APPENDIX B
Updated Air Quality and Greenhouse Gas Technical Memorandum

Note: This Technical Memorandum has been updated to account for construction of the California High-Speed Rail column and revised volatile organic compounds emissions during operational activities.

taha
environmental planners

MEMORANDUM

TO: Andrina Dominguez, ENV SP
Los Angeles County Metropolitan Transportation Authority (Metro)

FROM: Anders Sutherland, Environmental Scientist
Terry A. Hayes Associates Inc.

DATE: August 27, 2018

RE: Division 20 Portal Widening/Turnback Facility Project - Air Quality and Greenhouse Gas Technical Memorandum

Terry A. Hayes Associates Inc. (TAHA) is pleased to submit this Air Quality and Greenhouse Gas (GHG) Emissions Technical Memorandum for the Division 20 Portal Widening/Turnback Facility Project (Proposed Project). The analysis assesses potential impacts associated with the Proposed Project. Impact conclusions relevant to provisions of the California Environmental Quality Act (CEQA) are summarized in **Table 1**.

Table 1. Summary of Impact Statements

Impact Statement	Level of Significance	Mitigation Measures
AIR QUALITY		
Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?	Less-Than-Significant Impact	None Applicable
Would the Proposed Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Less-Than-Significant Impact	None Applicable
Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Less-Than-Significant Impact	None Applicable
Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?	Less-Than-Significant Impact	None Applicable
Would the Proposed Project create objectionable odors affecting a substantial number of people?	Less-Than-Significant Impact	None Applicable
GREENHOUSE GAS EMISSIONS		
Would the Proposed Project generate greenhouse gas emissions—either directly or indirectly—that may have a significant impact on the environment?	Less-Than-Significant Impact	None Applicable
Would the Proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions?	Less-Than-Significant Impact	None Applicable
SOURCE: TAHA, 2018.		

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PROJECT DESCRIPTION

The Project Site is regionally located in the northeast edge of downtown Los Angeles, in Los Angeles County, as shown in Figure 1. The Division 20 Rail Yard is an approximately 45-acre site that supports the Metro Red and Purple Lines' train storage and maintenance facilities. It is generally bounded by the Los Angeles River to the east, Santa Fe Avenue to the west, Ducommun Street to the north, and the 6th Street Bridge to the south. The footprint of the Proposed Project, including expansion of the existing boundaries west towards Santa Fe Avenue and north towards Commercial Street, are shown in Figure 2. The western boundary of the Project Site includes commercial/industrial properties along Santa Fe Avenue, as well as the One Santa Fe (OSF) mixed-use complex immediately south of the 1st Street Bridge. Immediately to the south and southwest of the Project Site is the Arts District, which is comprised of residential, industrial, and commercial uses, and art galleries and exhibition warehouse spaces. Land uses to the north include commercial/industrial buildings, and the Los Angeles River is located to the east beyond freight rail tracks.

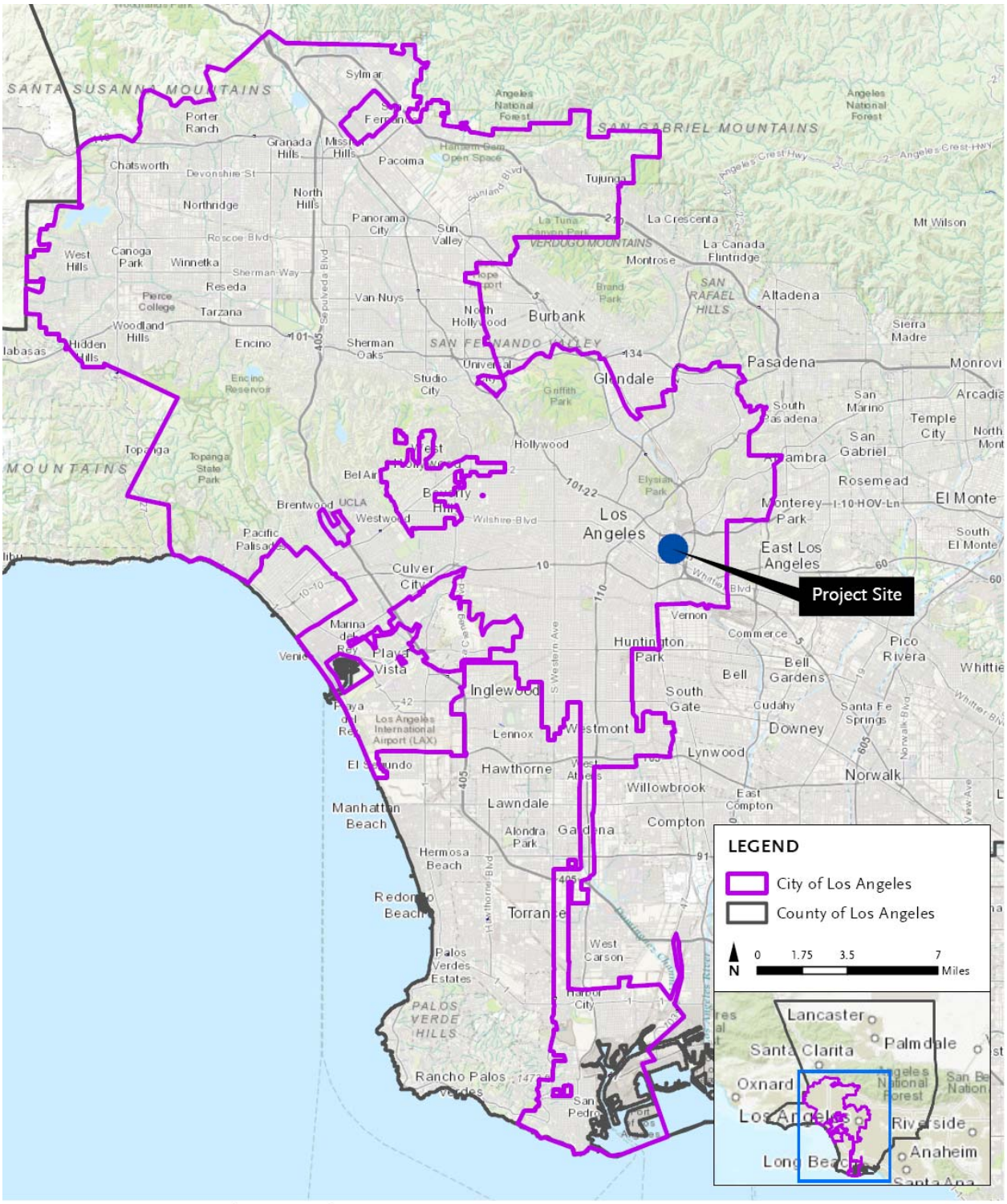
The Proposed Project includes widening of the portal for the Metro Red and Purple Lines, construction of new storage tracks, and the provision of a new turnback facility. Specifically, the Proposed Project components, also shown in Figure 2, include:

- Widening the tunnel portal that currently connects the Metro Red and Purple Lines to the Rail Yard, including construction of a column in the portal area and a new ventilation shaft building;
- Constructing new storage tracks;
- Reconfiguring existing tracks and access roads to accommodate a turnback facility;
- Installing a new traction power substation (TPSS) and emergency backup power generator;
- Expanding the Rail Yard west, into areas currently occupied by the Citizens Warehouse/Lysle Storage Company building, the LAPD Viertel's Central Division Police Garage, and the National Cold Storage facility;
- Repurposing an existing building at 100-120 North Santa Fe Avenue for MOW activities;
- Modifying the 1st Street Bridge piers and superstructure; and
- Vacating portions of three City streets (i.e., Jackson, Banning, and Ducommun Streets east of Center Street).

The successful implementation of these components would necessitate the demolition of the existing MOW Location 61A building and the National Cold Storage facility, as well as the modification of the Citizens Warehouse/Lysle Storage Company building. Additionally, streetscape improvements and a physical safety perimeter would be installed for the integration of the Proposed Project into its surrounding urban environment.

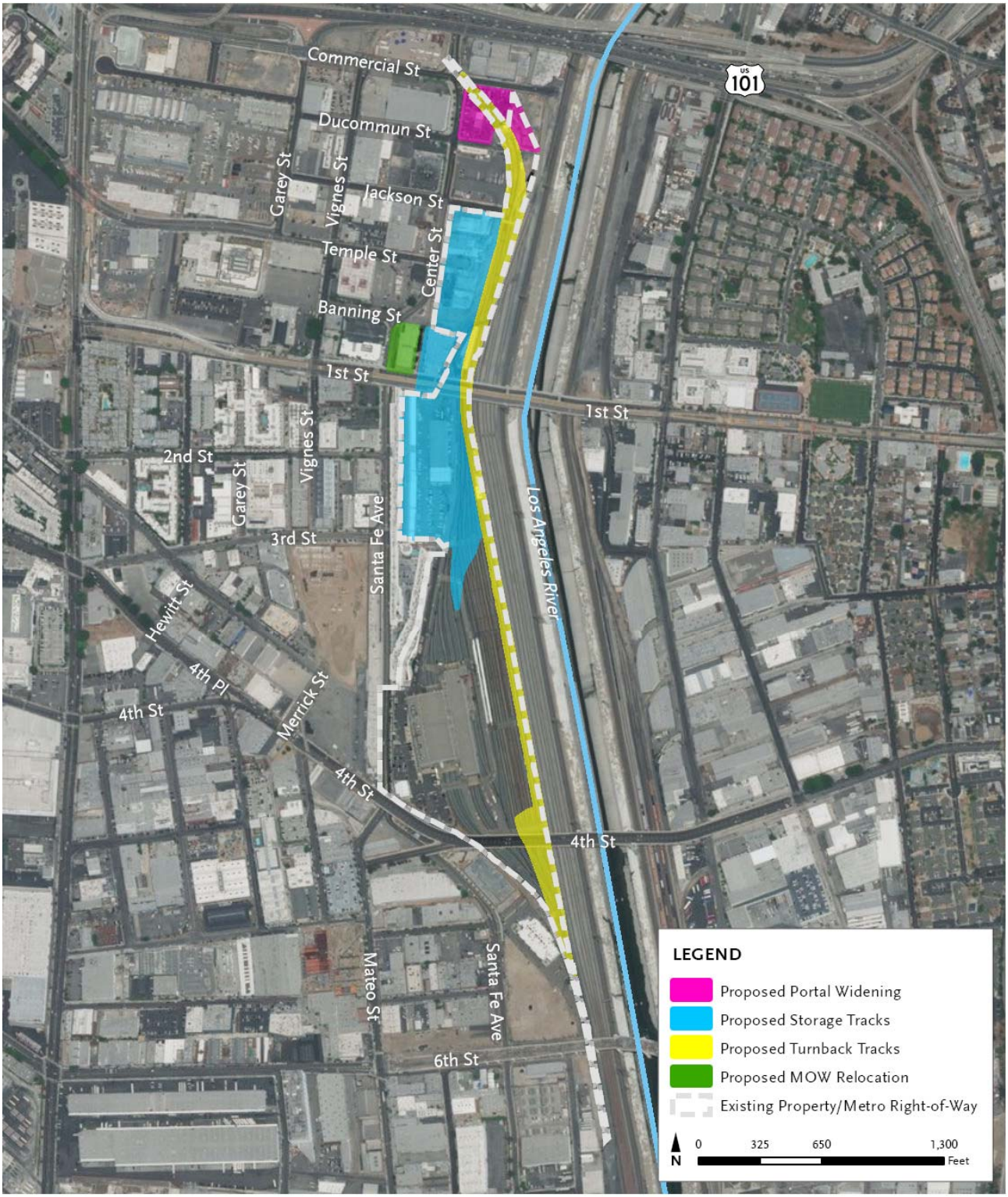
The Proposed Project requires the expansion of the Division 20 Rail Yard to the west. The properties that would be affected by this expansion include the vacant Citizens Warehouse/Lysle Storage Company Building, the LAPD's Viertel's Central Division Police Garage, and a commercial building located at 100-120 North Santa Fe Avenue. The Proposed Project would also expand the Division 20 Rail Yard into areas currently occupied by the National Cold Storage facility, which is vacant and has been acquired by Metro. The Proposed Project would also require the vacation of portions of three City streets (i.e., Jackson, Banning, and Ducommun Streets east of Center Street). #

Figure 1. Regional and Project Site Location



Source: Terry A. Hayes Associates Inc., 2017.

Figure 2 Project Area



NOTE: Exact location of storage tracks and turnback tracks to be determined.

Source: Terry A. Hayes Associates Inc., 2018.

