	84	0.74
Guideway - Track slab construction	Other Construction Equipment	2	8.00	172	0.42
Guideway - Track slab construction	Rough Terrain Forklifts	2	8.00	100	0.40
Guideway - Track slab construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Guideway - Track slab construction	Welders	2	8.00	46	0.45
Paving - Parking Lots	Air Compressors	2	8.00	78	0.48
Paving - Parking Lots	Other Material Handling Equipment	2	8.00	168	0.40
Paving - Parking Lots	Pavers	2	8.00	130	0.42
Paving - Parking Lots	Paving Equipment	2	8.00	132	0.36
Paving - Parking Lots	Rollers	2	8.00	80	0.38

Trips and VMT

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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
Guideway/Parking - Demolition	8	300.00	0.00	21,600.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Guideway - Track bed preparation	10	100.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Stations - Building Construction	10	300.00	80.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Guideway - Track slab construction	10	100.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Parking Lots	10	100.00	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
- Reduce Vehicle Speed on Unpaved Roads

3.2 Guideway/Parking - Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3909	0.0000	1.3909	0.2106	0.0000	0.2106	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3040	2.9514	2.1659	4.7200e-003		0.1359	0.1359		0.1272	0.1272	0.0000	412.3775	412.3775	0.1074	0.0000	415.0612
Total	0.3040	2.9514	2.1659	4.7200e-003	1.3909	0.1359	1.5268	0.2106	0.1272	0.3378	0.0000	412.3775	412.3775	0.1074	0.0000	415.0612

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3.2 Guideway/Parking - Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0866	2.7748	0.6894	8.2500e-003	0.1856	7.7800e-003	0.1934	0.0510	7.4400e-003	0.0584	0.0000	813.4897	813.4897	0.0563	0.0000	814.8961
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	0.1089	0.0817	0.9408	2.8500e-003	0.2959	2.3600e-003	0.2982	0.0786	2.1800e-003	0.0808	0.0000	257.6218	257.6218	7.0900e-003	0.0000	257.7992
Total	0.1955	2.8565	1.6301	0.0111	0.4815	0.0101	0.4916	0.1296	9.6200e-003	0.1392	0.0000	1,071.1115	1,071.1115	0.0634	0.0000	1,072.6953

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					0.5425	0.0000	0.5425	0.0821	0.0000	0.0821	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0554	0.2402	2.6003	4.7200e-003		7.3900e-003	7.3900e-003		7.3900e-003	7.3900e-003	0.0000	412.3770	412.3770	0.1074	0.0000	415.0607
Total	0.0554	0.2402	2.6003	4.7200e-003	0.5425	7.3900e-003	0.5499	0.0821	7.3900e-003	0.0895	0.0000	412.3770	412.3770	0.1074	0.0000	415.0607

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3.2 Guideway/Parking - Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0866	2.7748	0.6894	8.2500e-003	0.1856	7.7800e-003	0.1934	0.0510	7.4400e-003	0.0584	0.0000	813.4897	813.4897	0.0563	0.0000	814.8961
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	0.1089	0.0817	0.9408	2.8500e-003	0.2959	2.3600e-003	0.2982	0.0786	2.1800e-003	0.0808	0.0000	257.6218	257.6218	7.0900e-003	0.0000	257.7992
Total	0.1955	2.8565	1.6301	0.0111	0.4815	0.0101	0.4916	0.1296	9.6200e-003	0.1392	0.0000	1,071.1115	1,071.1115	0.0634	0.0000	1,072.6953

3.3 Guideway - Track bed preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7733	0.0000	0.7733	0.3548	0.0000	0.3548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1950	2.0991	1.2190	2.9800e-003		0.0889	0.0889		0.0818	0.0818	0.0000	261.6919	261.6919	0.0846	0.0000	263.8078
Total	0.1950	2.0991	1.2190	2.9800e-003	0.7733	0.0889	0.8622	0.3548	0.0818	0.4366	0.0000	261.6919	261.6919	0.0846	0.0000	263.8078

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3.3 Guideway - Track bed preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9500e-003	0.1913	0.0517	5.1000e-004	0.0129	3.6000e-004	0.0132	3.7100e-003	3.4000e-004	4.0500e-003	0.0000	49.8436	49.8436	2.9800e-003	0.0000	49.9181
Worker	0.0206	0.0154	0.1777	5.4000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.1000e-004	0.0153	0.0000	48.6619	48.6619	1.3400e-003	0.0000	48.6954
Total	0.0265	0.2067	0.2294	1.0500e-003	0.0687	8.1000e-004	0.0695	0.0186	7.5000e-004	0.0193	0.0000	98.5055	98.5055	4.3200e-003	0.0000	98.6135

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					0.3016	0.0000	0.3016	0.1384	0.0000	0.1384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0366	0.1586	1.5857	2.9800e-003		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	261.6916	261.6916	0.0846	0.0000	263.8075
Total	0.0366	0.1586	1.5857	2.9800e-003	0.3016	4.8800e-003	0.3065	0.1384	4.8800e-003	0.1433	0.0000	261.6916	261.6916	0.0846	0.0000	263.8075

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3.3 Guideway - Track bed preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9500e-003	0.1913	0.0517	5.1000e-004	0.0129	3.6000e-004	0.0132	3.7100e-003	3.4000e-004	4.0500e-003	0.0000	49.8436	49.8436	2.9800e-003	0.0000	49.9181
Worker	0.0206	0.0154	0.1777	5.4000e-004	0.0559	4.5000e-004	0.0563	0.0148	4.1000e-004	0.0153	0.0000	48.6619	48.6619	1.3400e-003	0.0000	48.6954
Total	0.0265	0.2067	0.2294	1.0500e-003	0.0687	8.1000e-004	0.0695	0.0186	7.5000e-004	0.0193	0.0000	98.5055	98.5055	4.3200e-003	0.0000	98.6135

3.3 Guideway - Track bed preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3515	0.0000	1.3515	0.6726	0.0000	0.6726	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3328	3.4835	2.2609	5.7800e-003		0.1435	0.1435		0.1321	0.1321	0.0000	507.9063	507.9063	0.1643	0.0000	512.0129
Total	0.3328	3.4835	2.2609	5.7800e-003	1.3515	0.1435	1.4950	0.6726	0.1321	0.8047	0.0000	507.9063	507.9063	0.1643	0.0000	512.0129

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3.3 Guideway - Track bed preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5700e-003	0.2805	0.0899	9.6000e-004	0.0250	3.3000e-004	0.0253	7.2000e-003	3.1000e-004	7.5100e-003	0.0000	93.7263	93.7263	5.1100e-003	0.0000	93.8539
Worker	0.0376	0.0271	0.3172	1.0100e-003	0.1085	8.4000e-004	0.1093	0.0288	7.7000e-004	0.0296	0.0000	91.0047	91.0047	2.3400e-003	0.0000	91.0633
Total	0.0461	0.3076	0.4071	1.9700e-003	0.1334	1.1700e-003	0.1346	0.0360	1.0800e-003	0.0371	0.0000	184.7310	184.7310	7.4500e-003	0.0000	184.9172

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					0.5271	0.0000	0.5271	0.2623	0.0000	0.2623	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0710	0.3078	3.0781	5.7800e-003		9.4700e-003	9.4700e-003		9.4700e-003	9.4700e-003	0.0000	507.9056	507.9056	0.1643	0.0000	512.0123
Total	0.0710	0.3078	3.0781	5.7800e-003	0.5271	9.4700e-003	0.5365	0.2623	9.4700e-003	0.2718	0.0000	507.9056	507.9056	0.1643	0.0000	512.0123

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3.3 Guideway - Track bed preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5700e-003	0.2805	0.0899	9.6000e-004	0.0250	3.3000e-004	0.0253	7.2000e-003	3.1000e-004	7.5100e-003	0.0000	93.7263	93.7263	5.1100e-003	0.0000	93.8539
Worker	0.0376	0.0271	0.3172	1.0100e-003	0.1085	8.4000e-004	0.1093	0.0288	7.7000e-004	0.0296	0.0000	91.0047	91.0047	2.3400e-003	0.0000	91.0633
Total	0.0461	0.3076	0.4071	1.9700e-003	0.1334	1.1700e-003	0.1346	0.0360	1.0800e-003	0.0371	0.0000	184.7310	184.7310	7.4500e-003	0.0000	184.9172

3.4 Stations - Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1281	1.1966	1.2026	2.1900e-003		0.0537	0.0537		0.0511	0.0511	0.0000	187.3176	187.3176	0.0408	0.0000	188.3367
Total	0.1281	1.1966	1.2026	2.1900e-003		0.0537	0.0537		0.0511	0.0511	0.0000	187.3176	187.3176	0.0408	0.0000	188.3367

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3.4 Stations - Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0119	0.3826	0.1033	1.0300e-003	0.0257	7.2000e-004	0.0264	7.4200e-003	6.9000e-004	8.1000e-003	0.0000	99.6873	99.6873	5.9500e-003	0.0000	99.8361
Worker	0.0617	0.0463	0.5331	1.6100e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0458	0.0000	145.9857	145.9857	4.0200e-003	0.0000	146.0862
Total	0.0736	0.4288	0.6364	2.6400e-003	0.1934	2.0600e-003	0.1954	0.0520	1.9200e-003	0.0539	0.0000	245.6729	245.6729	9.9700e-003	0.0000	245.9223

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	0.0266	0.1983	1.3367	2.1900e-003		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	187.3174	187.3174	0.0408	0.0000	188.3364
Total	0.0266	0.1983	1.3367	2.1900e-003		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	187.3174	187.3174	0.0408	0.0000	188.3364

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3.4 Stations - Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0119	0.3826	0.1033	1.0300e-003	0.0257	7.2000e-004	0.0264	7.4200e-003	6.9000e-004	8.1000e-003	0.0000	99.6873	99.6873	5.9500e-003	0.0000	99.8361
Worker	0.0617	0.0463	0.5331	1.6100e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0458	0.0000	145.9857	145.9857	4.0200e-003	0.0000	146.0862
Total	0.0736	0.4288	0.6364	2.6400e-003	0.1934	2.0600e-003	0.1954	0.0520	1.9200e-003	0.0539	0.0000	245.6729	245.6729	9.9700e-003	0.0000	245.9223

3.4 Stations - Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3647	3.3967	3.6505	6.7000e-003		0.1446	0.1446		0.1376	0.1376	0.0000	573.0777	573.0777	0.1235	0.0000	576.1647
Total	0.3647	3.3967	3.6505	6.7000e-003		0.1446	0.1446		0.1376	0.1376	0.0000	573.0777	573.0777	0.1235	0.0000	576.1647

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3.4 Stations - Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0270	0.8841	0.2835	3.0400e-003	0.0786	1.0300e-003	0.0797	0.0227	9.9000e-004	0.0237	0.0000	295.3797	295.3797	0.0161	0.0000	295.7821
Worker	0.1776	0.1281	1.4995	4.7600e-003	0.5128	3.9800e-003	0.5168	0.1362	3.6600e-003	0.1399	0.0000	430.2041	430.2041	0.0111	0.0000	430.4810
Total	0.2046	1.0122	1.7830	7.8000e-003	0.5915	5.0100e-003	0.5965	0.1589	4.6500e-003	0.1636	0.0000	725.5838	725.5838	0.0272	0.0000	726.2630