AIR QUALITY METHODOLOGY AND SIGNIFICANCE THRESHOLDS

Air quality jurisdiction in California is allocated regionally to air quality management districts and air pollution control districts by geographic areas, either by air basin or by county. The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties, a geographic region referred to as the South Coast Air Basin (SCAB). Air quality assessments for CEQA projects within the SCAQMD jurisdiction are conducted in accordance with the SCAQMD CEQA Air Quality Analysis Handbook. The SCAQMD guidance states that emissions of air pollutants that would be generated by construction and operation of a Proposed Project shall be quantified and compared to the SCAQMD Air Quality Significance Thresholds. The recommended tool for quantifying air pollutant emissions from land use development projects is the California Emissions Estimator Model (CalEEMod).

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations of a variety of land use projects. The model quantifies direct emissions from construction and operational activities (include vehicle trips), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been populated within the model using data provided by the various California Air Districts to account for local requirements and conditions. CalEEMod was used to quantify emissions of criteria air pollutants that would be generated by construction of the Proposed Project. Implementation of the Proposed Project would not introduce a new substantial permanent source of air pollutant emissions into the Project Area; therefore, operational conditions are evaluated qualitatively.

Construction of the Proposed Project is anticipated to begin in early Spring 2019 and finish in Fall 2023, followed by several months of testing and commissioning prior to opening for use in November 2023. General activity phases that would occur during construction of the Proposed Project include demolition of structures and widening of the existing Division 20 portal, modification of the existing 1st Street Bridge, grading and excavation to level the Project Site, installation of the new storage tracks, construction of the turnback tracks (facility), renovation of 100–120 North Santa Fe and relocation of MOW activities, and installation of a new Traction Power Substation (TPSS) and Emergency Backup Power Supply (EBPS). It is proposed that the first two phases of construction activity may utilize up to eight pieces of construction equipment per day, and that the latter two phases of construction activity would utilize up to 10 pieces of construction equipment per day.

As a conservative approach, the air quality impact assessment assumed that the entire equipment inventory for each phase would be operating continuously for eight hours per day to estimate maximum potential emissions of air pollutants during a shift. It is highly unlikely that during the course of a shift all construction equipment would be utilized simultaneously and continuously without any breaks. However, to characterize maximum possible emissions that could occur over a given day taking into account dual shifts and overlap of construction activities, the air quality impact assessment also considers the additive emissions from the successive construction activities with the greatest magnitude of emissions (Demolition/Portal Widening + Excavation/Grading). This extreme hypothetical parameterization represents the worst case scenario that is reasonably foreseeable within a day of construction activity.

Demolition activities would raze and remove approximately 306,875 square feet (sq. ft.) of existing building structures resulting in a maximum of 15 truckloads per day to dispose of debris, and excavation would involve the displacement and disposal of approximately 100,000 cubic yards (CY) of material at an off-site facility resulting in a maximum of 25 truckloads per day. It was assumed that installation of the new storage tracks and construction of the turnback facility would require a maximum of 10 truckloads of material deliveries per day for the purposes of emissions modeling. Overlapping activities could generate up to 60 total truck trips per day, including construction of the High Speed Rail column. Air pollutant emissions were estimated for construction equipment exhaust, worker vehicle and truck trips, and fugitive dust associated with excavation, grading, and material transfer. Detailed CalEEMod emissions modeling files containing project data are provided in **Appendix A**.

Operation of the Proposed Project would involve similar activities to those currently ongoing in the rail yard, although the expanded facility will accommodate 282 heavy rail vehicles instead of the 104 under existing conditions. The movement of these heavy rail vehicles within the rail yard is powered by electric propulsion and would not generate air pollutant emissions, therefore operation of the Proposed Project would not introduce any new stationary or mobile sources of emissions located on the Project Site. However, approximately 107 additional employees will be required to conduct operational activities following the completion of construction activities, who would commute through a combination of single-occupancy vehicles, carpools, and public transit. For the purposes of the air quality assessment, it was conservatively assumed that all 107 new employees would commute individually and associated mobile source emissions were quantified starting in 2023. Detailed operational trip emissions calculations are provided in **Appendix A**.

In accordance with Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact related to air quality if construction or operation would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan;

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone [O_3] precursors;

AQ-4 Expose sensitive receptors to substantial pollutant concentrations; or

AQ-5 Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines allow for air quality management districts to establish regionally-specific thresholds of significance to guide air quality assessments and significance determinations under CEQA. The SCAQMD has promulgated Air Quality Significance Thresholds to assist in the determination process for CEQA air quality assessments.[1] The thresholds were devised to provide environmental professionals with quantitative metrics for determining the potential significance of air pollutant emissions within the Basin, and whether those emissions would impede regional air quality improvement efforts. Using air dispersion modeling of the comprehensive regional emissions inventory, the SCAQMD determined that construction and operation

[1]SCAQMD, *Air Quality Significance Thresholds*, March 2015.

of individual projects within the Basin could release mass quantities of air pollutants into the atmosphere on a daily basis without compromising or conflicting with regional efforts to improve air quality.

The SCAQMD established separate sets of threshold values applicable to regional and localized emissions. Regional emissions refer to air pollutant emissions generated by all sources associated with a project, including those located on the project site as well as emissions resulting from off-site activities such as mobile vehicle trips. Regional Air Quality Significance Thresholds were developed for maximum allowable daily emissions of volatile organic compounds (VOC), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur oxides (SO_X), respirable particulate matter less than 10 microns in diameter (PM_{10}), and fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Controlling emissions of these pollutants within the Basin is a critical component of SCAQMD efforts to improve regional air quality and meet the provisions and objectives of the Air Quality Management Plan (AQMP), the applicable regional air quality planning document. The regional Air Quality Significance Thresholds for mass daily emissions are shown in Table 2.

Table 2 SCAQMD Air Quality Significance Thresholds – Mass Daily Thresholds

POLLUTANT	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
CONSTRUCTION						
Regional Threshold (lb/day)	75	100	550	150	150	55
Localized Threshold (lb/day)	--	108	1,048	--	8	5
OPERATION						
Regional Threshold (lb/day)	55	55	550	150	150	55

Note: LST values selected for 2-acre daily disturbance based on equipment inventory and 25-meter receptor distance in SRA 1.
SOURCE: SCAQMD, 2015; 2009.

In addition to the regional Mass Daily Thresholds, the SCAQMD developed threshold concentrations specifically applicable to localized emissions in order to prevent public health concerns. Localized emissions refer only to air pollutant emissions generated by sources located on the project site that are more likely to affect nearby sensitive receptors. According to the SCAQMD, localized emissions would result in a significant air quality impact if pollutant concentrations were to exceed the following threshold values at a sensitive receptor location:

- Localized concentrations of CO exceed the one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm;
- Localized concentrations of NO_2 exceed the one-hour standard of 0.18 ppm; and/or
- Localized concentrations of PM_{10} or $PM_{2.5}$ exceed 10.4 $\mu g/m^3$.

To evaluate the likelihood that localized emissions from sources at construction sites could result in air pollutant concentrations exceeding these thresholds, the SCAQMD developed Localized Significance Threshold (LST) values applicable to NO_X, CO, PM_{10}, and $PM_{2.5}$. The methodology utilized by the SCAQMD to calculate the LST values based on project site location in a Source Receptor Area (SRA), lot size, and proximity of sensitive receptors is comprehensively described in the *Final Localized Significance Threshold Methodology* document.[2] The SCAQMD divided its jurisdiction geographically into SRAs based on the location of air monitoring stations used to characterize ambient air quality and the local emission inventories

[2]SCAQMD, *Final Localized Significance Threshold Methodology*, Revised July 2008.

present throughout the Basin. The Project Site is located in SRA 1 Central Los Angeles County. The applicable LST values are shown in Table 2 above.

The *SCAQMD Fact Sheet for Applying CalEEMod Localized Significance Thresholds* and the *Appendix C Mass Rate Lookup Tables* were consulted to determine the appropriate LST values for the air quality assessment.[3,4] The threshold values used for this analysis—presented in Table 2 above—are specific to a construction site in SRA 1 with a two-acre daily disturbance area based on the construction equipment inventory and a sensitive receptor within 25 meters of the site boundary. These assumptions are consistent with the Proposed Project's construction scenario, in that maximum daily ground disturbance activity during grading and excavation would require up to two scrapers on the Project Site, each of which can cover an area of one acre per day according to the SCAQMD. Furthermore, the OSF residential development is situated along the boundary of the Proposed Project site, and therefore the LST value for the closest receptor proximity is appropriate.

AIR QUALITY IMPACT ANALYSIS

The ensuing discussions address the potential significance of air quality impacts associated with construction and operation of the Proposed Project in accordance with the Appendix G Environmental Checklist criteria. Where appropriate, the SCAQMD Air Quality Significance Thresholds are invoked to substantiate the significance determinations.

AQ-1 Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

The applicable air quality plan for the Proposed Project is the SCAQMD 2016 Air Quality Management Plan (AQMP), which is based on growth projections assessed in the Southern California Association of Governments (SCAG) 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) related to population and employment, and associated vehicle miles traveled (VMT). The "on-road emissions" 2016 AQMP budgets are developed based on the regional planning documents that are prepared by SCAG. The Proposed Project is included in the 2016-2040 RTP/SCS under Project ID 1TL0703. The 2016-2040 RTP/SCS was found by FHWA and FTA to be in conformity with the State Implementation Plan on June 1, 2016. The 2016 AQMP emissions budget is also based on growth projections assessed in the 2016–2040 RTP/SCS related to population and employment, and associated vehicle miles traveled (VMT).

[3]SCAQMD, *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, 2013.
[4]SCAQMD, *Localized Significance Threshold Appendix C - Mass Rate LST Look-Up Table*, October 2009.

According to the SCAQMD, there are two key indicators of consistency with the 2016 AQMP: 1) whether the Proposed Project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the 2016 AQMP; and 2) whether the Proposed Project would cause the Project Area to exceed the forecasted growth incorporated into the 2016 AQMP. Construction of the Proposed Project is evaluated in the context of both of these indicators.

The first consistency indicator is whether the Proposed Project would violate the ambient air quality standards. Construction emissions associated with development of the Proposed Project would not have a long-term impact on the region's ability to meet California and federal air quality standards. As shown under the impact discussion for Criterion 3.2.2, maximum daily emissions of air pollutants from construction activities would not exceed regional or localized significance threshold values.

In addition, construction activities associated with the Proposed Project would comply with State and local strategies designed to control air pollution, such as SCAQMD Rules 402 and 403 and the Metro Green Construction Policy. SCAQMD Rule 403 requires the watering of unpaved surfaces disturbed by construction activities and limiting vehicle speeds to 15 miles per hour on unpaved surfaces. The Metro Green Construction Policy requires the use of heavy-duty construction equipment meeting Tier 4 engine specifications. These assumptions were built into the emissions modeling. By adhering to the stringent SCAQMD and Metro rules and regulations pertaining to fugitive dust control and maintaining maximum daily emissions below SCAQMD mass daily thresholds, construction activities associated with the Proposed Project would not conflict with or obstruct implementation of the goals and objectives of the 2016 AQMP to improve air quality in the Basin.

The second consistency indicator is whether the Proposed Project would exceed the regional growth assumptions incorporated into the applicable air quality plan. A large-scale individual project could potentially exceed assumptions in the air quality plan if it resulted in a zoning change that resulted in disproportionate growth relative to the land use types analyzed in the air quality plan. However, the air quality plan focuses on long-term, operational sources of air pollutants that contribute to the regional emission inventory. Short-term, temporary emissions associated with construction activities would not conflict with the air quality plan so long as no SCAQMD air quality mass daily thresholds of significance are exceeded. As shown in Table 3 under Criterion AQ-2, construction activities would not generate daily air pollutant emissions of sufficient magnitude to exceed any applicable threshold of significance. Therefore, the Proposed Project would result in less-than-significant impacts related to the conflict or implementation of the applicable air quality plan during construction.

Operation

Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of air pollutant emissions.

There would be approximately 107 additional employees at the Project Site upon commencement of operations of the Proposed Project. Employees would arrive through a combination of single-occupancy vehicles, carpools, and public transit. The additional vehicle trips would not represent a substantial

incremental increase relative to existing operational activities; conservatively assuming that all additional employees would commute individually, the 107 daily vehicle trips would generate daily emissions of approximately 0.5 pounds VOC, 0.4 pounds NO_X, 4.7 pounds CO, less than 0.1 pounds SO_X, 0.2 pounds PM_{10}, and 0.1 pounds $PM_{2.5}$. Daily mass emissions are substantially below the applicable SCAQMD operational Air Quality Significance Thresholds, therefore mobile source emissions would be less-than-significant.