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	0.0814	0.6066	4.0887	6.7000e-003		9.9400e-003	9.9400e-003		9.9400e-003	9.9400e-003	0.0000	573.0770	573.0770	0.1235	0.0000	576.1641
Total	0.0814	0.6066	4.0887	6.7000e-003		9.9400e-003	9.9400e-003		9.9400e-003	9.9400e-003	0.0000	573.0770	573.0770	0.1235	0.0000	576.1641

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3.4 Stations - Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0270	0.8841	0.2835	3.0400e-003	0.0786	1.0300e-003	0.0797	0.0227	9.9000e-004	0.0237	0.0000	295.3797	295.3797	0.0161	0.0000	295.7821
Worker	0.1776	0.1281	1.4995	4.7600e-003	0.5128	3.9800e-003	0.5168	0.1362	3.6600e-003	0.1399	0.0000	430.2041	430.2041	0.0111	0.0000	430.4810
Total	0.2046	1.0122	1.7830	7.8000e-003	0.5915	5.0100e-003	0.5965	0.1589	4.6500e-003	0.1636	0.0000	725.5838	725.5838	0.0272	0.0000	726.2630

3.4 Stations - Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2044	1.9024	2.1626	3.9900e-003		0.0766	0.0766		0.0728	0.0728	0.0000	341.6612	341.6612	0.0730	0.0000	343.4863
Total	0.2044	1.9024	2.1626	3.9900e-003		0.0766	0.0766		0.0728	0.0728	0.0000	341.6612	341.6612	0.0730	0.0000	343.4863

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3.4 Stations - Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.5251	0.1638	1.8000e-003	0.0469	6.1000e-004	0.0475	0.0135	5.8000e-004	0.0141	0.0000	175.3902	175.3902	9.4500e-003	0.0000	175.6266
Worker	0.1003	0.0696	0.8325	2.7500e-003	0.3057	2.3400e-003	0.3081	0.0812	2.1500e-003	0.0834	0.0000	248.5158	248.5158	6.0500e-003	0.0000	248.6671
Total	0.1160	0.5947	0.9963	4.5500e-003	0.3526	2.9500e-003	0.3555	0.0947	2.7300e-003	0.0975	0.0000	423.9060	423.9060	0.0155	0.0000	424.2936

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	0.0485	0.3616	2.4375	3.9900e-003		5.9200e-003	5.9200e-003		5.9200e-003	5.9200e-003	0.0000	341.6608	341.6608	0.0730	0.0000	343.4859
Total	0.0485	0.3616	2.4375	3.9900e-003		5.9200e-003	5.9200e-003		5.9200e-003	5.9200e-003	0.0000	341.6608	341.6608	0.0730	0.0000	343.4859

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3.4 Stations - Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.5251	0.1638	1.8000e-003	0.0469	6.1000e-004	0.0475	0.0135	5.8000e-004	0.0141	0.0000	175.3902	175.3902	9.4500e-003	0.0000	175.6266
Worker	0.1003	0.0696	0.8325	2.7500e-003	0.3057	2.3400e-003	0.3081	0.0812	2.1500e-003	0.0834	0.0000	248.5158	248.5158	6.0500e-003	0.0000	248.6671
Total	0.1160	0.5947	0.9963	4.5500e-003	0.3526	2.9500e-003	0.3555	0.0947	2.7300e-003	0.0975	0.0000	423.9060	423.9060	0.0155	0.0000	424.2936

3.5 Guideway - Track slab construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1329	1.1980	1.5810	2.4900e-003		0.0551	0.0551		0.0523	0.0523	0.0000	213.4729	213.4729	0.0464	0.0000	214.6338
Total	0.1329	1.1980	1.5810	2.4900e-003		0.0551	0.0551		0.0523	0.0523	0.0000	213.4729	213.4729	0.0464	0.0000	214.6338

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3.5 Guideway - Track slab construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9300e-003	0.1615	0.0518	5.6000e-004	0.0144	1.9000e-004	0.0146	4.1500e-003	1.8000e-004	4.3300e-003	0.0000	53.9636	53.9636	2.9400e-003	0.0000	54.0371
Worker	0.0216	0.0156	0.1826	5.8000e-004	0.0625	4.8000e-004	0.0630	0.0166	4.5000e-004	0.0170	0.0000	52.3967	52.3967	1.3500e-003	0.0000	52.4304
Total	0.0266	0.1771	0.2344	1.1400e-003	0.0768	6.7000e-004	0.0775	0.0207	6.3000e-004	0.0214	0.0000	106.3603	106.3603	4.2900e-003	0.0000	106.4675

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	0.0304	0.2244	1.7350	2.4900e-003		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	213.4726	213.4726	0.0464	0.0000	214.6336
Total	0.0304	0.2244	1.7350	2.4900e-003		3.7200e-003	3.7200e-003		3.7200e-003	3.7200e-003	0.0000	213.4726	213.4726	0.0464	0.0000	214.6336

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3.5 Guideway - Track slab construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9300e-003	0.1615	0.0518	5.6000e-004	0.0144	1.9000e-004	0.0146	4.1500e-003	1.8000e-004	4.3300e-003	0.0000	53.9636	53.9636	2.9400e-003	0.0000	54.0371
Worker	0.0216	0.0156	0.1826	5.8000e-004	0.0625	4.8000e-004	0.0630	0.0166	4.5000e-004	0.0170	0.0000	52.3967	52.3967	1.3500e-003	0.0000	52.4304
Total	0.0266	0.1771	0.2344	1.1400e-003	0.0768	6.7000e-004	0.0775	0.0207	6.3000e-004	0.0214	0.0000	106.3603	106.3603	4.2900e-003	0.0000	106.4675

3.5 Guideway - Track slab construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2044	1.8479	2.5789	4.0700e-003		0.0803	0.0803		0.0762	0.0762	0.0000	348.3157	348.3157	0.0752	0.0000	350.1946
Total	0.2044	1.8479	2.5789	4.0700e-003		0.0803	0.0803		0.0762	0.0762	0.0000	348.3157	348.3157	0.0752	0.0000	350.1946

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3.5 Guideway - Track slab construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8500e-003	0.2625	0.0819	9.0000e-004	0.0234	3.0000e-004	0.0237	6.7600e-003	2.9000e-004	7.0500e-003	0.0000	87.6951	87.6951	4.7300e-003	0.0000	87.8133
Worker	0.0334	0.0232	0.2775	9.2000e-004	0.1019	7.8000e-004	0.1027	0.0271	7.2000e-004	0.0278	0.0000	82.8386	82.8386	2.0200e-003	0.0000	82.8890
Total	0.0413	0.2857	0.3594	1.8200e-003	0.1253	1.0800e-003	0.1264	0.0338	1.0100e-003	0.0348	0.0000	170.5337	170.5337	6.7500e-003	0.0000	170.7023

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	0.0495	0.3661	2.8309	4.0700e-003		6.0600e-003	6.0600e-003		6.0600e-003	6.0600e-003	0.0000	348.3153	348.3153	0.0752	0.0000	350.1942
Total	0.0495	0.3661	2.8309	4.0700e-003		6.0600e-003	6.0600e-003		6.0600e-003	6.0600e-003	0.0000	348.3153	348.3153	0.0752	0.0000	350.1942

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3.5 Guideway - Track slab construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8500e-003	0.2625	0.0819	9.0000e-004	0.0234	3.0000e-004	0.0237	6.7600e-003	2.9000e-004	7.0500e-003	0.0000	87.6951	87.6951	4.7300e-003	0.0000	87.8133
Worker	0.0334	0.0232	0.2775	9.2000e-004	0.1019	7.8000e-004	0.1027	0.0271	7.2000e-004	0.0278	0.0000	82.8386	82.8386	2.0200e-003	0.0000	82.8890
Total	0.0413	0.2857	0.3594	1.8200e-003	0.1253	1.0800e-003	0.1264	0.0338	1.0100e-003	0.0348	0.0000	170.5337	170.5337	6.7500e-003	0.0000	170.7023

3.6 Paving - Parking Lots - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0884	0.7497	1.2147	1.9000e-003		0.0378	0.0378		0.0353	0.0353	0.0000	166.4542	166.4542	0.0457	0.0000	167.5954
Paving	5.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0938	0.7497	1.2147	1.9000e-003		0.0378	0.0378		0.0353	0.0353	0.0000	166.4542	166.4542	0.0457	0.0000	167.5954

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3.6 Paving - Parking Lots - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0162	0.0112	0.1343	4.4000e-004	0.0493	3.8000e-004	0.0497	0.0131	3.5000e-004	0.0134	0.0000	40.0832	40.0832	9.8000e-004	0.0000	40.1076
Total	0.0162	0.0112	0.1343	4.4000e-004	0.0493	3.8000e-004	0.0497	0.0131	3.5000e-004	0.0134	0.0000	40.0832	40.0832	9.8000e-004	0.0000	40.1076

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	0.0226	0.0979	1.3929	1.9000e-003		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	166.4540	166.4540	0.0457	0.0000	167.5952
Paving	5.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0280	0.0979	1.3929	1.9000e-003		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	166.4540	166.4540	0.0457	0.0000	167.5952

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3.6 Paving - Parking Lots - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0162	0.0112	0.1343	4.4000e-004	0.0493	3.8000e-004	0.0497	0.0131	3.5000e-004	0.0134	0.0000	40.0832	40.0832	9.8000e-004	0.0000	40.1076
Total	0.0162	0.0112	0.1343	4.4000e-004	0.0493	3.8000e-004	0.0497	0.0131	3.5000e-004	0.0134	0.0000	40.0832	40.0832	9.8000e-004	0.0000	40.1076

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

LACMTA West Santa Ana Branch Construction - At-Grade LRT - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

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Land Use	Miles			Trip %			Trip Purpose %		
	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
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Parking Lot	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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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	1.03136e+006	574.4279	0.0136	2.8100e-003	575.6035
Enclosed Parking with Elevator	1.172e+006	652.7589	0.0154	3.1900e-003	654.0949
Enclosed Parking with Elevator	820400	456.9312	0.0108	2.2300e-003	457.8664
Parking Lot	23800	13.2557	3.1000e-004	6.0000e-005	13.2828
Parking Lot	36400	20.2734	4.8000e-004	1.0000e-004	20.3149
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		1,717.6471	0.0406	8.3900e-003	1,721.1624

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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	1.03136e+006	574.4279	0.0136	2.8100e-003	575.6035
Enclosed Parking with Elevator	1.172e+006	652.7589	0.0154	3.1900e-003	654.0949
Enclosed Parking with Elevator	820400	456.9312	0.0108	2.2300e-003	457.8664
Parking Lot	23800	13.2557	3.1000e-004	6.0000e-005	13.2828
Parking Lot	36400	20.2734	4.8000e-004	1.0000e-004	20.3149
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		1,717.6471	0.0406	8.3900e-003	1,721.1624

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455
Unmitigated	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455

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	9.5700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0445					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0200e-003	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455
Total	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455

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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	9.5700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0445					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0200e-003	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455
Total	0.0561	2.0000e-004	0.0219	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.0427	0.0427	1.1000e-004	0.0000	0.0455

7.0 Water Detail

7.1 Mitigation Measures Water

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	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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	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**

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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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

LACMTA West Santa Ana Branch Construction - At-Grade LRT - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use

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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

LACMTA West Santa Ana Branch Construction - Aerial LRT
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	24.85	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
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

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

Project Characteristics -

Land Use - 4.1 miles aerial x 50 foot width = 24.85 acres

Construction Phase - LACMTA Construction Methods Report (October 2018)

Maximum length of construction approximately 30 months (2.5 years)

Off-road Equipment - LACMTA Construction Methods Report

Off-road Equipment - LACMTA Construction Methods Report

Off-road Equipment - LACMTA Construction Methods Report (October 2018)

Off-road Equipment - LACMTA Construction Methods Report

Off-road Equipment - LACMTA Construction Methods Report

Trips and VMT - Hauling Trips accounted for in G&E modeling.
20 daily material delivery trips accounted for.