In addition, the Proposed Project would allow Metro to operate the Purple Line Extension at full capacity and improve headways for the Purple and Red Lines. The Purple Line Extension would extend the existing Metro Purple Line heavy rail transit subway from its current terminus at Wilshire/Western Station to a new western terminus near the West Los Angeles Veterans Administration Hospital. According to the Westside Subway Extension Record of Decision, the Metro Purple Line Extension, "will reduce congestion by providing reliable, higher speed transit service. During peak periods, rail operating speeds are faster than speeds for a comparable trip by automobile, providing more reliability in travel time variation. The improved convenience of transit improvements in the corridor would encourage use of a public transit alternative that would reduce daily vehicle trips, VMT, and congestion on roadways."[5] Importantly for regional air quality, the Proposed Project would assist in reductions in regional VMT and associated pollutant emissions.

The Proposed Project would thus not have the potential to conflict with or obstruct implementation of the 2016 AQMP. Therefore, the Proposed Project would result in less-than-significant impacts related to implementation of the applicable air quality plan during operations.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

AQ-2 Would the Proposed Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

Construction of the Proposed Project would have a potentially significant air quality impact under this criterion if maximum daily emissions of any regulated pollutant would exceed the applicable SCAQMD air quality significance thresholds presented in Table 3. Daily emissions of regulated pollutants were quantified for each phase of construction activity involved with implementation of the Proposed Project. Refer to Table 3.2.5 below for a comparison of the maximum daily emissions during each phase of construction to the applicable SCAQMD air quality significance thresholds. Table 3 includes a comparison of both regional (total) and localized (on-site sources only) emissions to applicable thresholds.

[5] FTA, *Environmental Record of Decision for the Westside Subway Extension*, August 9, 2012.

Table 3. Maximum Daily Emissions – Proposed Project Construction

Phase	Daily Emissions (Pounds Per Day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
DEMOLITION & PORTAL WIDENING						
On-Site Emissions	0.6	2.5	31.0	0.1	1.3	0.3
Off-Site Emissions	0.7	9.6	5.6	<0.1	1.4	0.4
Total	**1.3**	**12.2**	**36.6**	**0.1**	**2.7**	**0.7**
EXCAVATION & GRADING						
On-Site Emissions	0.8	3.3	33.0	0.1	3.5	1.5
Off-Site Emissions	0.9	15.8	7.0	<0.1	2.6	0.7
Total	**1.7**	**19.1**	**40.0**	**0.1**	**6.1**	**2.2**
INSTALLATION OF STORAGE TRACKS AND MOW BUILDING RENOVATIONS						
On-Site Emissions	0.5	4.0	24.0	<0.1	0.1	0.1
Off-Site Emissions	0.5	4.5	4.4	<0.1	1.1	0.3
Total	1.0	8.5	28.4	<0.1	1.2	0.4
INSTALLATION OF HIGH SPEED RAIL COLUMN						
On-Site Emissions	0.2	0.9	7.1	<0.1	<0.1	<0.1
Off-Site Emissions	0.1	2.9	1.1	<0.1	0.3	0.1
Total	0.3	3.8	8.2	0.1	0.3	0.1
CONSTRUCTION OF TURNBACK FACILITIES						
On-Site Emissions	0.4	3.2	19.0	<0.1	<0.1	<0.1
Off-Site Emissions	0.4	3.9	3.8	<0.1	1.0	0.3
Total	**0.8**	**7.1**	**22.7**	**<0.1**	**1.1**	**0.3**
REGIONAL ANALYSIS						
Maximum Regional Daily Emissions	**1.7**	**19.1**	**40.0**	**0.1**	**6.1**	**2.1**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Maximum Possible Overlap – Regional	**3.3**	**35.1**	**84.8**	**0.2**	**9.1**	**3.0**
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
LOCALIZED ANALYSIS						
Maximum Localized Daily Emissions	**--**	**4.0**	**33.0**	**--**	**3.5**	**1.5**
Localized Significance Threshold	--	108	1,048	--	8	5
Exceed Localized Threshold?	**--**	**No**	**No**	**--**	**No**	**No**
Maximum Possible Overlap – Localized	**--**	**8.2**	**71.1**	**--**	**4.8**	**1.8**
Localized Significance Threshold	--	108	1,048	--	8	5
Exceed Localized Threshold?	**--**	**No**	**No**	**--**	**No**	**No**

Note:
Emissions modeling files can be found in **Appendix A**.
LST values are for 2-acre site and 25-meter receptor proximity in SRA 1.
SOURCE: TAHA, 2017.

Results of the construction activity emissions modeling presented in Table 3.2.5 demonstrate that maximum daily emissions of air pollutants would not exceed any applicable regional or localized significance threshold values throughout the duration of Proposed Project construction during any single phase, or even under a hypothetical scenario when the phases overlapped. Additionally, maximum possible daily emissions

accounting for dual shifts and construction activity overlap would remain below applicable SCAQMD regional and localized mass daily thresholds. Construction equipment and activities would be required to adhere to the provisions of the Metro Green Construction Policy, thereby reducing potential environmental impacts through the utilization of equipment engines meeting Tier 4 emission standards.

The results of emissions modeling presented in Table 3.2.5 demonstrate that maximum daily emissions would be below the applicable SCAQMD thresholds for both regional and localized emissions during construction activities. Even under a hypothetical worst-case scenario with construction phase overlap, maximum daily emissions would remain below the regional and localized threshold values. Therefore, the Proposed Project would result in a less-than-significant impact related to violating an air quality standard during construction.

Operation

Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of air pollutant emissions.

The Proposed Project would generate operational emissions related to employee trips and the use of cleaning compounds for maintenance activities. There would be approximately 107 additional employees at the Project Site after completion of the Proposed Project. Employees would arrive through a combination of single-occupancy vehicles, carpools, and public transit. As previously discussed, related emissions would not be significant. Conservatively assuming that all additional employees would commute individually, the 107 daily vehicle trips would generate daily emissions of approximately 1.0 pounds VOC, 0.7 pounds NO_X, 9.3 pounds CO, less than 0.1 pounds SO_X, 0.4 pounds PM_{10}, and 0.2 pounds $PM_{2.5}$. Consumer product use would result in an increase of approximately 8.8 pounds per day VOC resulting in a total of approximately 10 pounds per day VOC. Daily mass emissions are substantially below the applicable SCAQMD operational Air Quality Significance Thresholds. Implementation of the Proposed Project would accommodate expanded storage capacity for the Metro Red and Purple Lines but would not independently expand current Metro rail operations.

Operation of the Proposed Project would thus not have the potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the Proposed Project would result in a less-than-significant impact related to violating an air quality standard during operations.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

AQ-3 Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors?

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Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

The Basin region is currently designated as nonattainment of the federal and State ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$. Therefore, there is an ongoing regional cumulative impact associated with these air pollutants. Taking into account the existing environmental conditions, SCAQMD promulgated guidance that an individual project can emit allowable quantities of these pollutants on a regional scale without significantly contributing to the cumulative impacts. SCAQMD has indicated that the project-level thresholds may be used as an indicator to determine if project emissions contribute considerably to an existing cumulative impact.[6] Therefore, the Proposed Project would be considered cumulatively considerable if its implementation resulted in daily emissions of VOC, NO_x, PM_{10}, or $PM_{2.5}$ that exceeded applicable SCAQMD mass daily thresholds of significance during construction activities.

As discussed above and shown in Table 3, air pollutant emissions associated with construction of the Proposed Project would not exceed any applicable SCAQMD air quality thresholds of significance. Despite the region being designated nonattainment of the ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$, SCAQMD does not consider individual project emissions of lesser magnitude than the mass daily thresholds to be cumulatively considerable. Furthermore, construction activities required for implementation of the Proposed Project would adhere to the stringent requirements of the Metro Green Construction Policy, implementing numerous best management practices and effective control technologies to reduce regional and localized air quality impacts. Therefore, the Proposed Project would result in a less-than-significant impact related to cumulatively considerable net increases of nonattainment pollutants during construction.

Operation

The Basin region is currently designated as nonattainment of the federal and California ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$. Therefore, there is an ongoing regional cumulative impact associated with these air pollutants. Taking into account the existing environmental conditions, SCAQMD promulgated guidance that an individual project can emit allowable quantities of these pollutants on a regional scale without significantly contributing to the cumulative impacts. SCAQMD has indicated that the project-level thresholds may be used as an indicator to determine if project emissions contribute considerably to an existing cumulative impact.[7] Therefore, the Proposed Project would be considered cumulatively considerable if its implementation resulted in daily emissions of VOC, NO_x, PM_{10}, or $PM_{2.5}$ that exceeded applicable SCAQMD mass daily thresholds of significance during future operations.

Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of air pollutant emissions. There would be approximately 107

[6] SCAQMD, *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution Appendix D: Cumulative Impact Analysis Requirements Pursuant to CEQA*, August 2003.

[7] *Ibid*.

additional employees at the Project Site after completion of the Proposed Project. Employees would arrive through a combination of single-occupancy vehicles, carpools, and public transit.

As previously discussed, related emissions would not be significant. Implementation of the Proposed Project would accommodate expanded storage capacity for the Metro Red and Purple Lines but would not independently expand current Metro rail operations. Operation of the Proposed Project would not generate new substantial source of O_3 precursors or particulate matter. Operation of the Proposed Project would not have the potential to result in a cumulatively considerable net increase in emissions of O_3 precursors or particulate matter. Therefore, the Proposed Project would result in a less-than-significant impact related to cumulatively considerable net increases of nonattainment pollutants during operations.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

AQ-4 Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

The nearest land uses that are considered sensitive receptors are the OSF residential apartments situated adjacent to the west and south of the southern portion of the Project Site along Santa Fe Avenue between 1st Street and 4th Street; these residential uses share a property line with the Proposed Project. The SCAQMD designed its construction LST values to prevent the occurrence of substantial pollutant concentrations from reaching sensitive receptors near construction sites. The LST values were derived to ensure that localized emissions would not expose sensitive receptors to air pollutant concentrations that could cause public health concerns or create pollutant hot spots. As shown in Table 3, construction activities associated with implementation of the Proposed Project would not generate localized emissions from on-site sources of sufficient magnitude to exceed any applicable SCAQMD LST value. Additionally, construction activities would be subject to the provisions of the Metro Green Construction Policy and all applicable SCAQMD Rules and Regulations, including Rule 401 (Visible Emissions) and Rule 403 (Fugitive Dust). Construction of the Proposed Project would not have the potential to expose sensitive receptors to substantial pollutant concentrations.

Further, according to wind direction data obtained from SCAQMD meteorological station located at 1630 North Main Street—approximately one mile north of the Project Site—daytime winds during construction hours blow predominantly from the west, southwest, and south, which would transport emissions in the opposite direction of sensitive receptors. Existing and future wind conditions often vary, which could result in no wind or wind blowing occasionally towards OSF. Therefore, the Proposed Project would result in a less-than-significant impact related to the exposure of sensitive receptors to substantial pollutant concentrations during construction.

Operation

Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of air pollutant emissions. There would be approximately 107 additional employees at the Project Site after completion of the Proposed Project. Employees would arrive through a combination of single-occupancy vehicles, carpools, and public transit. As previously discussed, related emissions would not be significant. Implementation of the Proposed Project would accommodate expanded storage capacity for the Metro Red and Purple Lines but would not independently expand current Metro rail operations.

The portal widening requires a new ventilation shaft building to be installed on the parcel currently occupied by LAPD Viertel's Central Division Police Garage. The building would house three fans that would only operate in the event of an emergency such as a fire. Emergency operation of the fans due to fire is unlikely to occur and the potential for exposure to substantial pollutant concentrations resulting from fires is low. Furthermore, the average wind speed in the vicinity of the Proposed Project is approximately 5.2 miles per hour, with calm winds occurring approximately only 0.6 percent of the time. Wind in the vicinity of the Project Site predominately blows from the west and southwest diurnally, and switches direction blowing predominantly from the northeast at night. Residences are located approximately 1,000 feet to the east and 1,300 feet to the south of the vent shaft. In the event of pollutant release, it is anticipated that the smoke plume would be dispersed, and pollutant concentrations would be minimal before reaching the nearest sensitive land uses.

Operation of the Proposed Project would not have the potential to result in exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the Proposed Project would result in a less-than-significant impact related to the exposure of sensitive receptors to substantial pollutant concentrations during operations.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

AQ-5 Would the Proposed Project create objectionable odors affecting a substantial number of people?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

Sources that may potentially emit odors during construction activities include equipment exhaust and architectural coatings, as well as volatile soil contamination in the subsurface if it were to become disturbed during construction activities. Odors from these sources would be localized and generally confined to the immediate area surrounding the Project Site. Construction of the Proposed Project would adhere to the stringent provisions of the Metro Green Construction Policy (e.g., equipment maintenance and inspections, restriction of idling, maintaining buffer zones where feasible) and employ best management practices to prevent the occurrence of a nuisance odor in accordance with SCAQMD Rule 402 (Nuisance).