Vehicle Trips -

Construction Off-road Equipment Mitigation - LACMTA Green Construction Policy (2011)

Grading -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

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	370.00	390.00
tblConstructionPhase	NumDays	370.00	390.00
tblConstructionPhase	NumDays	10.00	390.00
tblConstructionPhase	NumDays	10.00	390.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	8/4/2023	8/3/2024
tblConstructionPhase	PhaseEndDate	1/3/2025	11/1/2024
tblConstructionPhase	PhaseEndDate	2/18/2022	5/6/2023
tblConstructionPhase	PhaseEndDate	3/4/2022	5/6/2023
tblConstructionPhase	PhaseStartDate	3/5/2022	5/8/2023
tblConstructionPhase	PhaseStartDate	8/5/2023	5/8/2023
tblConstructionPhase	PhaseStartDate	2/19/2022	2/7/2022
tblLandUse	LotAcreage	0.00	24.85
tblOffRoadEquipment	LoadFactor	0.37	0.37

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tblOffRoadEquipment	OffRoadEquipmentType			Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType			Excavators
tblOffRoadEquipment	OffRoadEquipmentType			Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType			Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType			Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType			Excavators
tblOffRoadEquipment	OffRoadEquipmentType			Rollers
tblOffRoadEquipment	OffRoadEquipmentType			Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType			Graders
tblOffRoadEquipment	OffRoadEquipmentType			Rollers
tblOffRoadEquipment	OffRoadEquipmentType			Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType			Graders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		3.00	2.00
tblOffRoadEquipment	UsageHours		7.00	8.00
tblOffRoadEquipment	UsageHours		7.00	8.00
tblOffRoadEquipment	UsageHours		7.00	8.00
tblTripsAndVMT	VendorTripNumber		0.00	20.00
tblTripsAndVMT	VendorTripNumber		0.00	20.00
tblTripsAndVMT	WorkerTripNumber		13.00	150.00
tblTripsAndVMT	WorkerTripNumber		13.00	150.00
tblTripsAndVMT	WorkerTripNumber		0.00	150.00
tblTripsAndVMT	WorkerTripNumber		0.00	150.00

2.0 Emissions Summary

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.7099	5.9313	4.8439	0.0127	2.3686	0.2494	2.6180	1.0789	0.2295	1.3084	0.0000	1,127.1087	1,127.1087	0.2451	0.0000	1,133.2364
2023	0.5712	4.3453	4.8243	0.0129	1.3656	0.1685	1.5342	0.5154	0.1558	0.6712	0.0000	1,147.2803	1,147.2803	0.2193	0.0000	1,152.7630
2024	0.3383	2.4215	3.2026	8.5000e-003	0.3593	0.0864	0.4456	0.0960	0.0803	0.1763	0.0000	755.4226	755.4226	0.1282	0.0000	758.6286
Maximum	0.7099	5.9313	4.8439	0.0129	2.3686	0.2494	2.6180	1.0789	0.2295	1.3084	0.0000	1,147.2803	1,147.2803	0.2451	0.0000	1,152.7630

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2718	0.5664	5.8578	0.0127	1.2065	0.0172	1.2237	0.4959	0.0169	0.5128	0.0000	1,127.1078	1,127.1078	0.2451	0.0000	1,133.2356
2023	0.2702	0.9328	5.7694	0.0129	0.8428	0.0161	0.8589	0.2837	0.0158	0.2996	0.0000	1,147.2796	1,147.2796	0.2193	0.0000	1,152.7622
2024	0.1762	0.7939	3.6907	8.5000e-003	0.3593	0.0100	0.3693	0.0960	9.7800e-003	0.1058	0.0000	755.4222	755.4222	0.1282	0.0000	758.6282
Maximum	0.2718	0.9328	5.8578	0.0129	1.2065	0.0172	1.2237	0.4959	0.0169	0.5128	0.0000	1,147.2796	1,147.2796	0.2451	0.0000	1,152.7622

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	55.65	81.94	-19.01	0.00	41.16	91.41	46.67	48.20	90.87	57.41	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	1.7973	0.2274
2	5-7-2022	8-6-2022	1.8526	0.2298
3	8-7-2022	11-6-2022	1.8561	0.2334
4	11-7-2022	2-6-2023	1.7568	0.2361
5	2-7-2023	5-6-2023	1.5459	0.2215
6	5-7-2023	8-6-2023	1.0385	0.3356
7	8-7-2023	11-6-2023	1.0529	0.3422
8	11-7-2023	2-6-2024	1.0336	0.3444
9	2-7-2024	5-6-2024	0.9741	0.3311
10	5-7-2024	8-6-2024	0.9727	0.3289
11	8-7-2024	9-30-2024	0.2464	0.1017
		Highest	1.8561	0.3444

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Stations - Foundation Prep	Site Preparation	2/7/2022	5/6/2023	6	390	
2	Guideway - Foundation Prep	Site Preparation	2/7/2022	5/6/2023	6	390	
3	Guideway - Column Construction	Building Construction	5/8/2023	8/3/2024	6	390	
4	Stations - Platform Construction	Building Construction	5/8/2023	11/1/2024	5	390	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

LACMTA West Santa Ana Branch Construction - Aerial LRT - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Guideway - Column Construction	Bore/Drill Rigs	1	8.00	221	0.50
Guideway - Column Construction	Other Construction Equipment	1	8.00	172	0.42
Stations - Platform Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Stations - Foundation Prep	Rubber Tired Dozers	1	8.00	247	0.40
Guideway - Foundation Prep	Excavators	1	8.00	158	0.38
Stations - Foundation Prep	Excavators	1	8.00	158	0.38
Stations - Foundation Prep	Rollers	1	8.00	80	0.38
Stations - Foundation Prep	Rubber Tired Loaders	1	8.00	203	0.36
Stations - Foundation Prep	Graders	1	8.00	187	0.41
Guideway - Foundation Prep	Rubber Tired Dozers	1	8.00	247	0.40
Guideway - Column Construction	Rough Terrain Forklifts	2	8.00	100	0.40
Guideway - Foundation Prep	Rollers	1	8.00	80	0.38
Guideway - Column Construction	Cranes	1	8.00	231	0.29
Guideway - Foundation Prep	Rubber Tired Loaders	1	8.00	203	0.36
Guideway - Foundation Prep	Graders	1	8.00	187	0.41
Stations - Platform Construction	Cranes	1	8.00	231	0.29
Stations - Platform Construction	Welders	2	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
Stations - Foundation Prep	5	150.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Guideway - Foundation Prep	5	150.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Guideway - Column Construction	5	150.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Stations - Platform Construction	5	150.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Stations - Foundation Prep - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9525	0.0000	0.9525	0.4779	0.0000	0.4779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2696	2.9017	1.6850	4.1200e-003		0.1229	0.1229		0.1130	0.1130	0.0000	361.7506	361.7506	0.1170	0.0000	364.6755
Total	0.2696	2.9017	1.6850	4.1200e-003	0.9525	0.1229	1.0754	0.4779	0.1130	0.5910	0.0000	361.7506	361.7506	0.1170	0.0000	364.6755

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3.2 Stations - Foundation Prep - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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					0.3715	0.0000	0.3715	0.1864	0.0000	0.1864	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0506	0.2192	2.1920	4.1200e-003		6.7400e-003	6.7400e-003		6.7400e-003	6.7400e-003	0.0000	361.7502	361.7502	0.1170	0.0000	364.6751
Total	0.0506	0.2192	2.1920	4.1200e-003	0.3715	6.7400e-003	0.3782	0.1864	6.7400e-003	0.1931	0.0000	361.7502	361.7502	0.1170	0.0000	364.6751

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3.2 Stations - Foundation Prep - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

3.2 Stations - Foundation Prep - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4286	0.0000	0.4286	0.1899	0.0000	0.1899	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0908	0.9501	0.6166	1.5800e-003		0.0392	0.0392		0.0360	0.0360	0.0000	138.5199	138.5199	0.0448	0.0000	139.6399
Total	0.0908	0.9501	0.6166	1.5800e-003	0.4286	0.0392	0.4677	0.1899	0.0360	0.2259	0.0000	138.5199	138.5199	0.0448	0.0000	139.6399

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3.2 Stations - Foundation Prep - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063
Total	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063

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					0.1672	0.0000	0.1672	0.0741	0.0000	0.0741	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.0839	0.8395	1.5800e-003		2.5800e-003	2.5800e-003		2.5800e-003	2.5800e-003	0.0000	138.5197	138.5197	0.0448	0.0000	139.6397
Total	0.0194	0.0839	0.8395	1.5800e-003	0.1672	2.5800e-003	0.1697	0.0741	2.5800e-003	0.0767	0.0000	138.5197	138.5197	0.0448	0.0000	139.6397

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3.2 Stations - Foundation Prep - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063
Total	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063

3.3 Guideway - Foundation Prep - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.9525	0.0000	0.9525	0.4779	0.0000	0.4779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2696	2.9017	1.6850	4.1200e-003		0.1229	0.1229		0.1130	0.1130	0.0000	361.7506	361.7506	0.1170	0.0000	364.6755
Total	0.2696	2.9017	1.6850	4.1200e-003	0.9525	0.1229	1.0754	0.4779	0.1130	0.5910	0.0000	361.7506	361.7506	0.1170	0.0000	364.6755

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3.3 Guideway - Foundation Prep - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

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					0.3715	0.0000	0.3715	0.1864	0.0000	0.1864	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0506	0.2192	2.1920	4.1200e-003		6.7400e-003	6.7400e-003		6.7400e-003	6.7400e-003	0.0000	361.7502	361.7502	0.1170	0.0000	364.6751
Total	0.0506	0.2192	2.1920	4.1200e-003	0.3715	6.7400e-003	0.3782	0.1864	6.7400e-003	0.1931	0.0000	361.7502	361.7502	0.1170	0.0000	364.6751

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3.3 Guideway - Foundation Prep - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427
Total	0.0853	0.0640	0.7369	2.2300e-003	0.2318	1.8500e-003	0.2336	0.0616	1.7000e-003	0.0633	0.0000	201.8037	201.8037	5.5600e-003	0.0000	201.9427

3.3 Guideway - Foundation Prep - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4286	0.0000	0.4286	0.1899	0.0000	0.1899	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0908	0.9501	0.6166	1.5800e-003		0.0392	0.0392		0.0360	0.0360	0.0000	138.5199	138.5199	0.0448	0.0000	139.6399
Total	0.0908	0.9501	0.6166	1.5800e-003	0.4286	0.0392	0.4677	0.1899	0.0360	0.2259	0.0000	138.5199	138.5199	0.0448	0.0000	139.6399