The odorous emissions would be typical of most construction sites and temporary in nature. There are no schools or public parks within 500 feet of the Project Site boundary that would be especially susceptible to odors emanating from these sources. Daytime winds most often blow construction fumes away from the residential receptors to the west and south. Additionally, the construction of the Proposed Project would adhere to all requirements set forth in SCAQMD Rules and Regulations. Therefore, the Proposed Project would result in a less-than-significant impact related to the creation of objectionable odors during construction.

Operation

Land uses and industrial operations commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.[8] Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of air pollutant emissions. Implementation of the Proposed Project would not generate new stationary or mobile sources of odorous air pollutant emissions, nor would it move any existing sources of odors closer to sensitive receptors in the vicinity of the Project Site. Operation of the Proposed Project would not have the potential to create nuisance odors. Therefore, the Proposed Project would result in a less-than-significant impact related to the the creation of objectionable odors during operations.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

GHG EMISSIONS METHODOLOGY AND SIGNIFICANCE THRESHOLDS

GHG emissions refer to a class of airborne pollutants that are generally believed to affect global climate conditions. These pollutants have the capacity to trap heat in the atmosphere, thereby altering weather patterns and climatic conditions. Annual GHG emissions are expressed in terms of metric tons of carbon dioxide equivalents ($MTCO_2e$) per year, as CO_2 is the most prevalent GHG in the atmosphere that is generated by anthropogenic sources. This section of the report assesses the GHG emissions that would be generated by construction and future operation of the Proposed Project. CalEEMod was used to quantify GHG emissions that would be generated by construction of the Proposed Project. Data describing operational energy demand under existing conditions was provided by Metro and future operational energy consumption was extrapolated based on the expansion of heavy rail vehicle storage. Detailed GHG emissions calculations files, including CalEEMod output and operational emissions spreadsheets, are provided in **Appendix A**.

It is very unlikely that any individual development project would generate GHG emissions of a sufficient magnitude to directly impact regional climate change; therefore, there would be no direct GHG emissions impact resulting from implementation of the Proposed Project and any impact would be considered on an indirect or cumulative basis. There are currently no officially adopted quantitative Metro or SCAQMD thresholds of significance pertaining to GHG emissions generated by construction of projects of this nature.

[8] SCAQMD, *CEQA Air Quality Handbook*, 1993.

Construction activities associated with implementation of the Proposed Project would be temporary and GHG emissions attributed to equipment and vehicle sources would cease upon completion of construction.

Construction of the Proposed Project is anticipated to begin in early Spring 2019 and finish in Fall 2023, followed by several months of testing and commissioning prior to opening for use in November 2023. General activity phases that would occur during construction of the Proposed Project include demolition of structures and widening of the existing Division 20 portal, modification of the existing 1st Street Bridge, grading and excavation to level the Project Site, installation of the new storage tracks, and construction of the turnback tracks, renovation of 100–120 North Santa Fe and relocation of the Maintenance of Way (MOW) activities, and installation of a new TPSS and EBPS. It is proposed that the first two phases of construction activity may utilize up to eight pieces of construction equipment per day, and that the latter two phases of construction activity would utilize up to 10 pieces of construction equipment per day. As a conservative exercise, the GHG emissions assessment assumed that the entire equipment inventory for each phase would be operating continuously for eight hours per day.

Demolition activities would raze and remove approximately 306,875 sq. ft. of existing building structures, and excavation would involve the displacement and disposal of approximately 100,000 CY of material at an off-site facility. It was assumed that installation of the new storage tracks and construction of the turnback facility would require a maximum of 10 truckloads of material deliveries per day. Detailed CalEEMod emissions modeling output files containing input data can be found in **Appendix A**. Due to the regionally cumulative nature of GHG emissions and long-term timescales of their effects on the environment, GHG emissions that would be generated by construction activities associated with implementation of the Proposed Project were amortized over a 30-year theoretical period of operation, in accordance with SCAQMD guidance.

The State CEQA Guidelines require lead agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guideline allows lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold. In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to GHG emission if it would:

GHG-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Neither Metro nor SCAQMD has officially adopted a quantitative metric for determining the potential significance of GHG emissions that would be generated by projects under CEQA. The SCAQMD has yet to adopt a GHG significance threshold for transportation or land use development projects. Currently the SCAQMD has only adopted significance thresholds for industrial-type projects for which it is the lead agency, however, those industrial thresholds are not relevant to the Proposed Project. On November 30, 2015, the California Supreme Court issued an opinion on GHG significance thresholds for CEQA in the case *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife*. The following discussion is paraphrased from that case, which assessed the use of GHG significance thresholds.

The Court stated that California air pollution control officials and air quality districts have made several proposals for numerical thresholds. Multiple agencies' efforts at framing GHG significance issues have not yet coalesced into any widely accepted set of numerical significance thresholds but have produced a certain level of consensus on the value of Assembly Bill (AB) 32 consistency as a criterion. Neither AB 32 nor the AB 32 Scoping Plan set out a mandate or method for CEQA analysis of GHG emissions from a Proposed Project. A 2007 CEQA Guidelines Amendment, however, required the preparation, adoption and periodic update of guidelines for mitigation of GHG impacts. The resulting direction was that a lead agency should attempt to describe, calculate or estimate the amount of GHG the project will emit, but recognizes that agencies have discretion in how to do so.

The Court goes on to provide that when assessing the significance of GHG emissions, the agency should consider these factors among others: (1) the extent to which the Proposed Project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the Proposed Project emissions exceed a threshold of significance that the lead agency determines applies to the Proposed Project; and (3) the extent to which the Proposed Project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an environmental impact report (EIR) must be prepared for the Proposed Project. The Court also acknowledged that the scope of global climate change and the fact that GHGs, once released into the atmosphere, are not contained in the local area of their emission means that the impacts to be evaluated are global rather than local. For many air pollutants, the significance of their environmental impact may depend greatly on where they are emitted; for GHG, it does not.

Meeting statewide reduction goals does not preclude all new development. Rather, the Scoping Plan, the state's roadmap for meeting AB 32's target, assumes continued growth and depends on increased efficiency and conservation in land use and transportation from all Californians. To the extent a project incorporates efficiency and conservation measures sufficient to contribute its portion of the overall GHG reductions necessary for the entire state; one can reasonably argue that a project's impact is not cumulatively considerable, because it would be helping to solve the cumulative problem of greenhouse gas emissions as envisioned by California law. Given the reality of growth, some GHG emissions from new development is inevitable. The critical CEQA question is the cumulative significance of a project's GHG emissions, and from a climate change point of view it does not matter where in the state those emissions are produced. Under these circumstances, evaluating the significance of GHG emissions by their effect on the state's efforts to meet its long-term goals is a reasonable threshold.

Using consistency with AB 32's statewide goal for GHG reduction, rather than a numerical threshold, as a significance criterion is also consistent with the broad guidance provided by Section 15064.4 of the CEQA Guidelines. Section 15064.4 was drafted to reflect that there is no iron-clad definition of significance. Section 15064.4 was not intended to restrict agency discretion in choosing a method for assessing GHG emissions, but rather to assist lead agencies in investigating and disclosing all that they reasonably can regarding a project's GHG emissions impacts.

While the Supreme Court held that establishing a significance criterion based on consistency with AB 32's reduction goals was appropriate, the court found that there was no substantial evidence supporting the conclusion of the EIR at issue in that case that the Proposed Project would be consistent with AB 32's reduction goals. As background, AB 32 requires statewide GHG emissions to return to 1990 levels by 2020. In the AB 32 Scoping Plan, CARB determined that meeting this statewide GHG reduction goal would require a 29 percent reduction in statewide emissions from a business-as-usual approach (i.e., an approach with no conservation or regulatory efforts beyond what was in place when the forecast was made). Based on this determination, the EIR had concluded the project would not result in a significant climate change impact because the Proposed Project was designed to reduce GHG emissions by 31 percent over a business-as-usual approach.

The Supreme Court found that there was no substantial evidence that the project-level reduction of 31 percent in comparison to business as usual is consistent with AB 32's statewide goal of a 29 percent reduction from business as usual. The court reasoned that the Scoping Plan nowhere related its statewide level of reduction efforts to the percentage of reduction that would or should be required from individual projects, and nothing in the administrative record indicated that the required percentage reduction from business as usual is the same for an individual project as for the entire state population and economy. The court suggested, however, that an appropriate threshold could assess whether a project would comply with regulatory programs designed to reduce emissions from particular activities.

GHG EMISSIONS IMPACT ANALYSIS

The ensuing discussions address the potential significance of air quality impacts associated with construction and operation of the Proposed Project in accordance with the Appendix G Environmental Checklist criteria.

GHG-1 Would the Proposed Project generate greenhouse gas emissions—either directly or indirectly—that may have a significant impact on the environment?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities.

Construction

It is very unlikely that any individual development project would generate GHG emissions of a sufficient magnitude to directly impact regional climate change; therefore, there would be no direct GHG emissions impact resulting from implementation of the Proposed Project and any impact would be considered on an indirect or cumulative basis. There are currently no officially adopted quantitative Metro or SCAQMD thresholds of significance pertaining to GHG emissions generated by construction of projects of this nature.

Construction activities associated with implementation of the Proposed Project would be temporary and GHG emissions attributed to equipment and vehicle sources would cease upon completion of construction.

CalEEMod was utilized to prepare estimates of GHG emissions that would be generated by construction of the Proposed Project. Sources of GHG emissions during construction activities include heavy-duty diesel equipment exhaust, construction worker trips vehicle exhaust, and materials delivery and disposal trucks vehicle exhaust. Direct correspondence with Metro provided the demolition quantities, excavation quantities, equipment inventories, and worker and truck trips. Detailed CalEEMod emissions modeling output files are provided in **Appendix A**.

SCAQMD's interim guidance for GHG analyses recommends that construction GHG emissions be "amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies."[9] Table 4 displays the results of the GHG emissions analysis for heavy duty construction equipment and vehicle trips and presents the amortized annual rate over a 30-year construction period in accordance with SCAQMD methodology.

Table 4. Estimated GHG Emissions – Proposed Project Construction

Source Category	Emissions ($MTCO_2e$ Per Year)
Construction Equipment	2,166.8
Vehicle Trips	1,517.8
Total	3,684.6
Amortized Total (30-year period)	**122.8**
Maximum Annual (2019)	**995.8**

Note: Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span.
SOURCE: TAHA, 2017.

Total GHG emissions associated with construction of the Proposed Project would be 3,684.6 $MTCO_2e$, with the maximum annual GHG emissions throughout the duration being approximately 995.8 during the first year of construction. Amortized over a 30-year period, annual GHG emissions resulting from construction activities would represent approximately 122.8 $MTCO_2e$ annually. All construction equipment would be maintained and inspected in accordance with the Metro Green Construction Policy—as well as applicable SCAQMD Rules and Regulations—to ensure that emissions are consistent with regulatory standards. All construction equipment utilized would have engines meeting Tier 4 emission standards in accordance with the Metro Green Construction Policy; however, this does not affect GHG emissions. All diesel haul trucks would be operated in accordance with existing CARB regulations, and idling would be restricted as set forth in the Metro Green Construction Policy.

Operation

Operation of the Proposed Project would result in both direct and indirect GHG emissions. Following the completion of construction activities in 2023, operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the train storage capacity in the

[9]SCAQMD, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2, as of January 17, 2018.

Division 20 Rail Yard from 104 to 282 and would require approximately 107 additional employees at the Project Site who would commute through a combination of single-occupancy vehicles, carpools, and public transit. Employee commuting to and from the Project Site would represent a direct source of GHG emissions. Indirect GHG emissions would be generated through the increase in electricity use, natural gas use, and water use associated with the expansion of the storage yard. Direct and indirect GHG emissions were quantified for operation of the Proposed Project.

Direct GHG emissions would be generated by motor vehicle exhaust released through employee commuting. The CARB developed the EMFAC2017 emissions model for use as a tool in estimating mobile source GHG emissions. The EMFAC2017 emissions model contains emission factors for CO_2, CH_4, and N_2O based on vehicle miles traveled (VMT). Daily VMT associated with operational employee trips were estimated using regional surveys conducted by CAPCOA that were compiled in the formulation of the CalEEMod software. The CalEEMod default average trip length for work trips within Los Angeles County is 16.6 miles, which results in total daily VMT of 3,552.4 miles. For the purposes of the emissions analysis it was conservatively assumed that all employees would commute individually. Annual direct GHG emissions from motor vehicle exhaust in 2023 would be approximately 379 $MTCO_2e$. As mandatory CARB programs related to fuel and engine efficiency are implemented in the future, direct GHG emissions from motor vehicles will decrease.