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3.3 Guideway - Foundation Prep - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063
Total	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063

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					0.1672	0.0000	0.1672	0.0741	0.0000	0.0741	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.0839	0.8395	1.5800e-003		2.5800e-003	2.5800e-003		2.5800e-003	2.5800e-003	0.0000	138.5197	138.5197	0.0448	0.0000	139.6397
Total	0.0194	0.0839	0.8395	1.5800e-003	0.1672	2.5800e-003	0.1697	0.0741	2.5800e-003	0.0767	0.0000	138.5197	138.5197	0.0448	0.0000	139.6397

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3.3 Guideway - Foundation Prep - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063
Total	0.0307	0.0222	0.2595	8.2000e-004	0.0888	6.9000e-004	0.0895	0.0236	6.3000e-004	0.0242	0.0000	74.4584	74.4584	1.9200e-003	0.0000	74.5063

3.4 Guideway - Column Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1149	1.2334	1.2693	2.8900e-003		0.0504	0.0504		0.0464	0.0464	0.0000	253.5484	253.5484	0.0820	0.0000	255.5985
Total	0.1149	1.2334	1.2693	2.8900e-003		0.0504	0.0504		0.0464	0.0464	0.0000	253.5484	253.5484	0.0820	0.0000	255.5985

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3.4 Guideway - Column Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4100e-003	0.1445	0.0463	5.0000e-004	0.0129	1.7000e-004	0.0130	3.7100e-003	1.6000e-004	3.8700e-003	0.0000	48.2832	48.2832	2.6300e-003	0.0000	48.3490
Worker	0.0581	0.0419	0.4902	1.5600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457	0.0000	140.6436	140.6436	3.6200e-003	0.0000	140.7342
Total	0.0625	0.1864	0.5366	2.0600e-003	0.1805	1.4700e-003	0.1820	0.0482	1.3600e-003	0.0496	0.0000	188.9269	188.9269	6.2500e-003	0.0000	189.0832

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	0.0356	0.1542	1.7158	2.8900e-003		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	253.5481	253.5481	0.0820	0.0000	255.5982
Total	0.0356	0.1542	1.7158	2.8900e-003		4.7500e-003	4.7500e-003		4.7500e-003	4.7500e-003	0.0000	253.5481	253.5481	0.0820	0.0000	255.5982

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3.4 Guideway - Column Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4100e-003	0.1445	0.0463	5.0000e-004	0.0129	1.7000e-004	0.0130	3.7100e-003	1.6000e-004	3.8700e-003	0.0000	48.2832	48.2832	2.6300e-003	0.0000	48.3490
Worker	0.0581	0.0419	0.4902	1.5600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457	0.0000	140.6436	140.6436	3.6200e-003	0.0000	140.7342
Total	0.0625	0.1864	0.5366	2.0600e-003	0.1805	1.4700e-003	0.1820	0.0482	1.3600e-003	0.0496	0.0000	188.9269	188.9269	6.2500e-003	0.0000	189.0832

3.4 Guideway - Column Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1003	1.0525	1.1536	2.6300e-003		0.0424	0.0424		0.0391	0.0391	0.0000	231.3281	231.3281	0.0748	0.0000	233.1985
Total	0.1003	1.0525	1.1536	2.6300e-003		0.0424	0.0424		0.0391	0.0391	0.0000	231.3281	231.3281	0.0748	0.0000	233.1985

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3.4 Guideway - Column Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9300e-003	0.1313	0.0410	4.5000e-004	0.0117	1.5000e-004	0.0119	3.3800e-003	1.4000e-004	3.5300e-003	0.0000	43.8476	43.8476	2.3600e-003	0.0000	43.9066
Worker	0.0501	0.0348	0.4162	1.3700e-003	0.1529	1.1700e-003	0.1540	0.0406	1.0800e-003	0.0417	0.0000	124.2579	124.2579	3.0300e-003	0.0000	124.3335
Total	0.0541	0.1661	0.4572	1.8200e-003	0.1646	1.3200e-003	0.1659	0.0440	1.2200e-003	0.0452	0.0000	168.1054	168.1054	5.3900e-003	0.0000	168.2402

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	0.0325	0.1406	1.5644	2.6300e-003		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	231.3278	231.3278	0.0748	0.0000	233.1982
Total	0.0325	0.1406	1.5644	2.6300e-003		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	231.3278	231.3278	0.0748	0.0000	233.1982

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3.4 Guideway - Column Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9300e-003	0.1313	0.0410	4.5000e-004	0.0117	1.5000e-004	0.0119	3.3800e-003	1.4000e-004	3.5300e-003	0.0000	43.8476	43.8476	2.3600e-003	0.0000	43.9066
Worker	0.0501	0.0348	0.4162	1.3700e-003	0.1529	1.1700e-003	0.1540	0.0406	1.0800e-003	0.0417	0.0000	124.2579	124.2579	3.0300e-003	0.0000	124.3335
Total	0.0541	0.1661	0.4572	1.8200e-003	0.1646	1.3200e-003	0.1659	0.0440	1.2200e-003	0.0452	0.0000	168.1054	168.1054	5.3900e-003	0.0000	168.2402

3.5 Stations - Platform Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0988	0.8258	0.8190	1.4500e-003		0.0358	0.0358		0.0336	0.0336	0.0000	121.4095	121.4095	0.0324	0.0000	122.2197
Total	0.0988	0.8258	0.8190	1.4500e-003		0.0358	0.0358		0.0336	0.0336	0.0000	121.4095	121.4095	0.0324	0.0000	122.2197

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3.5 Stations - Platform Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6800e-003	0.1204	0.0386	4.1000e-004	0.0107	1.4000e-004	0.0109	3.0900e-003	1.3000e-004	3.2300e-003	0.0000	40.2360	40.2360	2.1900e-003	0.0000	40.2908
Worker	0.0484	0.0349	0.4085	1.3000e-003	0.1397	1.0800e-003	0.1408	0.0371	1.0000e-003	0.0381	0.0000	117.2030	117.2030	3.0200e-003	0.0000	117.2785
Total	0.0521	0.1553	0.4471	1.7100e-003	0.1504	1.2200e-003	0.1517	0.0402	1.1300e-003	0.0413	0.0000	157.4390	157.4390	5.2100e-003	0.0000	157.5693

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	0.0199	0.2247	0.8719	1.4500e-003		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	121.4093	121.4093	0.0324	0.0000	122.2195
Total	0.0199	0.2247	0.8719	1.4500e-003		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	121.4093	121.4093	0.0324	0.0000	122.2195

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3.5 Stations - Platform Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6800e-003	0.1204	0.0386	4.1000e-004	0.0107	1.4000e-004	0.0109	3.0900e-003	1.3000e-004	3.2300e-003	0.0000	40.2360	40.2360	2.1900e-003	0.0000	40.2908
Worker	0.0484	0.0349	0.4085	1.3000e-003	0.1397	1.0800e-003	0.1408	0.0371	1.0000e-003	0.0381	0.0000	117.2030	117.2030	3.0200e-003	0.0000	117.2785
Total	0.0521	0.1553	0.4471	1.7100e-003	0.1504	1.2200e-003	0.1517	0.0402	1.1300e-003	0.0413	0.0000	157.4390	157.4390	5.2100e-003	0.0000	157.5693

3.5 Stations - Platform Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1199	1.0066	1.0511	1.8800e-003		0.0410	0.0410		0.0386	0.0386	0.0000	157.1547	157.1547	0.0417	0.0000	158.1963
Total	0.1199	1.0066	1.0511	1.8800e-003		0.0410	0.0410		0.0386	0.0386	0.0000	157.1547	157.1547	0.0417	0.0000	158.1963

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3.5 Stations - Platform Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6400e-003	0.1553	0.0484	5.3000e-004	0.0139	1.8000e-004	0.0140	4.0000e-003	1.7000e-004	4.1700e-003	0.0000	51.8627	51.8627	2.8000e-003	0.0000	51.9326
Worker	0.0593	0.0412	0.4923	1.6200e-003	0.1808	1.3800e-003	0.1822	0.0480	1.2700e-003	0.0493	0.0000	146.9717	146.9717	3.5800e-003	0.0000	147.0612
Total	0.0639	0.1964	0.5408	2.1500e-003	0.1947	1.5600e-003	0.1962	0.0520	1.4400e-003	0.0535	0.0000	198.8344	198.8344	6.3800e-003	0.0000	198.9937

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	0.0258	0.2907	1.1284	1.8800e-003		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	157.1546	157.1546	0.0417	0.0000	158.1961
Total	0.0258	0.2907	1.1284	1.8800e-003		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	157.1546	157.1546	0.0417	0.0000	158.1961

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3.5 Stations - Platform Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6400e-003	0.1553	0.0484	5.3000e-004	0.0139	1.8000e-004	0.0140	4.0000e-003	1.7000e-004	4.1700e-003	0.0000	51.8627	51.8627	2.8000e-003	0.0000	51.9326
Worker	0.0593	0.0412	0.4923	1.6200e-003	0.1808	1.3800e-003	0.1822	0.0480	1.2700e-003	0.0493	0.0000	146.9717	146.9717	3.5800e-003	0.0000	147.0612
Total	0.0639	0.1964	0.5408	2.1500e-003	0.1947	1.5600e-003	0.1962	0.0520	1.4400e-003	0.0535	0.0000	198.8344	198.8344	6.3800e-003	0.0000	198.9937

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Installation of system elements (i.e., electrical, mechanical, signals, communications, TPSS, etc.) - Minimal ground disturbance

Construction Phase - LACMTA Construction Methods Report: approx 2 years each for Signals/OCS/TPSS

Off-road Equipment - LACMTA Construction Methods Report (October 2018)

Trips and VMT - LACMTA Construction Methods Report (October 2018)

Construction Off-road Equipment Mitigation - LACMTA Green Construction Policy (2011)

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

Off-road Equipment - Construction Methods Report

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Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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
tblConstructionPhase	NumDays	1.00	630.00
tblConstructionPhase	NumDays	1.00	630.00
tblConstructionPhase	NumDays	100.00	630.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

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tblOffRoadEquipment	OffRoadEquipmentType			Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType			Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType			Trenchers
tblOffRoadEquipment	OffRoadEquipmentType			Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType			Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType			Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType			Trenchers
tblOffRoadEquipment	OffRoadEquipmentType			Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount		1.00	2.00
tblOffRoadEquipment	UsageHours		6.00	8.00
tblOffRoadEquipment	UsageHours		6.00	8.00
tblOffRoadEquipment	UsageHours		6.00	8.00
tblTripsAndVMT	VendorTripNumber		0.00	40.00
tblTripsAndVMT	VendorTripNumber		0.00	40.00
tblTripsAndVMT	VendorTripNumber		0.00	40.00
tblTripsAndVMT	WorkerTripNumber		25.00	200.00
tblTripsAndVMT	WorkerTripNumber		25.00	200.00
tblTripsAndVMT	WorkerTripNumber		0.00	200.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.5193	13.4387	14.2733	0.0315	1.0336	0.6121	1.6457	0.2770	0.5665	0.8435	0.0000	2,821.0008	2,821.0008	0.5205	0.0000	2,834.0143
2023	1.5621	13.3889	15.4016	0.0343	1.1436	0.6074	1.7510	0.3065	0.5621	0.8686	0.0000	3,074.4969	3,074.4969	0.5698	0.0000	3,088.7419
2024	0.1717	1.4607	1.7476	3.9200e-003	0.1320	0.0647	0.1966	0.0354	0.0598	0.0952	0.0000	351.4768	351.4768	0.0654	0.0000	353.1123
Maximum	1.5621	13.4387	15.4016	0.0343	1.1436	0.6121	1.7510	0.3065	0.5665	0.8686	0.0000	3,074.4969	3,074.4969	0.5698	0.0000	3,088.7419