Indirect GHG emissions during operation of the Proposed Project would result from the increase in provision of energy resources, including electricity, natural gas, and water. GHG emissions are indirectly generated through the production of electricity, the burning of natural gas, and generating the electricity used for conveyance of water throughout the LADWP distribution system. Under existing conditions, the Project Site accommodates 104 rail cars, and as of 2016 the annual energy demand for the rail yard was approximately 14,338.7 megawatt-hours (MWh) of electricity, approximately 9,780 therms of natural gas, and approximately 3.2 million gallons (Mgal) of water according to correspondence with Metro. The energy resources demand was linearly extrapolated based on the ratio of storage capacity for 282 cars in the future operational condition relative to 104 cars in the existing condition. Annual operation of the Proposed Project in 2023 would require approximately 38,879.9 MWh of electricity, approximately 26,518.8 therms of natural gas, and approximately 8.7 Mgal of water.

Table 5 presents the results of GHG emissions modeling for operation of the Proposed Project. The data include amortized construction emissions. GHG emissions associated with electricity were estimated using the 2015 LADWP CO_2 intensity factor value of 1,132 pounds CO_2 per MWh (lb CO_2/MWh) and the CalEEMod regional survey data values of 0.029 lb CH_4/MWh and 0.00617 lb N_2O/MWh. GHG emissions associated with natural gas use were estimated using the CalEEMod regional survey data values of 11.76 lb CO_2/therm, 0.000225 lb CH_4/therm, and 0.000216 lb N_2O/therm. GHG emissions associated with water conveyance were estimated using the CalEEMod electricity intensity factor of 13.02 MWh/Mgal and the emission intensity factors stated above for electricity use. As shown in Table 5, annual operation of the Proposed Project would generate approximately 20,708.9 $MTCO_2e$.

Table 5 Estimated GHG Emissions – Proposed Project Operation

Source Category	Emissions (Metric Tons CO_2 Equivalents)
Construction (Amortized)	**122.8**
Mobile Vehicle Trips	**379.0**
Direct Electricity Use	**20,006.7**
Direct Natural Gas Combustion	**142.3**
Indirect Electricity Use from Water Conveyance	**58.1**
Total Annual GHG Emissions	**20,708.9**
NET GHG EMISSIONS ANALYSIS	
Existing Conditions Energy-Related GHG Emissions	**7,452.3**
Reduction in Regional Transportation GHG Emissions (WPLE)	**33,215.0**
Net Annual Emissions	**-19,958.4**
Note: Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span. **SOURCE**: TAHA, 2017.	

Note: Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span.

Source: **Terry A. Hayes Associates Inc., 2017(b).**

The Proposed Project would allow Metro to operate the Purple Line Extension at full capacity and improve headways for the Purple and Red Lines. According to the Record of Decision, the Metro Purple Line Extension, "will reduce congestion by providing reliable, higher speed transit service." The GHG emissions analysis for the Proposed Project would allow Metro to operate the Purple Line Extension. Metro has determined that annual regional GHG emissions would be reduced by approximately 33,215 $MTCO_2e$ as a result of the Purple Line Extension. Additionally, existing energy resource consumption at the Project Site currently generates approximately 7,452.3 $MTCO_2e$ annually. As the effects of GHG emissions on regional and global climate change are cumulative in nature, it is appropriate to consider the net change in regional GHG emissions resulting from implementation of the Proposed Project in conjunction with the Purple Line Extension. Ultimately, implementation of the Proposed Project and the Purple Line Extension would reduce regional GHG emissions by approximately 19,958.4 $MTCO_2e$ annually.

Therefore, implementation of the Proposed Project would not have the potential to generate direct or indirect GHG emissions that may have a significant impact on the environment; impacts would be less than significant.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

GHG-2 Would the Proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

Less-Than-Significant Impact. The following analysis addresses the potential for impacts during construction and operational activities. In recognition of the extensive regulatory framework adopted to reduce GHG emissions, Metro prepared a Countywide Sustainability Plan to highlight sustainable features of the Proposed Project that are in line with Metro sustainability policies. The Countywide Sustainability Plan also

recommends design, construction, and maintenance features and technologies that could be realistically incorporated to maximize the sustainable potential.

Construction

As discussed previously, GHG emissions are regionally cumulative in nature and it is highly unlikely construction of any individual project would generate GHG emissions of sufficient quantity to conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Metro is committed to enhancing regional sustainability, and the expansion of the public transit system is consistent with regional efforts to provide alternative modes of transportation in lieu of passenger vehicles. Construction activities would be conducted in accordance with the stringent best management practices set forth in the Metro Green Construction Policy, such as restrictions on vehicle and equipment idling and scheduling of construction activities that affect traffic flow on the arterial system to off-peak hours to the extent feasible.

Standard construction procedures would be undertaken in accordance with SCAQMD and CARB regulations applicable to heavy duty construction equipment and diesel haul trucks. Adhering to requirements pertinent to equipment maintenance and inspections and emissions standards, as well as diesel fleet requirements related to idling restrictions, would ensure that construction of the Proposed Project would not conflict with GHG emissions reductions efforts. Additionally, the Proposed Project will give competitive preference for construction products and services that conserve natural resources, such as recycled materials. Impacts would be less than significant.

Operation

Operation of the Proposed Project would involve train travel through the expanded Division 20 Rail Yard portal and storage of rail cars within the existing and proposed turnback facilities. Implementation of the Proposed Project would increase the number of trains stored in the Division 20 Rail Yard from 104 to 282. However, the trains are powered by electric propulsion and do not constitute mobile sources of GHG emissions. There would be approximately 107 additional employees at the Project Site after completion of the Proposed Project. Employees would arrive through a combination of single-occupancy vehicles, carpools, and public transit. Annual direct GHG emissions associated with employee commuting would be no greater than approximately 379 $MTCO_2e$. Annual indirect GHG emissions associated with energy consumption would be approximately 20,207 $MTCO_2e$. However, when accounting for reductions in regional GHG emissions as a result of the Purple Line Extension that the Proposed Project will be accommodating, there would be a net cumulative reduction of approximately -19,958 $MTCO_2e$ annually.

In addition, the Proposed Project would allow Metro to operate the Purple Line Extension at full capacity and improve headways for the Purple and Red Lines. The Purple Line Extension would extend the existing Metro Purple Line heavy rail transit subway from its current terminus at Wilshire/Western Station to a new western terminus near the West Los Angeles Veterans Administration Hospital. According to the Record of Decision, the Metro Purple Line Extension, "will reduce congestion by providing reliable, higher speed transit service. During peak periods, rail operating speeds are faster than speeds for a comparable trip by automobile, providing more reliability in travel time variation. The improved convenience of transit improvements in the corridor would encourage use of a public transit alternative that would reduce daily vehicle trips, VMT, and

congestion on roadways."[10] Importantly for regional GHG emissions, the Proposed Project would assist in reductions in regional VMT and associated emissions.

Reducing regional VMT and associated GHG emissions is the primary objective of the SCAG 2016–2040 RTP/SCS. The entirety of the Purple Line Extension was incorporated into the regional transportation and GHG emissions analyses for the 2016–2040 RTP/SCS and is included in the Project Listing. The Proposed Project would provide the necessary storage capacity infrastructure to accommodate the Purple Line Extension. Enhancing and expanding the Metro public transit network is at the crux of reducing regional VMT and associated GHG emissions, which is the top priority of the regional and local transportation and sustainability plans, as well as the CARB Scoping Plan. Therefore, implementation of the Proposed Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions and would be directly contributory to regional efforts to improve sustainability and reduce VMT. This impact would be less than significant.

Mitigation Measures

This impact would be less than significant and does not require mitigation measures.

[10]FTA, *Environmental Record of Decision for the Westside Subway Extension,* August 9, 2012.

Appendix A

Emissions Calculations:

CalEEMod Output – Daily Construction Emissions

CalEEMod Output – Annual Construction Emissions

CalEEMod Output – Daily Construction Emissions for the High Speed Rail Column

CalEEMod Output – Annual Construction Emissions for the High Speed Rail Column

Calculation Sheet – Operational Mobile Trip Emissions

Calculation Sheet – Operational Energy Use Emissions

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Appendix A

CalEEMod Output – Daily Construction Emissions

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LACMTA Division 20 Portal Widening & Turnback Facility

Los Angeles-South Coast County, Summer

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	10.25	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - Construction Only

Land Use - Total Disturbed Area ~ 10.25 acres.

Construction Phase - LACMTA Schedule.

Off-road Equipment - Maximum Daily Activity

Off-road Equipment - Maximum Daily Activity

Off-road Equipment - Maximum Daily Activity.

Off-road Equipment - Maximum Daily Activity.

Demolition - Remove 306,875 square feet of existing structures.

Grading - Excavate approximately 100,000 cubic yards.

Trips and VMT - Max Daily Workers: 40 = 80 one-way trips.
Max Daily Demo Haul: 15 trucks = 30 one-way trips x 100 days = 3,000 trips.
Max Daily Excav Haul: 25 trucks = 50 one-way trips x 250 days = 12,500 trips.
Max Daily Deliveries: 20 trucks = 40 one-way trips.

Fleet Mix - Construction Only

Energy Use -

Construction Off-road Equipment Mitigation - Metro Green Construction Policy Requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	100	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
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
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tblConstructionPhase	NumDays	300.00	430.00
tblConstructionPhase	NumDays	300.00	430.00
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	30.00	250.00
tblGrading	MaterialExported	0.00	100,000.00
tblLandUse	LotAcreage	0.00	10.25
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		3. Storage Track Installation & MOW Reno
tblOffRoadEquipment	PhaseName		3. Storage Track Installation & MOW Reno
tblTripsAndVMT	HaulingTripNumber	1,396.00	3,000.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	80.00
tblTripsAndVMT	WorkerTripNumber	20.00	80.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	5.6084	70.1281	40.4992	0.1117	11.2384	2.4466	13.6850	4.2646	2.2529	6.5175	0.0000	11,432.9406	11,432.9406	2.2737	0.0000	11,489.7820
2020	5.2550	64.8365	38.6469	0.1109	11.0685	2.2273	13.2958	4.2229	2.0508	6.2737	0.0000	11,225.9147	11,225.9147	2.2634	0.0000	11,282.4984
2021	3.1260	27.2164	27.4358	0.0560	1.1503	1.2979	2.4482	0.3109	1.2246	1.5355	0.0000	5,451.6404	5,451.6404	0.9069	0.0000	5,474.3117
2022	2.8304	24.7249	26.8606	0.0556	1.1503	1.0953	2.2456	0.3109	1.0342	1.3451	0.0000	5,411.2816	5,411.2816	0.8952	0.0000	5,433.6620
2023	2.2135	18.8003	21.5272	0.0479	1.1503	0.7649	1.9152	0.3109	0.7229	1.0338	0.0000	4,665.1030	4,665.1030	0.7078	0.0000	4,682.7975
Maximum	**5.6084**	**70.1281**	**40.4992**	**0.1117**	**11.2384**	**2.4466**	**13.6850**	**4.2646**	**2.2529**	**6.5175**	**0.0000**	**11,432.9406**	**11,432.9406**	**2.2737**	**0.0000**	**11,489.7820**

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2019	1.6311	18.9079	40.1216	0.1117	5.9201	0.1655	6.0855	2.0665	0.1624	2.2289	0.0000	11,432.9406	11,432.9406	2.2737	0.0000	11,489.7820
2020	1.5665	17.9390	39.6877	0.1109	5.7502	0.1549	5.9051	2.0248	0.1523	2.1772	0.0000	11,225.9146	11,225.9146	2.2634	0.0000	11,282.4984
2021	0.9287	8.1414	28.2643	0.0560	1.1503	0.0698	1.2201	0.3109	0.0689	0.3798	0.0000	5,451.6404	5,451.6404	0.9069	0.0000	5,474.3117
2022	0.8995	7.9282	27.9602	0.0556	1.1503	0.0686	1.2189	0.3109	0.0678	0.3786	0.0000	5,411.2816	5,411.2816	0.8952	0.0000	5,433.6620
2023	0.7579	6.2336	22.5623	0.0479	1.1503	0.0538	1.2041	0.3109	0.0531	0.3640	0.0000	4,665.1030	4,665.1030	0.7078	0.0000	4,682.7975
Maximum	**1.6311**	**18.9079**	**40.1216**	**0.1117**	**5.9201**	**0.1655**	**6.0855**	**2.0665**	**0.1624**	**2.2289**	**0.0000**	**11,432.9406**	**11,432.9406**	**2.2737**	**0.0000**	**11,489.7820**

	ROG	NOx	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	**69.61**	**71.25**	**-2.34**	**0.00**	**41.29**	**93.46**	**53.46**	**46.67**	**93.08**	**66.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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
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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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
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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1. Portal Demo & Widening	Demolition	3/4/2019	7/19/2019	5	100	Demolish & redevelop portal.
2	2. Excavation & Grading	Grading	7/22/2019	7/3/2020	5	250	Excavate ~100,000 CY & level site.
3	3. Storage Track Installation & MOW Reno	Building Construction	7/6/2020	2/25/2022	5	430	Install tracks/U-shape; Renovate MOW.
4	4. Turnback Facility Construction	Building Construction	2/28/2022	10/20/2023	5	430	Construct south storage yard.