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6109	2.7967	15.7064	0.0315	1.0336	0.0397	1.0734	0.2770	0.0390	0.3160	0.0000	2,820.9989	2,820.9989	0.5205	0.0000	2,834.0124
2023	0.6393	2.6381	17.0662	0.0343	1.1436	0.0420	1.1856	0.3065	0.0413	0.3477	0.0000	3,074.4948	3,074.4948	0.5698	0.0000	3,088.7397
2024	0.0715	0.3012	1.9439	3.9200e-003	0.1320	4.8300e-003	0.1368	0.0354	4.7500e-003	0.0401	0.0000	351.4765	351.4765	0.0654	0.0000	353.1121
Maximum	0.6393	2.7967	17.0662	0.0343	1.1436	0.0420	1.1856	0.3065	0.0413	0.3477	0.0000	3,074.4948	3,074.4948	0.5698	0.0000	3,088.7397

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	ROG	NOx	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	59.37	79.72	-10.48	0.00	0.00	93.26	33.33	0.00	92.84	61.05	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-7-2022	5-6-2022	4.0407	0.9161
2	5-7-2022	8-6-2022	4.1666	0.9367
3	8-7-2022	11-6-2022	4.1736	0.9436
4	11-7-2022	2-6-2023	4.0223	0.9048
5	2-7-2023	5-6-2023	3.6528	0.7985
6	5-7-2023	8-6-2023	3.7666	0.8161
7	8-7-2023	11-6-2023	3.7729	0.8224
8	11-7-2023	2-6-2024	3.7005	0.8269
9	2-7-2024	5-6-2024	0.1556	0.0356
		Highest	4.1736	0.9436

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Signals	Site Preparation	2/7/2022	2/10/2024	6	630	Foundations & Conduit construction
2	OCS	Site Preparation	2/7/2022	2/10/2024	6	630	Overhead Catenary System Foundations
3	TPSS	Building Construction	2/7/2022	2/10/2024	6	630	Install TPSS Foundations/Structures

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Signals	Cranes	2	8.00	231	0.29
OCS	Cranes	2	8.00	231	0.29
OCS	Tractors/Loaders/Backhoes	2	8.00	97	0.37
OCS	Rough Terrain Forklifts	2	8.00	100	0.40
OCS	Other Construction Equipment	2	8.00	172	0.42
OCS	Trenchers	2	8.00	78	0.50
TPSS	Other Construction Equipment	2	8.00	172	0.42
TPSS	Cranes	1	8.00	231	0.29
TPSS	Forklifts	3	8.00	89	0.20
TPSS	Generator Sets	2	8.00	84	0.74
TPSS	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Signals	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Signals	Rough Terrain Forklifts	2	8.00	100	0.40
Signals	Trenchers	2	8.00	78	0.50
Signals	Other Construction Equipment	2	8.00	172	0.42

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
Signals	10	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
OCS	10	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
TPSS	10	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Signals - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3918	4.0989	3.6767	6.1700e-003		0.2126	0.2126		0.1956	0.1956	0.0000	542.1222	542.1222	0.1753	0.0000	546.5056
Total	0.3918	4.0989	3.6767	6.1700e-003		0.2126	0.2126		0.1956	0.1956	0.0000	542.1222	542.1222	0.1753	0.0000	546.5056

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3.2 Signals - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

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	0.0758	0.3286	4.1766	6.1700e-003		0.0101	0.0101		0.0101	0.0101	0.0000	542.1216	542.1216	0.1753	0.0000	546.5049
Total	0.0758	0.3286	4.1766	6.1700e-003		0.0101	0.0101		0.0101	0.0101	0.0000	542.1216	542.1216	0.1753	0.0000	546.5049

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3.2 Signals - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

3.2 Signals - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4067	4.1875	4.0397	6.8300e-003		0.2132	0.2132		0.1962	0.1962	0.0000	599.9522	599.9522	0.1940	0.0000	604.8032
Total	0.4067	4.1875	4.0397	6.8300e-003		0.2132	0.2132		0.1962	0.1962	0.0000	599.9522	599.9522	0.1940	0.0000	604.8032

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3.2 Signals - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

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	0.0839	0.3636	4.6210	6.8300e-003		0.0112	0.0112		0.0112	0.0112	0.0000	599.9515	599.9515	0.1940	0.0000	604.8024
Total	0.0839	0.3636	4.6210	6.8300e-003		0.0112	0.0112		0.0112	0.0112	0.0000	599.9515	599.9515	0.1940	0.0000	604.8024

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3.2 Signals - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

3.2 Signals - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0450	0.4562	0.4646	7.9000e-004		0.0230	0.0230		0.0211	0.0211	0.0000	69.2270	69.2270	0.0224	0.0000	69.7868
Total	0.0450	0.4562	0.4646	7.9000e-004		0.0230	0.0230		0.0211	0.0211	0.0000	69.2270	69.2270	0.0224	0.0000	69.7868

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3.2 Signals - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6800e-003	0.0420	0.5332	7.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	69.2270	69.2270	0.0224	0.0000	69.7867
Total	9.6800e-003	0.0420	0.5332	7.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	69.2270	69.2270	0.0224	0.0000	69.7867

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3.2 Signals - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

3.3 OCS - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3918	4.0989	3.6767	6.1700e-003		0.2126	0.2126		0.1956	0.1956	0.0000	542.1222	542.1222	0.1753	0.0000	546.5056
Total	0.3918	4.0989	3.6767	6.1700e-003		0.2126	0.2126		0.1956	0.1956	0.0000	542.1222	542.1222	0.1753	0.0000	546.5056

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3.3 OCS - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

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	0.0758	0.3286	4.1766	6.1700e-003		0.0101	0.0101		0.0101	0.0101	0.0000	542.1216	542.1216	0.1753	0.0000	546.5049
Total	0.0758	0.3286	4.1766	6.1700e-003		0.0101	0.0101		0.0101	0.0101	0.0000	542.1216	542.1216	0.1753	0.0000	546.5049

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3.3 OCS - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

3.3 OCS - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4067	4.1875	4.0397	6.8300e-003		0.2132	0.2132		0.1962	0.1962	0.0000	599.9522	599.9522	0.1940	0.0000	604.8032
Total	0.4067	4.1875	4.0397	6.8300e-003		0.2132	0.2132		0.1962	0.1962	0.0000	599.9522	599.9522	0.1940	0.0000	604.8032

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3.3 OCS - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

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	0.0839	0.3636	4.6210	6.8300e-003		0.0112	0.0112		0.0112	0.0112	0.0000	599.9515	599.9515	0.1940	0.0000	604.8024
Total	0.0839	0.3636	4.6210	6.8300e-003		0.0112	0.0112		0.0112	0.0112	0.0000	599.9515	599.9515	0.1940	0.0000	604.8024

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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	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

3.3 OCS - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0450	0.4562	0.4646	7.9000e-004		0.0230	0.0230		0.0211	0.0211	0.0000	69.2270	69.2270	0.0224	0.0000	69.7868
Total	0.0450	0.4562	0.4646	7.9000e-004		0.0230	0.0230		0.0211	0.0211	0.0000	69.2270	69.2270	0.0224	0.0000	69.7868

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6800e-003	0.0420	0.5332	7.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	69.2270	69.2270	0.0224	0.0000	69.7867
Total	9.6800e-003	0.0420	0.5332	7.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	69.2270	69.2270	0.0224	0.0000	69.7867

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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

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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	0.3450	3.3986	3.5439	5.9200e-003		0.1764	0.1764		0.1656	0.1656	0.0000	516.1325	516.1325	0.1230	0.0000	519.2063
Total	0.3450	3.3986	3.5439	5.9200e-003		0.1764	0.1764		0.1656	0.1656	0.0000	516.1325	516.1325	0.1230	0.0000	519.2063

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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	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

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	0.0685	0.2970	3.9770	5.9200e-003		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	516.1319	516.1319	0.1230	0.0000	519.2056
Total	0.0685	0.2970	3.9770	5.9200e-003		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	516.1319	516.1319	0.1230	0.0000	519.2056

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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	0.0164	0.5288	0.1428	1.4200e-003	0.0355	9.9000e-004	0.0365	0.0103	9.5000e-004	0.0112	0.0000	137.8030	137.8030	8.2300e-003	0.0000	138.0088
Worker	0.1138	0.0853	0.9826	2.9800e-003	0.3090	2.4700e-003	0.3115	0.0821	2.2700e-003	0.0844	0.0000	269.0717	269.0717	7.4100e-003	0.0000	269.2569
Total	0.1302	0.6141	1.1254	4.4000e-003	0.3446	3.4600e-003	0.3480	0.0923	3.2200e-003	0.0956	0.0000	406.8746	406.8746	0.0156	0.0000	407.2657

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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	0.3530	3.4316	3.8981	6.5500e-003		0.1715	0.1715		0.1610	0.1610	0.0000	571.1147	571.1147	0.1354	0.0000	574.5005
Total	0.3530	3.4316	3.8981	6.5500e-003		0.1715	0.1715		0.1610	0.1610	0.0000	571.1147	571.1147	0.1354	0.0000	574.5005

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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	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

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	0.0758	0.3286	4.4001	6.5500e-003		0.0101	0.0101		0.0101	0.0101	0.0000	571.1140	571.1140	0.1354	0.0000	574.4999
Total	0.0758	0.3286	4.4001	6.5500e-003		0.0101	0.0101		0.0101	0.0101	0.0000	571.1140	571.1140	0.1354	0.0000	574.4999

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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	0.0135	0.4420	0.1417	1.5200e-003	0.0393	5.2000e-004	0.0398	0.0113	4.9000e-004	0.0118	0.0000	147.6898	147.6898	8.0500e-003	0.0000	147.8910
Worker	0.1184	0.0854	0.9997	3.1700e-003	0.3419	2.6500e-003	0.3445	0.0908	2.4400e-003	0.0933	0.0000	286.8027	286.8027	7.3800e-003	0.0000	286.9873
Total	0.1319	0.5274	1.1414	4.6900e-003	0.3812	3.1700e-003	0.3844	0.1022	2.9300e-003	0.1051	0.0000	434.4926	434.4926	0.0154	0.0000	434.8783

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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	0.0383	0.3689	0.4487	7.6000e-004		0.0177	0.0177		0.0166	0.0166	0.0000	65.9033	65.9033	0.0156	0.0000	66.2922
Total	0.0383	0.3689	0.4487	7.6000e-004		0.0177	0.0177		0.0166	0.0166	0.0000	65.9033	65.9033	0.0156	0.0000	66.2922

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7500e-003	0.0379	0.5077	7.6000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	65.9032	65.9032	0.0156	0.0000	66.2922
Total	8.7500e-003	0.0379	0.5077	7.6000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	65.9032	65.9032	0.0156	0.0000	66.2922