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 Division 20 Portal Widening & Turnback Facility - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
1. Portal Demo & Widening	Concrete/Industrial Saws	3	8.00	81	0.73
1. Portal Demo & Widening	Excavators	3	8.00	158	0.38
1. Portal Demo & Widening	Rubber Tired Dozers	2	8.00	247	0.40
2. Excavation & Grading	Excavators	2	8.00	158	0.38
2. Excavation & Grading	Graders	1	8.00	187	0.41
2. Excavation & Grading	Rubber Tired Dozers	1	8.00	247	0.40
2. Excavation & Grading	Scrapers	2	8.00	367	0.48
2. Excavation & Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
3. Storage Track Installation & MOW Reno	Aerial Lifts	1	4.00	63	0.31
3. Storage Track Installation & MOW Reno	Air Compressors	1	4.00	78	0.48
3. Storage Track Installation & MOW Reno	Cranes	1	7.00	231	0.29
3. Storage Track Installation & MOW Reno	Forklifts	4	8.00	89	0.20
3. Storage Track Installation & MOW Reno	Generator Sets	1	8.00	84	0.74
3. Storage Track Installation & MOW Reno	Tractors/Loaders/Backhoes	4	7.00	97	0.37
3. Storage Track Installation & MOW Reno	Welders	2	8.00	46	0.45
4. Turnback Facility Construction	Cranes	1	7.00	231	0.29
4. Turnback Facility Construction	Forklifts	3	8.00	89	0.20
4. Turnback Facility Construction	Generator Sets	1	8.00	84	0.74
4. Turnback Facility Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
4. Turnback Facility 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
1. Portal Demo & Widening	8	80.00	0.00	3,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
2. Excavation & Grading	8	80.00	0.00	12,500.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
3. Storage Track Installation & MOW B	14	80.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
4. Turnback Facility Construction	10	80.00	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

Reduce Vehicle Speed on Unpaved Roads

3.2 1. Portal Demo & Widening - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0207	0.0000	3.0207	0.4574	0.0000	0.4574			0.0000			0.0000
Off-Road	4.4373	42.9601	29.4644	0.0513		2.2538	2.2538		2.1285	2.1285		5,002.2307	5,002.2307	1.1453		5,030.8622
Total	**4.4373**	**42.9601**	**29.4644**	**0.0513**	**3.0207**	**2.2538**	**5.2745**	**0.4574**	**2.1285**	**2.5859**		**5,002.2307**	**5,002.2307**	**1.1453**		**5,030.8622**

3.2 1. Portal Demo & Widening - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2819	9.1885	1.9591	0.0240	0.5245	0.0337	0.5582	0.1438	0.0323	0.1760		2,593.5353	2,593.5353	0.1786		2,598.0006
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3997	0.2937	3.8573	9.7500e-003	0.8942	7.7100e-003	0.9019	0.2372	7.1100e-003	0.2443		970.3623	970.3623	0.0333		971.1956
Total	**0.6816**	**9.4822**	**5.8164**	**0.0337**	**1.4187**	**0.0414**	**1.4602**	**0.3809**	**0.0394**	**0.4203**		**3,563.8976**	**3,563.8976**	**0.2119**		**3,569.1962**

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	lb/day										lb/day					
Fugitive Dust					1.1781	0.0000	1.1781	0.1784	0.0000	0.1784			0.0000			0.0000
Off-Road	0.5874	2.5455	30.9971	0.0513		0.0783	0.0783		0.0783	0.0783	0.0000	5,002.2307	5,002.2307	1.1453		5,030.8622
Total	**0.5874**	**2.5455**	**30.9971**	**0.0513**	**1.1781**	**0.0783**	**1.2564**	**0.1784**	**0.0783**	**0.2567**	**0.0000**	**5,002.2307**	**5,002.2307**	**1.1453**		**5,030.8622**

3.2 1. Portal Demo & Widening - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2819	9.1885	1.9591	0.0240	0.5245	0.0337	0.5582	0.1438	0.0323	0.1760		2,593.5353	2,593.5353	0.1786		2,598.0006
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3997	0.2937	3.8573	9.7500e-003	0.8942	7.7100e-003	0.9019	0.2372	7.1100e-003	0.2443		970.3623	970.3623	0.0333		971.1956
Total	**0.6816**	**9.4822**	**5.8164**	**0.0337**	**1.4187**	**0.0414**	**1.4602**	**0.3809**	**0.0394**	**0.4203**		**3,563.8976**	**3,563.8976**	**0.2119**		**3,569.1962**

3.3 2. Excavation & Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7186	0.0000	8.7186	3.6034	0.0000	3.6034			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.7186**	**2.3827**	**11.1012**	**3.6034**	**2.1920**	**5.7954**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 2. Excavation & Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4699	15.3142	3.2651	0.0400	1.6257	0.0562	1.6818	0.4241	0.0538	0.4778		4,322.5588	4,322.5588	0.2977		4,330.0010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3997	0.2937	3.8573	9.7500e-003	0.8942	7.7100e-003	0.9019	0.2372	7.1100e-003	0.2443		970.3623	970.3623	0.0333		971.1956
Total	**0.8695**	**15.6079**	**7.1224**	**0.0497**	**2.5199**	**0.0639**	**2.5838**	**0.6612**	**0.0609**	**0.7221**		**5,292.9211**	**5,292.9211**	**0.3310**		**5,301.1966**

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	lb/day										lb/day					
Fugitive Dust					3.4002	0.0000	3.4002	1.4053	0.0000	1.4053			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**3.4002**	**0.1015**	**3.5018**	**1.4053**	**0.1015**	**1.5069**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 2. Excavation & Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4699	15.3142	3.2651	0.0400	1.6257	0.0562	1.6818	0.4241	0.0538	0.4778		4,322.5588	4,322.5588	0.2977		4,330.0010
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3997	0.2937	3.8573	9.7500e-003	0.8942	7.7100e-003	0.9019	0.2372	7.1100e-003	0.2443		970.3623	970.3623	0.0333		971.1956
Total	**0.8695**	**15.6079**	**7.1224**	**0.0497**	**2.5199**	**0.0639**	**2.5838**	**0.6612**	**0.0609**	**0.7221**		**5,292.9211**	**5,292.9211**	**0.3310**		**5,301.1966**

3.3 2. Excavation & Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7186	0.0000	8.7186	3.6034	0.0000	3.6034			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7186**	**2.1739**	**10.8925**	**3.6034**	**2.0000**	**5.6033**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 2. Excavation & Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4368	14.3770	3.1858	0.0395	1.4558	0.0459	1.5016	0.3824	0.0439	0.4263		4,279.1591	4,279.1591	0.2913		4,286.4408
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3682	0.2619	3.5028	9.4500e-003	0.8942	7.4700e-003	0.9017	0.2372	6.8900e-003	0.2440		940.8903	940.8903	0.0297		941.6319
Total	**0.8049**	**14.6390**	**6.6886**	**0.0489**	**2.3500**	**0.0534**	**2.4033**	**0.6195**	**0.0508**	**0.6703**		**5,220.0494**	**5,220.0494**	**0.3209**		**5,228.0727**

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	lb/day										lb/day					
Fugitive Dust					3.4002	0.0000	3.4002	1.4053	0.0000	1.4053			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0620		0.1015	0.1015		0.1015	0.1015	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**0.7616**	**3.3000**	**32.9991**	**0.0620**	**3.4002**	**0.1015**	**3.5018**	**1.4053**	**0.1015**	**1.5069**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 2. Excavation & Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4368	14.3770	3.1858	0.0395	1.4558	0.0459	1.5016	0.3824	0.0439	0.4263		4,279.1591	4,279.1591	0.2913		4,286.4408
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3682	0.2619	3.5028	9.4500e-003	0.8942	7.4700e-003	0.9017	0.2372	6.8900e-003	0.2440		940.8903	940.8903	0.0297		941.6319
Total	**0.8049**	**14.6390**	**6.6886**	**0.0489**	**2.3500**	**0.0534**	**2.4033**	**0.6195**	**0.0508**	**0.6703**		**5,220.0494**	**5,220.0494**	**0.3209**		**5,228.0727**

3.4 3. Storage Track Installation & MOW Reno - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9705	25.3413	23.5586	0.0365		1.4982	1.4982		1.4139	1.4139		3,440.6860	3,440.6860	0.8273		3,461.3695
Total	**2.9705**	**25.3413**	**23.5586**	**0.0365**		**1.4982**	**1.4982**		**1.4139**	**1.4139**		**3,440.6860**	**3,440.6860**	**0.8273**		**3,461.3695**

3.4 3. Storage Track Installation & MOW Reno - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1423	4.2549	1.1148	0.0104	0.2561	0.0200	0.2761	0.0737	0.0192	0.0929		1,108.0988	1,108.0988	0.0676		1,109.7893
Worker	0.3682	0.2619	3.5028	9.4500e-003	0.8942	7.4700e-003	0.9017	0.2372	6.8900e-003	0.2440		940.8903	940.8903	0.0297		941.6319
Total	**0.5104**	**4.5168**	**4.6176**	**0.0198**	**1.1503**	**0.0275**	**1.1778**	**0.3109**	**0.0261**	**0.3369**		**2,048.9891**	**2,048.9891**	**0.0973**		**2,051.4212**

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	lb/day										lb/day					
Off-Road	0.4642	4.0221	24.0268	0.0365		0.0547	0.0547		0.0547	0.0547	0.0000	3,440.6860	3,440.6860	0.8273		3,461.3695
Total	**0.4642**	**4.0221**	**24.0268**	**0.0365**		**0.0547**	**0.0547**		**0.0547**	**0.0547**	**0.0000**	**3,440.6860**	**3,440.6860**	**0.8273**		**3,461.3695**

3.4 3. Storage Track Installation & MOW Reno - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1423	4.2549	1.1148	0.0104	0.2561	0.0200	0.2761	0.0737	0.0192	0.0929		1,108.0988	1,108.0988	0.0676		1,109.7893
Worker	0.3682	0.2619	3.5028	9.4500e-003	0.8942	7.4700e-003	0.9017	0.2372	6.8900e-003	0.2440		940.8903	940.8903	0.0297		941.6319
Total	**0.5104**	**4.5168**	**4.6176**	**0.0198**	**1.1503**	**0.0275**	**1.1778**	**0.3109**	**0.0261**	**0.3369**		**2,048.9891**	**2,048.9891**	**0.0973**		**2,051.4212**

3.4 3. Storage Track Installation & MOW Reno - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6615	23.0972	23.1983	0.0365		1.2827	1.2827		1.2104	1.2104		3,441.1020	3,441.1020	0.8152		3,461.4828
Total	**2.6615**	**23.0972**	**23.1983**	**0.0365**		**1.2827**	**1.2827**		**1.2104**	**1.2104**		**3,441.1020**	**3,441.1020**	**0.8152**		**3,461.4828**

3.4 3. Storage Track Installation & MOW Reno - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1216	3.8836	1.0153	0.0103	0.2561	7.9400e-003	0.2640	0.0737	7.5900e-003	0.0813		1,099.5225	1,099.5225	0.0648		1,101.1419
Worker	0.3429	0.2357	3.2222	9.1500e-003	0.8942	7.2300e-003	0.9014	0.2372	6.6600e-003	0.2438		911.0159	911.0159	0.0268		911.6870
Total	**0.4645**	**4.1193**	**4.2375**	**0.0194**	**1.1503**	**0.0152**	**1.1655**	**0.3109**	**0.0143**	**0.3251**		**2,010.5384**	**2,010.5384**	**0.0916**		**2,012.8289**

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	lb/day										lb/day					
Off-Road	0.4642	4.0221	24.0268	0.0365		0.0547	0.0547		0.0547	0.0547	0.0000	3,441.1020	3,441.1020	0.8152		3,461.4828
Total	**0.4642**	**4.0221**	**24.0268**	**0.0365**		**0.0547**	**0.0547**		**0.0547**	**0.0547**	**0.0000**	**3,441.1020**	**3,441.1020**	**0.8152**		**3,461.4828**