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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5200e-003	0.0508	0.0159	1.7000e-004	4.5400e-003	6.0000e-005	4.5900e-003	1.3100e-003	6.0000e-005	1.3700e-003	0.0000	16.9733	16.9733	9.1000e-004	0.0000	16.9961
Worker	0.0129	8.9800e-003	0.1074	3.5000e-004	0.0395	3.0000e-004	0.0398	0.0105	2.8000e-004	0.0108	0.0000	32.0666	32.0666	7.8000e-004	0.0000	32.0861
Total	0.0145	0.0598	0.1233	5.2000e-004	0.0440	3.6000e-004	0.0443	0.0118	3.4000e-004	0.0121	0.0000	49.0398	49.0398	1.6900e-003	0.0000	49.0822

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

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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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	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

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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			
User Defined Industrial	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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

**Maintenance and Storage Facility (MSF) Construction
Annual CalEEMod Output Files**

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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	8.07	1000sqft	0.19	8,070.00	0
General Light Industry	24.47	1000sqft	0.56	24,470.00	0
General Light Industry	6.74	1000sqft	0.15	6,740.00	0
Industrial Park	95.11	1000sqft	2.18	95,110.00	0
Unrefrigerated Warehouse-Rail	7.56	1000sqft	0.17	7,560.00	0
Other Asphalt Surfaces	3.00	Acre	3.00	130,680.00	0
Other Non-Asphalt Surfaces	13.20	Acre	13.20	574,992.00	0
Parking Lot	307.00	Space	2.76	122,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2028
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	1227.89	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use -

Construction Phase - Preliminary Schedule

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Off-road Equipment - Project Inventory

Trips and VMT - 150 worker trips, 20 vendor deliveries, 30 haul loads daily.

Grading -

Vehicle Trips - 250 daily employees/visitors

Area Coating - SCAQMD Rule 1113

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Metro GCP Compliance

Fleet Mix -

Off-road Equipment - Project Inventory

Architectural Coating - SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
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
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	20.00	60.00
tblConstructionPhase	NumDays	370.00	450.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	10.00	360.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Paving Parking & Access Roads
tblOffRoadEquipment	PhaseName		Building Construction & Track Laydown
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	910.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	21,600.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	159.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	408.00	300.00
tblTripsAndVMT	WorkerTripNumber	20.00	200.00

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tblTripsAndVMT	WorkerTripNumber	82.00	100.00
tblVehicleTrips	DV_TP	19.00	5.00
tblVehicleTrips	PB_TP	2.00	3.00
tblVehicleTrips	PR_TP	79.00	92.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.49	2.63
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.73	2.63
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	6.83	2.63
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1
2023	0.6970	6.3520	5.9794	0.0185	2.2021	0.2094	2.4116	0.7973	0.1941	0.9914	0.0000	1,686.220 6	1,686.220 6	0.2671	0.0000	1,692.898 4
2024	0.5619	3.2514	5.0486	0.0120	0.5557	0.1105	0.6662	0.1485	0.1043	0.2528	0.0000	1,065.646 6	1,065.646 6	0.1413	0.0000	1,069.179 9
2025	0.6743	0.4357	0.8017	1.8700e-003	0.0920	0.0175	0.1095	0.0246	0.0164	0.0409	0.0000	167.9064	167.9064	0.0229	0.0000	168.4789
Maximum	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3688	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591
2023	0.3231	1.9942	6.7643	0.0185	1.2939	8.0600e-003	1.3020	0.4266	7.6600e-003	0.4343	0.0000	1,686.2197	1,686.2197	0.2671	0.0000	1,692.8975
2024	0.3484	1.1252	5.3911	0.0120	0.5557	5.7800e-003	0.5615	0.1485	5.4400e-003	0.1539	0.0000	1,065.6460	1,065.6460	0.1413	0.0000	1,069.1793
2025	0.6444	0.1353	0.8754	1.8700e-003	0.0920	9.3000e-004	0.0930	0.0246	8.8000e-004	0.0255	0.0000	167.9063	167.9063	0.0229	0.0000	168.4789
Maximum	0.6444	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	39.55	65.87	-11.25	0.00	37.13	95.53	43.27	42.91	95.43	55.36	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	1-22-2022	4-21-2022	1.9308	0.8012
10	4-22-2022	7-21-2022	2.7268	0.9848
11	7-22-2022	10-21-2022	2.9902	1.0213
12	10-22-2022	1-21-2023	2.8785	0.9755
13	1-22-2023	4-21-2023	2.4036	0.7600
14	4-22-2023	7-21-2023	2.3155	0.7289
15	7-22-2023	10-21-2023	0.9818	0.3508
16	10-22-2023	1-21-2024	0.9770	0.3556

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17	1-22-2024	4-21-2024	0.9276	0.3456
18	4-22-2024	7-21-2024	0.9218	0.3398
19	7-22-2024	10-21-2024	0.9337	0.3453
20	10-22-2024	1-21-2025	1.1785	0.6198
21	1-22-2025	4-21-2025	0.7145	0.5023
		Highest	2.9902	1.0213

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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Energy	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	1,062.4398	1,062.4398	0.0247	6.4200e-003	1,064.9692
Mobile	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Waste						0.0000	0.0000		0.0000	0.0000	35.2717	0.0000	35.2717	2.0845	0.0000	87.3842
Water						0.0000	0.0000		0.0000	0.0000	10.4142	238.0601	248.4743	1.0753	0.0264	283.2288
Total	0.7096	0.4096	1.0230	4.7800e-003	0.4203	9.3400e-003	0.4296	0.1126	9.1300e-003	0.1218	45.6859	1,697.8140	1,743.4999	3.2014	0.0328	1,833.3195

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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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Energy	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	1,062.4398	1,062.4398	0.0247	6.4200e-003	1,064.9692
Mobile	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Waste						0.0000	0.0000		0.0000	0.0000	35.2717	0.0000	35.2717	2.0845	0.0000	87.3842
Water						0.0000	0.0000		0.0000	0.0000	10.4142	238.0601	248.4743	1.0753	0.0264	283.2288
Total	0.7096	0.4096	1.0230	4.7800e-003	0.4203	9.3400e-003	0.4296	0.1126	9.1300e-003	0.1218	45.6859	1,697.8140	1,743.4999	3.2014	0.0328	1,833.3195

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/7/2022	5/21/2022	6	90	
2	Site Preparation	Site Preparation	5/23/2022	7/15/2023	6	360	Site Preparation & Grading
3	Building Construction & Track Laydown	Building Construction	7/17/2023	12/21/2024	6	450	
4	Paving Parking & Access Roads	Paving	12/23/2024	3/1/2025	6	60	
5	Road Striping & Architectural Coating	Architectural Coating	12/23/2024	3/1/2025	6	60	

Acres of Grading (Site Preparation Phase): 900

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.96

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 212,925; Non-Residential Outdoor: 70,975; Striped Parking Area: 49,708 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rough Terrain Forklifts	2	8.00	100	0.40
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction & Track Laydown	Cranes	1	8.00	231	0.29
Building Construction & Track Laydown	Generator Sets	1	8.00	84	0.74
Building Construction & Track Laydown	Rough Terrain Forklifts	3	8.00	100	0.40
Building Construction & Track Laydown	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction & Track Laydown	Welders	2	8.00	46	0.45
Paving Parking & Access Roads	Forklifts	2	8.00	89	0.20
Paving Parking & Access Roads	Pavers	2	8.00	130	0.42
Paving Parking & Access Roads	Paving Equipment	2	8.00	132	0.36
Paving Parking & Access Roads	Rollers	2	8.00	80	0.38
Road Striping & Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

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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	10	300.00	40.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	300.00	40.00	21,600.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Track Laydown	10	300.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving Parking & Access Roads	8	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Road Striping & Architectural Coating	2	100.00	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

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0984	0.0000	0.0984	0.0149	0.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1620	1.6089	1.2889	2.6700e-003		0.0726	0.0726		0.0679	0.0679	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009
Total	0.1620	1.6089	1.2889	2.6700e-003	0.0984	0.0726	0.1710	0.0149	0.0679	0.0828	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009

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3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

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					0.0384	0.0000	0.0384	5.8100e-003	0.0000	5.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.1366	1.5351	2.6700e-003		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006
Total	0.0315	0.1366	1.5351	2.6700e-003	0.0384	6.3000e-004	0.0390	5.8100e-003	6.3000e-004	6.4400e-003	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006

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3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6335	0.0000	1.6335	0.6871	0.0000	0.6871	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4368	4.7961	2.9073	6.7100e-003		0.2013	0.2013		0.1852	0.1852	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298
Total	0.4368	4.7961	2.9073	6.7100e-003	1.6335	0.2013	1.8348	0.6871	0.1852	0.8723	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

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					0.6371	0.0000	0.6371	0.2680	0.0000	0.2680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0823	0.3566	3.5049	6.7100e-003		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291
Total	0.0823	0.3566	3.5049	6.7100e-003	0.6371	1.6500e-003	0.6387	0.2680	1.6500e-003	0.2696	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4889	0.0000	1.4889	0.6077	0.0000	0.6077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3400	3.6235	2.4324	5.8700e-003		0.1487	0.1487		0.1368	0.1368	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753
Total	0.3400	3.6235	2.4324	5.8700e-003	1.4889	0.1487	1.6376	0.6077	0.1368	0.7444	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753

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3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

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					0.5807	0.0000	0.5807	0.2370	0.0000	0.2370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0720	0.3121	3.0668	5.8700e-003		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746
Total	0.0720	0.3121	3.0668	5.8700e-003	0.5807	1.4400e-003	0.5821	0.2370	1.4400e-003	0.2384	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746

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3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237
Total	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237

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3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

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	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234
Total	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234

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3.4 Building Construction & Track Laydown - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575
Total	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575

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3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

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	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569
Total	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569

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3.4 Building Construction & Track Laydown - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7100e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.7200e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2800e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0349	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2700e-003	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0921					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0941	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

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	0.0921					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0924	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0119	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267
Total	0.6106	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

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	0.5988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267
Total	0.6008	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252
Unmitigated	0.0642	0.3258	0.9468	4.2800e-003	0.4203	2.9600e-003	0.4232	0.1126	2.7500e-003	0.1154	0.0000	397.3026	397.3026	0.0169	0.0000	397.7252

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
Industrial Park	250.14	250.14	250.14	1,107,686	1,107,686
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	250.14	250.14	250.14	1,107,686	1,107,686

4.3 Trip Type Information

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Land Use	Miles			Trip %			Trip Purpose %		
	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
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Industrial Park	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Other Non-Asphalt Surfaces	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Parking Lot	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Unrefrigerated Warehouse-Rail	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	971.3136	971.3136	0.0229	4.7500e-003	973.3015
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	0.0000	971.3136	971.3136	0.0229	4.7500e-003	973.3015
NaturalGas Mitigated	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	91.1262	91.1262	1.7500e-003	1.6700e-003	91.6677	
NaturalGas Unmitigated	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	91.1262	91.1262	1.7500e-003	1.6700e-003	91.6677	