3.4 3. Storage Track Installation & MOW Reno - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1216	3.8836	1.0153	0.0103	0.2561	7.9400e-003	0.2640	0.0737	7.5900e-003	0.0813		1,099.5225	1,099.5225	0.0648		1,101.1419
Worker	0.3429	0.2357	3.2222	9.1500e-003	0.8942	7.2300e-003	0.9014	0.2372	6.6600e-003	0.2438		911.0159	911.0159	0.0268		911.6870
Total	**0.4645**	**4.1193**	**4.2375**	**0.0194**	**1.1503**	**0.0152**	**1.1655**	**0.3109**	**0.0143**	**0.3251**		**2,010.5384**	**2,010.5384**	**0.0916**		**2,012.8289**

3.4 3. Storage Track Installation & MOW Reno - 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	lb/day										lb/day					
Off-Road	2.3951	20.8188	22.9272	0.0366		1.0813	1.0813		1.0211	1.0211		3,442.3682	3,442.3682	0.8084		3,462.5784
Total	**2.3951**	**20.8188**	**22.9272**	**0.0366**		**1.0813**	**1.0813**		**1.0211**	**1.0211**		**3,442.3682**	**3,442.3682**	**0.8084**		**3,462.5784**

3.4 3. Storage Track Installation & MOW Reno - 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1141	3.6932	0.9606	0.0102	0.2561	6.9400e-003	0.2630	0.0737	6.6400e-003	0.0804		1,089.9436	1,089.9436	0.0626		1,091.5072
Worker	0.3212	0.2129	2.9728	8.8200e-003	0.8942	7.0000e-003	0.9012	0.2372	6.4500e-003	0.2436		878.9699	878.9699	0.0243		879.5764
Total	**0.4353**	**3.9061**	**3.9334**	**0.0190**	**1.1503**	**0.0139**	**1.1642**	**0.3109**	**0.0131**	**0.3240**		**1,968.9134**	**1,968.9134**	**0.0868**		**1,971.0836**

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	lb/day										lb/day					
Off-Road	0.4642	4.0221	24.0268	0.0366		0.0547	0.0547		0.0547	0.0547	0.0000	3,442.3682	3,442.3682	0.8084		3,462.5784
Total	**0.4642**	**4.0221**	**24.0268**	**0.0366**		**0.0547**	**0.0547**		**0.0547**	**0.0547**	**0.0000**	**3,442.3682**	**3,442.3682**	**0.8084**		**3,462.5784**

3.4 3. Storage Track Installation & MOW Reno - 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1141	3.6932	0.9606	0.0102	0.2561	6.9400e-003	0.2630	0.0737	6.6400e-003	0.0804		1,089.9436	1,089.9436	0.0626		1,091.5072
Worker	0.3212	0.2129	2.9728	8.8200e-003	0.8942	7.0000e-003	0.9012	0.2372	6.4500e-003	0.2436		878.9699	878.9699	0.0243		879.5764
Total	**0.4353**	**3.9061**	**3.9334**	**0.0190**	**1.1503**	**0.0139**	**1.1642**	**0.3109**	**0.0131**	**0.3240**		**1,968.9134**	**1,968.9134**	**0.0868**		**1,971.0836**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Off-Road	1.9830	17.0785	18.0592	0.0295		0.8729	0.8729		0.8251	0.8251		2,761.8113	2,761.8113	0.6368		2,777.7306
Total	**1.9830**	**17.0785**	**18.0592**	**0.0295**		**0.8729**	**0.8729**		**0.8251**	**0.8251**		**2,761.8113**	**2,761.8113**	**0.6368**		**2,777.7306**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1141	3.6932	0.9606	0.0102	0.2561	6.9400e-003	0.2630	0.0737	6.6400e-003	0.0804		1,089.9436	1,089.9436	0.0626		1,091.5072
Worker	0.3212	0.2129	2.9728	8.8200e-003	0.8942	7.0000e-003	0.9012	0.2372	6.4500e-003	0.2436		878.9699	878.9699	0.0243		879.5764
Total	**0.4353**	**3.9061**	**3.9334**	**0.0190**	**1.1503**	**0.0139**	**1.1642**	**0.3109**	**0.0131**	**0.3240**		**1,968.9134**	**1,968.9134**	**0.0868**		**1,971.0836**

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	lb/day										lb/day					
Off-Road	0.3716	3.2387	18.9571	0.0295		0.0437	0.0437		0.0437	0.0437	0.0000	2,761.8113	2,761.8113	0.6368		2,777.7306
Total	**0.3716**	**3.2387**	**18.9571**	**0.0295**		**0.0437**	**0.0437**		**0.0437**	**0.0437**	**0.0000**	**2,761.8113**	**2,761.8113**	**0.6368**		**2,777.7306**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1141	3.6932	0.9606	0.0102	0.2561	6.9400e-003	0.2630	0.0737	6.6400e-003	0.0804		1,089.9436	1,089.9436	0.0626		1,091.5072
Worker	0.3212	0.2129	2.9728	8.8200e-003	0.8942	7.0000e-003	0.9012	0.2372	6.4500e-003	0.2436		878.9699	878.9699	0.0243		879.5764
Total	**0.4353**	**3.9061**	**3.9334**	**0.0190**	**1.1503**	**0.0139**	**1.1642**	**0.3109**	**0.0131**	**0.3240**		**1,968.9134**	**1,968.9134**	**0.0868**		**1,971.0836**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Off-Road	1.8272	15.8054	17.9219	0.0295		0.7549	0.7549		0.7136	0.7136		2,762.6877	2,762.6877	0.6305		2,778.4497
Total	**1.8272**	**15.8054**	**17.9219**	**0.0295**		**0.7549**	**0.7549**		**0.7136**	**0.7136**		**2,762.6877**	**2,762.6877**	**0.6305**		**2,778.4497**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0847	2.8023	0.8675	9.8500e-003	0.2561	3.2400e-003	0.2593	0.0737	3.0900e-003	0.0768		1,055.6297	1,055.6297	0.0554		1,057.0154
Worker	0.3017	0.1926	2.7377	8.5000e-003	0.8942	6.8000e-003	0.9010	0.2372	6.2600e-003	0.2434		846.7856	846.7856	0.0219		847.3324
Total	**0.3863**	**2.9949**	**3.6052**	**0.0184**	**1.1503**	**0.0100**	**1.1603**	**0.3109**	**9.3500e-003**	**0.3202**		**1,902.4153**	**1,902.4153**	**0.0773**		**1,904.3478**

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	lb/day										lb/day					
Off-Road	0.3716	3.2387	18.9571	0.0295		0.0437	0.0437		0.0437	0.0437	0.0000	2,762.6877	2,762.6877	0.6305		2,778.4497
Total	**0.3716**	**3.2387**	**18.9571**	**0.0295**		**0.0437**	**0.0437**		**0.0437**	**0.0437**	**0.0000**	**2,762.6877**	**2,762.6877**	**0.6305**		**2,778.4497**

3.5 4. Turnback Facility 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0847	2.8023	0.8675	9.8500e-003	0.2561	3.2400e-003	0.2593	0.0737	3.0900e-003	0.0768		1,055.6297	1,055.6297	0.0554		1,057.0154
Worker	0.3017	0.1926	2.7377	8.5000e-003	0.8942	6.8000e-003	0.9010	0.2372	6.2600e-003	0.2434		846.7856	846.7856	0.0219		847.3324
Total	**0.3863**	**2.9949**	**3.6052**	**0.0184**	**1.1503**	**0.0100**	**1.1603**	**0.3109**	**9.3500e-003**	**0.3202**		**1,902.4153**	**1,902.4153**	**0.0773**		**1,904.3478**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	lb/day										lb/day					
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
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**

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	lb/day										lb/day					
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
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**

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	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	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
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	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
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix A

CalEEMod Output – Annual Construction Emissions

#

LACMTA Division 20 Portal Widening & Turnback Facility

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	10.25	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - Construction Only

Land Use - Total Disturbed Area ~ 10.25 acres.

Construction Phase - LACMTA Schedule.

Off-road Equipment - Maximum Daily Activity

Off-road Equipment - Maximum Daily Activity

Off-road Equipment - Maximum Daily Activity.

Off-road Equipment - Maximum Daily Activity.

Demolition - Remove 306,875 square feet of existing structures.

Grading - Excavate approximately 100,000 cubic yards.

Trips and VMT - Max Daily Workers: 40 = 80 one-way trips.
Max Daily Demo Haul: 15 trucks = 30 one-way trips x 100 days = 3,000 trips.
Max Daily Excav Haul: 25 trucks = 50 one-way trips x 250 days = 12,500 trips.
Max Daily Deliveries: 20 trucks = 40 one-way trips.

Fleet Mix - Construction Only

Energy Use -

Construction Off-road Equipment Mitigation - Metro Green Construction Policy Requirements.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	100	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
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
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	300.00	430.00
tblConstructionPhase	NumDays	300.00	430.00
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	30.00	250.00
tblGrading	MaterialExported	0.00	100,000.00
tblLandUse	LotAcreage	0.00	10.25
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		3. Storage Track Installation & MOW Reno
tblOffRoadEquipment	PhaseName		3. Storage Track Installation & MOW Reno
tblTripsAndVMT	HaulingTripNumber	1,396.00	3,000.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	20.00	80.00
tblTripsAndVMT	WorkerTripNumber	20.00	80.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00
tblTripsAndVMT	WorkerTripNumber	0.00	80.00

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					
2019	0.5846	6.7741	4.1173	0.0107	1.0545	0.2579	1.3124	0.3099	0.2402	0.5501	0.0000	988.7498	988.7498	0.1825	0.0000	993.3120
2020	0.5746	6.2787	4.3695	0.0109	0.9636	0.2466	1.2101	0.3169	0.2293	0.5462	0.0000	991.0634	991.0634	0.1909	0.0000	995.8356
2021	0.4085	3.5643	3.5619	7.2400e-003	0.1473	0.1694	0.3167	0.0399	0.1598	0.1997	0.0000	639.2980	639.2980	0.1074	0.0000	641.9841
2022	0.3232	2.8140	2.9391	6.3800e-003	0.1467	0.1195	0.2662	0.0397	0.1129	0.1526	0.0000	564.3438	564.3438	0.0885	0.0000	566.5571
2023	0.2328	1.9801	2.2463	4.9700e-003	0.1185	0.0803	0.1988	0.0321	0.0759	0.1080	0.0000	439.7809	439.7809	0.0675	0.0000	441.4674
Maximum	**0.5846**	**6.7741**	**4.3695**	**0.0109**	**1.0545**	**0.2579**	**1.3124**	**0.3169**	**0.2402**	**0.5501**	**0.0000**	**991.0634**	**991.0634**	**0.1909**	**0.0000**	**995.8356**

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					
2019	0.1594	1.7570	4.1718	0.0107	0.5419	0.0157	0.5576	0.1554	0.0154	0.1709	0.0000	988.7491	988.7491	0.1825	0.0000	993.3113
2020	0.1677	1.7849	4.4689	0.0109	0.5137	0.0156	0.5293	0.1603	0.0154	0.1757	0.0000	991.0628	991.0628	0.1909	0.0000	995.8350
2021	0.1217	1.0750	3.6700	7.2400e-003	0.1473	9.1300e-003	0.1564	0.0399	9.0100e-003	0.0489	0.0000	639.2975	639.2975	0.1074	0.0000	641.9836
2022	0.1073	0.9557	3.0598	6.3800e-003	0.1467	7.7300e-003	0.1545	0.0397	7.6100e-003	0.0473	0.0000	564.3434	564.3434	0.0885	0.0000	566.5567
2023	0.0800	0.6606	2.3550	4.9700e-003	0.1185	5.6500e-003	0.1242	0.0321	5.5800e-003	0.0377	0.0000	439.7806	439.7806	0.0675	0.0000	441.4671
Maximum	**0.1677**	**1.7849**	**4.4689**	**0.0109**	**0.5419**	**0.0157**	**0.5576**	**0.1603**	**0.0154**	**0.1757**	**0.0000**	**991.0628**	**991.0628**	**0.1909**	**0.0000**	**995.8350**

	ROG	NOx	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	**70.05**	**70.89**	**-2.85**	**0.00**	**39.60**	**93.84**	**53.94**	**42.12**	**93.52**	**69.14**	**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)
5	**1-4-2019**	**4-3-2019**	0.6393	0.1493
6	**4-4-2019**	**7-3-2019**	1.8707	0.4321
7	**7-4-2019**	**10-3-2019**	2.3308	0.6191
8	**10-4-2019**	**1-3-2020**	2.4920	0.6833
9	**1-4-2020**	**4-3-2020**	2.2863	0.6423
10	**4-4-2020**	**7-3-2020**	2.2780	0.6339

11	**7-4-2020**	**10-3-2020**	1.0717	0.3059
12	**10-4-2020**	**1-3-2021**	1.0946	0.3145
13	**1-4-2021**	**4-3-2021**	0.9772	0.2935
14	**4-4-2021**	**7-3-2021**	0.9861	0.2948
15	**7-4-2021**	**10-3-2021**	0.9970	0.2981
16	**10-4-2021**	**1-3-2022**	0.9960	0.2998
17	**1-4-2022**	**4-3-2022**	0.8158	0.2682
18	**4-4-2022**	**7-3-2022**	0.7606	0.2584
19	**7-4-2022**	**10-3-2022**	0.7690	0.2613
20	**10-4-2022**	**1-3-2023**	0.7682	0.2621
21	**1-4-2023**	**4-3-2023**	0.6769	0.2262
22	**4-4-2023**	**7-3-2023**	0.6830	0.2272
23	**7-4-2023**	**9-30-2023**	0.6679	0.2222
		Highest	2.4920	0.6833

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**

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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1. Portal Demo & Widening	Demolition	3/4/2019	7/19/2019	5	100	Demolish & redevelop portal.
2	2. Excavation & Grading	Grading	7/22/2019	7/3/2020	5	250	Excavate ~100,000 CY & level site.
3	3. Storage Track Installation & MOW Reno	Building Construction	7/6/2020	2/25/2022	5	430	Install tracks/U-shape; Renovate MOW.
4	4. Turnback Facility Construction	Building Construction	2/28/2022	10/20/2023	5	430	Construct south storage yard.

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
1. Portal Demo & Widening	Concrete/Industrial Saws	3	8.00	81	0.73
1. Portal Demo & Widening	Excavators	3	8.00	158	0.38
1. Portal Demo & Widening	Rubber Tired Dozers	2	8.00	247	0.40
2. Excavation & Grading	Excavators	2	8.00	158	0.38
2. Excavation & Grading	Graders	1	8.00	187	0.41
2. Excavation & Grading	Rubber Tired Dozers	1	8.00	247	0.40
2. Excavation & Grading	Scrapers	2	8.00	367	0.48
2. Excavation & Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
3. Storage Track Installation & MOW Reno	Aerial Lifts	1	4.00	63	0.31
3. Storage Track Installation & MOW Reno	Air Compressors	1	4.00	78	0.48
3. Storage Track Installation & MOW Reno	Cranes	1	7.00	231	0.29
3. Storage Track Installation & MOW Reno	Forklifts	4	8.00	89	0.20
3. Storage Track Installation & MOW Reno	Generator Sets	1	8.00	84	0.74
3. Storage Track Installation & MOW Reno	Tractors/Loaders/Backhoes	4	7.00	97	0.37
3. Storage Track Installation & MOW Reno	Welders	2	8.00	46	0.45
4. Turnback Facility Construction	Cranes	1	7.00	231	0.29
4. Turnback Facility Construction	Forklifts	3	8.00	89	0.20
4. Turnback Facility Construction	Generator Sets	1	8.00	84	0.74
4. Turnback Facility Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
4. Turnback Facility 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
1. Portal Demo & Widening	8	80.00	0.00	3,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
2. Excavation & Grading	8	80.00	0.00	12,500.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
3. Storage Track Installation & MOW B	14	80.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
4. Turnback Facility Construction	10	80.00	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

Reduce Vehicle Speed on Unpaved Roads

3.2 1. Portal Demo & Widening - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1510	0.0000	0.1510	0.0229	0.0000	0.0229	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2219	2.1480	1.4732	2.5700e-003		0.1127	0.1127		0.1064	0.1064	0.0000	226.8974	226.8974	0.0520	0.0000	228.1961
Total	**0.2219**	**2.1480**	**1.4732**	**2.5700e-003**	**0.1510**	**0.1127**	**0.2637**	**0.0229**	**0.1064**	**0.1293**	**0.0000**	**226.8974**	**226.8974**	**0.0520**	**0.0000**	**228.1961**

3.2 1. Portal Demo & Widening - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0143	0.4747	0.1008	1.1900e-003	0.0258	1.7000e-003	0.0275	7.0800e-003	1.6300e-003	8.7000e-003	0.0000	116.8028	116.8028	8.2400e-003	0.0000	117.0087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0200	0.0167	0.1816	4.7000e-004	0.0438	3.9000e-004	0.0442	0.0116	3.6000e-004	0.0120	0.0000	42.1343	42.1343	1.4500e-003	0.0000	42.1705
Total	**0.0343**	**0.4914**	**0.2824**	**1.6600e-003**	**0.0696**	**2.0900e-003**	**0.0717**	**0.0187**	**1.9900e-003**	**0.0207**	**0.0000**	**158.9371**	**158.9371**	**9.6900e-003**	**0.0000**	**159.1792**

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					0.0589	0.0000	0.0589	8.9200e-003	0.0000	8.9200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0294	0.1273	1.5499	2.5700e-003		3.9200e-003	3.9200e-003		3.9200e-003	3.9200e-003	0.0000	226.8971	226.8971	0.0520	0.0000	228.1958
Total	**0.0294**	**0.1273**	**1.5499**	**2.5700e-003**	**0.0589**	**3.9200e-003**	**0.0628**	**8.9200e-003**	**3.9200e-003**	**0.0128**	**0.0000**	**226.8971**	**226.8971**	**0.0520**	**0.0000**	**228.1958**

3.2 1. Portal Demo & Widening - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0143	0.4747	0.1008	1.1900e-003	0.0258	1.7000e-003	0.0275	7.0800e-003	1.6300e-003	8.7000e-003	0.0000	116.8028	116.8028	8.2400e-003	0.0000	117.0087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0200	0.0167	0.1816	4.7000e-004	0.0438	3.9000e-004	0.0442	0.0116	3.6000e-004	0.0120	0.0000	42.1343	42.1343	1.4500e-003	0.0000	42.1705
Total	**0.0343**	**0.4914**	**0.2824**	**1.6600e-003**	**0.0696**	**2.0900e-003**	**0.0717**	**0.0187**	**1.9900e-003**	**0.0207**	**0.0000**	**158.9371**	**158.9371**	**9.6900e-003**	**0.0000**	**159.1792**

3.3 2. Excavation & Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6894	0.0000	0.6894	0.2303	0.0000	0.2303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2772	3.1894	1.9525	3.6300e-003		0.1394	0.1394		0.1282	0.1282	0.0000	325.8527	325.8527	0.1031	0.0000	328.4301
Total	**0.2772**	**3.1894**	**1.9525**	**3.6300e-003**	**0.6894**	**0.1394**	**0.8287**	**0.2303**	**0.1282**	**0.3585**	**0.0000**	**325.8527**	**325.8527**	**0.1031**	**0.0000**	**328.4301**

3.3 2. Excavation & Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0278	0.9257	0.1966	2.3200e-003	0.0932	3.3100e-003	0.0966	0.0244	3.1700e-003	0.0275	0.0000	227.7655	227.7655	0.0161	0.0000	228.1670
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0234	0.0195	0.2125	5.5000e-004	0.0513	4.5000e-004	0.0517	0.0136	4.2000e-004	0.0140	0.0000	49.2971	49.2971	1.7000e-003	0.0000	49.3395
Total	**0.0512**	**0.9453**	**0.4091**	**2.8700e-003**	**0.1445**	**3.7600e-003**	**0.1483**	**0.0380**	**3.5900e-003**	**0.0416**	**0.0000**	**277.0626**	**277.0626**	**0.0178**	**0.0000**	**277.5065**

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					0.2689	0.0000	0.2689	0.0898	0.0000	0.0898	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0446	0.1931	1.9305	3.6300e-003		5.9400e-003	5.9400e-003		5.9400e-003	5.9400e-003	0.0000	325.8523	325.8523	0.1031	0.0000	328.4297
Total	**0.0446**	**0.1931**	**1.9305**	**3.6300e-003**	**0.2689**	**5.9400e-003**	**0.2748**	**0.0898**	**5.9400e-003**	**0.0958**	**0.0000**	**325.8523**	**325.8523**	**0.1031**	**0.0000**	**328.4297**

3.3 2. Excavation & Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0278	0.9257	0.1966	2.3200e-003	0.0932	3.3100e-003	0.0966	0.0244	3.1700e-003	0.0275	0.0000	227.7655	227.7655	0.0161	0.0000	228.1670
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0234	0.0195	0.2125	5.5000e-004	0.0513	4.5000e-004	0.0517	0.0136	4.2000e-004	0.0140	0.0000	49.2971	49.2971	1.7000e-003	0.0000	49.3395
Total	**0.0512**	**0.9453**	**0.4091**	**2.8700e-003**	**0.1445**	**3.7600e-003**	**0.1483**	**0.0380**	**3.5900e-003**	**0.0416**	**0.0000**	**277.0626**	**277.0626**	**0.0178**	**0.0000**	**277.5065**

3.3 2. Excavation & Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7375	0.0000	0.7375	0.2568	0.0000	0.2568	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2959	3.3381	2.1252	4.1200e-003		0.1446	0.1446		0.1330	0.1330	0.0000	362.3206	362.3206	0.1172	0.0000	365.2501
Total	**0.2959**	**3.3381**	**2.1252**	**4.1200e-003**	**0.7375**	**0.1446**	**0.8821**	**0.2568**	**0.1330**	**0.3898**	**0.0000**	**362.3206**	**362.3206**	**0.1172**	**0.0000**	**365.2501**

3.3 2. Excavation & Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0293	0.9874	0.2176	2.6100e-003	0.0949	3.0700e-003	0.0980	0.0250	2.9400e-003	0.0279	0.0000	256.2851	256.2851	0.0179	0.0000	256.7314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0198	0.2190	6.0000e-004	0.0583	5.0000e-004	0.0588	0.0155	4.6000e-004	0.0159	0.0000	54.3359	54.3359	1.7100e-003	0.0000	54.3787
Total	**0.0539**	**1.0072**	**0.4366**	**3.2100e-003**	**0.1532**	**3.5700e-003**	**0.1568**	**0.0405**	**3.4000e-003**	**0.0439**	**0.0000**	**310.6209**	**310.6209**	**0.0196**	**0.0000**	**311.1100**

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					0.2876	0.0000	0.2876	0.1001	0.0000	0.1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0506	0.2195	2.1944	4.1200e-003		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	362.3201	362.3201	0.1172	0.0000	365.2497
Total	**0.0506**	**0.2195**	**2.1944**	**4.1200e-003**	**0.2876**	**6.7500e-003**	**0.2944**	**0.1001**	**6.7500e-003**	**0.1069**	**0.0000**	**362.3201**	**362.3201**	**0.1172**	**0.0000**	**365.2497**

3.3 2. Excavation & Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0293	0.9874	0.2176	2.6100e-003	0.0949	3.0700e-003	0.0980	0.0250	2.9400e-003	0.0279	0.0000	256.2851	256.2851	0.0179	0.0000	256.7314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0198	0.2190	6.0000e-004	0.0583	5.0000e-004	0.0588	0.0155	4.6000e-004	0.0159	0.0000	54.3359	54.3359	1.7100e-003	0.0000	54.3787
Total	**0.0539**	**1.0072**	**0.4366**	**3.2100e-003**	**0.1532**	**3.5700e-003**	**0.1568**	**0.0405**	**3.4000e-003**	**0.0439**	**0.0000**	**310.6209**	**310.6209**	**0.0196**	**0.0000**	**311.1100**

3.4 3. Storage Track Installation & MOW Reno - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1916	1.6345	1.5195	2.3600e-003		0.0966	0.0966		0.0912	0.0912	0.0000	201.3263	201.3263	0.0484	0.0000	202.5366
Total	**0.1916**	**1.6345**	**1.5195**	**2.3600e-003**		**0.0966**	**0.0966**		**0.0912**	**0.0912**	**0.0000**	**201.3263**	**201.3263**	**0.0484**	**0.0000**	**202.5366**

3.4 3. Storage Track Installation & MOW Reno - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3600e-003	0.2796	0.0757	6.6000e-004	0.0163	1.3000e-003	0.0176	4.6900e-003	1.2400e-003	5.9300e-003	0.0000	64.0940	64.0940	4.0700e-003	0.0000	64.1958
Worker	0.0238	0.0192	0.2124	5.8000e-004	0.0565	4.8000e-004	0.0570	0.0150	4.4000e-004	0.0155	0.0000	52.7017	52.7017	1.6600e-003	0.0000	52.7432
Total	**0.0332**	**0.2988**	**0.2881**	**1.2400e-003**	**0.0728**	**1.7800e-003**	**0.0746**	**0.0197**	**1.6800e-003**	**0.0214**	**0.0000**	**116.7957**	**116.7957**	**5.7300e-003**	**0.0000**	**116.9390**

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	0.0299	0.2594	1.5497	2.3600e-003		3.5300e-003	3.5300e-003		3.5300e-003	3.5300e-003	0.0000	201.3261	201.3261	0.0484	0.0000	202.5363
Total	**0.0299**	**0.2594**	**1.5497**	**2.3600e-003**		**3.5300e-003**	