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

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	121994	6.6000e-004	5.9800e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.5101	6.5101	1.2000e-004	1.2000e-004	6.5488
General Light Industry	146067	7.9000e-004	7.1600e-003	6.0100e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7947	7.7947	1.5000e-004	1.4000e-004	7.8410
General Light Industry	442907	2.3900e-003	0.0217	0.0182	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6352	23.6352	4.5000e-004	4.3000e-004	23.7757
Industrial Park	990095	5.3400e-003	0.0485	0.0408	2.9000e-004		3.6900e-003	3.6900e-003		3.6900e-003	3.6900e-003	0.0000	52.8353	52.8353	1.0100e-003	9.7000e-004	53.1492
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	6577.2	4.0000e-005	3.2000e-004	2.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3510	0.3510	1.0000e-005	1.0000e-005	0.3531
Total		9.2200e-003	0.0837	0.0703	5.0000e-004		6.3500e-003	6.3500e-003		6.3500e-003	6.3500e-003	0.0000	91.1262	91.1262	1.7400e-003	1.6700e-003	91.6677

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

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	121994	6.6000e-004	5.9800e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.5101	6.5101	1.2000e-004	1.2000e-004	6.5488
General Light Industry	146067	7.9000e-004	7.1600e-003	6.0100e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.7947	7.7947	1.5000e-004	1.4000e-004	7.8410
General Light Industry	442907	2.3900e-003	0.0217	0.0182	1.3000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	23.6352	23.6352	4.5000e-004	4.3000e-004	23.7757
Industrial Park	990095	5.3400e-003	0.0485	0.0408	2.9000e-004		3.6900e-003	3.6900e-003		3.6900e-003	3.6900e-003	0.0000	52.8353	52.8353	1.0100e-003	9.7000e-004	53.1492
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	6577.2	4.0000e-005	3.2000e-004	2.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3510	0.3510	1.0000e-005	1.0000e-005	0.3531
Total		9.2200e-003	0.0837	0.0703	5.0000e-004		6.3500e-003	6.3500e-003		6.3500e-003	6.3500e-003	0.0000	91.1262	91.1262	1.7400e-003	1.6700e-003	91.6677

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	271617	151.2802	3.5700e-003	7.4000e-004	151.5898
General Light Industry	74814	41.6685	9.8000e-004	2.0000e-004	41.7538
General Light Industry	89577	49.8909	1.1800e-003	2.4000e-004	49.9931
Industrial Park	1.23548e+006	688.1142	0.0163	3.3600e-003	689.5225
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	29484	16.4215	3.9000e-004	8.0000e-005	16.4551
Total		971.3136	0.0229	4.7400e-003	973.3015

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	271617	151.2802	3.5700e-003	7.4000e-004	151.5898
General Light Industry	74814	41.6685	9.8000e-004	2.0000e-004	41.7538
General Light Industry	89577	49.8909	1.1800e-003	2.4000e-004	49.9931
Industrial Park	1.23548e+006	688.1142	0.0163	3.3600e-003	689.5225
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
Parking Lot	42980	23.9382	5.7000e-004	1.2000e-004	23.9872
Unrefrigerated Warehouse-Rail	29484	16.4215	3.9000e-004	8.0000e-005	16.4551
Total		971.3136	0.0229	4.7400e-003	973.3015

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Cleaning Supplies

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Unmitigated	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

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	0.0691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5665					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Total	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5665					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123
Total	0.6361	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0115	0.0115	3.0000e-005	0.0000	0.0123

7.0 Water Detail

7.1 Mitigation Measures Water

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	248.4743	1.0753	0.0264	283.2288
Unmitigated	248.4743	1.0753	0.0264	283.2288

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.0835 / 0	68.7571	0.2975	7.3100e-003	78.3743
Industrial Park	21.9942 / 0	166.4839	0.7205	0.0177	189.7702
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	1.74825 / 0	13.2333	0.0573	1.4100e-003	15.0843
Total		248.4743	1.0753	0.0264	283.2287

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.0835 / 0	68.7571	0.2975	7.3100e-003	78.3743
Industrial Park	21.9942 / 0	166.4839	0.7205	0.0177	189.7702
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
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	1.74825 / 0	13.2333	0.0573	1.4100e-003	15.0843
Total		248.4743	1.0753	0.0264	283.2287

8.0 Waste Detail**8.1 Mitigation Measures Waste**

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	35.2717	2.0845	0.0000	87.3842
Unmitigated	35.2717	2.0845	0.0000	87.3842

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	48.71	9.8877	0.5844	0.0000	24.4963
Industrial Park	117.94	23.9408	1.4149	0.0000	59.3122
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	7.11	1.4433	0.0853	0.0000	3.5756
Total		35.2717	2.0845	0.0000	87.3842

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	48.71	9.8877	0.5844	0.0000	24.4963
Industrial Park	117.94	23.9408	1.4149	0.0000	59.3122
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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-Rail	7.11	1.4433	0.0853	0.0000	3.5756
Total		35.2717	2.0845	0.0000	87.3842

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

LACMTA West Santa Ana Branch MSF - Paramount Option - Los Angeles-South Coast County, Annual

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

LACMTA West Santa Ana Branch MSF - Bellflower Option
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	4.60	1000sqft	0.11	4,600.00	0
General Light Industry	12.10	1000sqft	0.28	12,100.00	0
Industrial Park	103.44	1000sqft	2.37	103,440.00	0
Unrefrigerated Warehouse-Rail	11.90	1000sqft	0.27	11,900.00	0
Other Asphalt Surfaces	3.00	Acre	3.00	130,680.00	0
Other Non-Asphalt Surfaces	12.50	Acre	12.50	544,500.00	0
Parking Lot	307.00	Space	2.76	122,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2028
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

LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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LACMTA West Santa Ana Branch MSF - Bellflower Option - Los Angeles-South Coast County, Annual

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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	910.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	21,600.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	152.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	25.00	300.00
tblTripsAndVMT	WorkerTripNumber	391.00	300.00
tblTripsAndVMT	WorkerTripNumber	20.00	200.00
tblTripsAndVMT	WorkerTripNumber	78.00	100.00
tblVehicleTrips	DV_TP	19.00	5.00
tblVehicleTrips	PB_TP	2.00	3.00
tblVehicleTrips	PR_TP	79.00	92.00

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tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.49	2.42
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	0.73	2.42
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	6.83	2.42
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1
2023	0.6970	6.3520	5.9794	0.0185	2.2021	0.2094	2.4116	0.7973	0.1941	0.9914	0.0000	1,686.220 6	1,686.220 6	0.2671	0.0000	1,692.898 4
2024	0.5560	3.2514	5.0486	0.0120	0.5557	0.1105	0.6662	0.1485	0.1043	0.2528	0.0000	1,065.646 6	1,065.646 6	0.1413	0.0000	1,069.179 9
2025	0.6358	0.4357	0.8017	1.8700e-003	0.0920	0.0175	0.1095	0.0246	0.0164	0.0409	0.0000	167.9064	167.9064	0.0229	0.0000	168.4789
Maximum	0.8537	9.2354	6.3529	0.0217	2.4415	0.2847	2.7262	0.8913	0.2633	1.1545	0.0000	2,001.546 4	2,001.546 4	0.3166	0.0000	2,009.460 1

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2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3688	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591
2023	0.3231	1.9942	6.7643	0.0185	1.2939	8.0600e-003	1.3020	0.4266	7.6600e-003	0.4343	0.0000	1,686.2197	1,686.2197	0.2671	0.0000	1,692.8975
2024	0.3425	1.1252	5.3911	0.0120	0.5557	5.7800e-003	0.5615	0.1485	5.4400e-003	0.1539	0.0000	1,065.6460	1,065.6460	0.1413	0.0000	1,069.1793
2025	0.6059	0.1353	0.8754	1.8700e-003	0.0920	9.3000e-004	0.0930	0.0246	8.8000e-004	0.0255	0.0000	167.9063	167.9063	0.0229	0.0000	168.4789
Maximum	0.6059	3.3237	7.1966	0.0217	1.3850	0.0131	1.3981	0.4631	0.0125	0.4755	0.0000	2,001.5454	2,001.5454	0.3166	0.0000	2,009.4591

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	40.19	65.87	-11.25	0.00	37.13	95.53	43.27	42.91	95.43	55.36	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
9	1-22-2022	4-21-2022	1.9308	0.8012
10	4-22-2022	7-21-2022	2.7268	0.9848
11	7-22-2022	10-21-2022	2.9902	1.0213
12	10-22-2022	1-21-2023	2.8785	0.9755
13	1-22-2023	4-21-2023	2.4036	0.7600
14	4-22-2023	7-21-2023	2.3155	0.7289
15	7-22-2023	10-21-2023	0.9818	0.3508
16	10-22-2023	1-21-2024	0.9770	0.3556

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17	1-22-2024	4-21-2024	0.9276	0.3456
18	4-22-2024	7-21-2024	0.9218	0.3398
19	7-22-2024	10-21-2024	0.9337	0.3453
20	10-22-2024	1-21-2025	1.1595	0.6007
21	1-22-2025	4-21-2025	0.6898	0.4775
		Highest	2.9902	1.0213

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	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	975.5574	975.5574	0.0227	5.7600e-003	977.8428
Mobile	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201
Waste						0.0000	0.0000		0.0000	0.0000	32.5131	0.0000	32.5131	1.9215	0.0000	80.5497
Water						0.0000	0.0000		0.0000	0.0000	9.6871	221.4404	231.1275	1.0002	0.0246	263.4556
Total	0.6657	0.3942	1.0105	4.7000e-003	0.4206	8.1700e-003	0.4288	0.1127	7.9600e-003	0.1207	42.2002	1,594.6062	1,636.8064	2.9613	0.0303	1,719.8803

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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	0.5939	5.0000e-005	5.7900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0113	0.0113	3.0000e-005	0.0000	0.0120
Energy	7.4900e-003	0.0681	0.0572	4.1000e-004		5.1800e-003	5.1800e-003		5.1800e-003	5.1800e-003	0.0000	975.5574	975.5574	0.0227	5.7600e-003	977.8428
Mobile	0.0643	0.3261	0.9475	4.2900e-003	0.4206	2.9700e-003	0.4236	0.1127	2.7600e-003	0.1155	0.0000	397.5972	397.5972	0.0169	0.0000	398.0201
Waste						0.0000	0.0000		0.0000	0.0000	32.5131	0.0000	32.5131	1.9215	0.0000	80.5497
Water						0.0000	0.0000		0.0000	0.0000	9.6871	221.4404	231.1275	1.0002	0.0246	263.4556
Total	0.6657	0.3942	1.0105	4.7000e-003	0.4206	8.1700e-003	0.4288	0.1127	7.9600e-003	0.1207	42.2002	1,594.6062	1,636.8064	2.9613	0.0303	1,719.8803

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/7/2022	5/21/2022	6	90	
2	Site Preparation	Site Preparation	5/23/2022	7/15/2023	6	360	
3	Building Construction & Track Laydown	Building Construction	7/17/2023	12/21/2024	6	450	
4	Paving Parking & Access Roads	Paving	12/23/2024	3/1/2025	6	60	
5	Road Striping & Architectural Coating	Architectural Coating	12/23/2024	3/1/2025	6	60	

Acres of Grading (Site Preparation Phase): 900

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 198,060; Non-Residential Outdoor: 66,020; Striped Parking Area: 47,879 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rough Terrain Forklifts	2	8.00	100	0.40
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction & Track Laydown	Cranes	1	8.00	231	0.29
Building Construction & Track Laydown	Generator Sets	1	8.00	84	0.74
Building Construction & Track Laydown	Rough Terrain Forklifts	3	8.00	100	0.40
Building Construction & Track Laydown	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction & Track Laydown	Welders	2	8.00	46	0.45
Paving Parking & Access Roads	Forklifts	2	8.00	89	0.20
Paving Parking & Access Roads	Pavers	2	8.00	130	0.42
Paving Parking & Access Roads	Paving Equipment	2	8.00	132	0.36
Paving Parking & Access Roads	Rollers	2	8.00	80	0.38
Road Striping & Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

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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	10	300.00	40.00	5,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	300.00	40.00	21,600.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction & Track Laydown	10	300.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving Parking & Access Roads	8	200.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Road Striping & Architectural Coating	2	100.00	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

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0984	0.0000	0.0984	0.0149	0.0000	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1620	1.6089	1.2889	2.6700e-003		0.0726	0.0726		0.0679	0.0679	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009
Total	0.1620	1.6089	1.2889	2.6700e-003	0.0984	0.0726	0.1710	0.0149	0.0679	0.0828	0.0000	233.4387	233.4387	0.0625	0.0000	235.0009

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3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

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					0.0384	0.0000	0.0384	5.8100e-003	0.0000	5.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0315	0.1366	1.5351	2.6700e-003		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006
Total	0.0315	0.1366	1.5351	2.6700e-003	0.0384	6.3000e-004	0.0390	5.8100e-003	6.3000e-004	6.4400e-003	0.0000	233.4384	233.4384	0.0625	0.0000	235.0006

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3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0216	0.6937	0.1723	2.0600e-003	0.0464	1.9400e-003	0.0484	0.0127	1.8600e-003	0.0146	0.0000	203.3724	203.3724	0.0141	0.0000	203.7240
Vendor	5.2500e-003	0.1688	0.0456	4.5000e-004	0.0113	3.2000e-004	0.0117	3.2700e-003	3.0000e-004	3.5800e-003	0.0000	43.9797	43.9797	2.6300e-003	0.0000	44.0454
Worker	0.0545	0.0409	0.4704	1.4200e-003	0.1479	1.1800e-003	0.1491	0.0393	1.0900e-003	0.0404	0.0000	128.8109	128.8109	3.5500e-003	0.0000	128.8996
Total	0.0814	0.9033	0.6883	3.9300e-003	0.2057	3.4400e-003	0.2091	0.0553	3.2500e-003	0.0586	0.0000	376.1630	376.1630	0.0202	0.0000	376.6690

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6335	0.0000	1.6335	0.6871	0.0000	0.6871	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4368	4.7961	2.9073	6.7100e-003		0.2013	0.2013		0.1852	0.1852	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298
Total	0.4368	4.7961	2.9073	6.7100e-003	1.6335	0.2013	1.8348	0.6871	0.1852	0.8723	0.0000	589.4637	589.4637	0.1906	0.0000	594.2298

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

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					0.6371	0.0000	0.6371	0.2680	0.0000	0.2680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0823	0.3566	3.5049	6.7100e-003		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291
Total	0.0823	0.3566	3.5049	6.7100e-003	0.6371	1.6500e-003	0.6387	0.2680	1.6500e-003	0.2696	0.0000	589.4630	589.4630	0.1906	0.0000	594.2291

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0462	1.4799	0.3677	4.4000e-003	0.1641	4.1500e-003	0.1683	0.0432	3.9700e-003	0.0471	0.0000	433.8612	433.8612	0.0300	0.0000	434.6113
Vendor	0.0112	0.3600	0.0972	9.7000e-004	0.0242	6.8000e-004	0.0249	6.9800e-003	6.5000e-004	7.6300e-003	0.0000	93.8233	93.8233	5.6000e-003	0.0000	93.9634
Worker	0.1162	0.0871	1.0035	3.0400e-003	0.3156	2.5200e-003	0.3181	0.0838	2.3200e-003	0.0861	0.0000	274.7966	274.7966	7.5700e-003	0.0000	274.9858
Total	0.1736	1.9271	1.4684	8.4100e-003	0.5039	7.3500e-003	0.5113	0.1340	6.9400e-003	0.1409	0.0000	802.4811	802.4811	0.0432	0.0000	803.5605

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4889	0.0000	1.4889	0.6077	0.0000	0.6077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3400	3.6235	2.4324	5.8700e-003		0.1487	0.1487		0.1368	0.1368	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753
Total	0.3400	3.6235	2.4324	5.8700e-003	1.4889	0.1487	1.6376	0.6077	0.1368	0.7444	0.0000	515.7055	515.7055	0.1668	0.0000	519.8753

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3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

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					0.5807	0.0000	0.5807	0.2370	0.0000	0.2370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0720	0.3121	3.0668	5.8700e-003		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746
Total	0.0720	0.3121	3.0668	5.8700e-003	0.5807	1.4400e-003	0.5821	0.2370	1.4400e-003	0.2384	0.0000	515.7049	515.7049	0.1668	0.0000	519.8746

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3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0265	0.8496	0.2919	3.6800e-003	0.1611	1.5200e-003	0.1626	0.0421	1.4500e-003	0.0435	0.0000	363.8180	363.8180	0.0244	0.0000	364.4275
Vendor	7.2700e-003	0.2380	0.0763	8.2000e-004	0.0212	2.8000e-004	0.0214	6.1100e-003	2.7000e-004	6.3700e-003	0.0000	79.5253	79.5253	4.3300e-003	0.0000	79.6336
Worker	0.0956	0.0690	0.8074	2.5600e-003	0.2761	2.1400e-003	0.2783	0.0733	1.9700e-003	0.0753	0.0000	231.6484	231.6484	5.9600e-003	0.0000	231.7974
Total	0.1294	1.1566	1.1756	7.0600e-003	0.4584	3.9400e-003	0.4623	0.1215	3.6900e-003	0.1252	0.0000	674.9916	674.9916	0.0347	0.0000	675.8585

3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237
Total	0.1395	1.3088	1.6139	2.6800e-003		0.0547	0.0547		0.0517	0.0517	0.0000	228.8032	228.8032	0.0568	0.0000	230.2237

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3.4 Building Construction & Track Laydown - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

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	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234
Total	0.0335	0.2624	1.7645	2.6800e-003		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	228.8029	228.8029	0.0568	0.0000	230.2234

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3.4 Building Construction & Track Laydown - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2300e-003	0.2040	0.0654	7.0000e-004	0.0181	2.4000e-004	0.0184	5.2400e-003	2.3000e-004	5.4600e-003	0.0000	68.1645	68.1645	3.7100e-003	0.0000	68.2574
Worker	0.0820	0.0591	0.6921	2.2000e-003	0.2367	1.8400e-003	0.2385	0.0629	1.6900e-003	0.0646	0.0000	198.5557	198.5557	5.1100e-003	0.0000	198.6835
Total	0.0882	0.2631	0.7575	2.9000e-003	0.2548	2.0800e-003	0.2569	0.0681	1.9200e-003	0.0700	0.0000	266.7203	266.7203	8.8200e-003	0.0000	266.9409

3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575
Total	0.2796	2.6325	3.4180	5.6900e-003		0.1032	0.1032		0.0974	0.0974	0.0000	486.2563	486.2563	0.1201	0.0000	489.2575

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3.4 Building Construction & Track Laydown - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

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	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569
Total	0.0712	0.5576	3.7495	5.6900e-003		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	486.2558	486.2558	0.1201	0.0000	489.2569

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3.4 Building Construction & Track Laydown - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0129	0.4319	0.1347	1.4800e-003	0.0386	5.0000e-004	0.0391	0.0111	4.8000e-004	0.0116	0.0000	144.2726	144.2726	7.7800e-003	0.0000	144.4670
Worker	0.1649	0.1146	1.3695	4.5200e-003	0.5030	3.8500e-003	0.5068	0.1336	3.5400e-003	0.1371	0.0000	408.8485	408.8485	9.9500e-003	0.0000	409.0974
Total	0.1779	0.5465	1.5043	6.0000e-003	0.5415	4.3500e-003	0.5459	0.1447	4.0200e-003	0.1487	0.0000	553.1211	553.1211	0.0177	0.0000	553.5644

3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7100e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.7200e-003	0.0452	0.0676	1.0000e-004		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584
Paving	1.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2800e-003	5.5100e-003	0.0785	1.0000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	9.0849	9.0849	2.9400e-003	0.0000	9.1584

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3.5 Paving Parking & Access Roads - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4000e-004	0.0113	3.5200e-003	4.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	3.7718	3.7718	2.0000e-004	0.0000	3.7769
Worker	2.8700e-003	2.0000e-003	0.0239	8.0000e-005	8.7700e-003	7.0000e-005	8.8300e-003	2.3300e-003	6.0000e-005	2.3900e-003	0.0000	7.1259	7.1259	1.7000e-004	0.0000	7.1302
Total	3.2100e-003	0.0133	0.0274	1.2000e-004	9.7800e-003	8.0000e-005	9.8500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	10.8977	10.8977	3.7000e-004	0.0000	10.9072

3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0349	0.2657	0.4380	6.7000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	59.0332	59.0332	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2700e-003	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105
Paving	6.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0148	0.0358	0.5101	6.7000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	59.0331	59.0331	0.0191	0.0000	59.5105

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3.5 Paving Parking & Access Roads - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1400e-003	0.0728	0.0223	2.5000e-004	6.5500e-003	8.0000e-005	6.6300e-003	1.8900e-003	8.0000e-005	1.9700e-003	0.0000	24.3833	24.3833	1.3000e-003	0.0000	24.4159
Worker	0.0178	0.0119	0.1440	4.9000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155	0.0000	44.5249	44.5249	1.0300e-003	0.0000	44.5506
Total	0.0199	0.0846	0.1663	7.4000e-004	0.0635	5.1000e-004	0.0640	0.0170	4.7000e-004	0.0175	0.0000	68.9082	68.9082	2.3300e-003	0.0000	68.9664

3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9300e-003	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0881	0.0130	0.0193	3.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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3.6 Road Striping & Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

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	0.0862					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273
Total	0.0865	1.3700e-003	0.0196	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7235	2.7235	1.5000e-004	0.0000	2.7273

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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	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651
Total	1.4400e-003	1.0000e-003	0.0119	4.0000e-005	4.3800e-003	3.0000e-005	4.4200e-003	1.1600e-003	3.0000e-005	1.2000e-003	0.0000	3.5630	3.5630	9.0000e-005	0.0000	3.5651

3.6 Road Striping & Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5603					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0119	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267
Total	0.5721	0.0794	0.1254	2.1000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	17.7026	17.7026	9.7000e-004	0.0000	17.7267

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

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	0.5603					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267
Total	0.5623	8.9300e-003	0.1271	2.1000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	17.7025	17.7025	9.7000e-004	0.0000	17.7267

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3.6 Road Striping & Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753
Total	8.8800e-003	5.9400e-003	0.0720	2.5000e-004	0.0285	2.1000e-004	0.0287	7.5700e-003	2.0000e-004	7.7600e-003	0.0000	22.2624	22.2624	5.1000e-004	0.0000	22.2753

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile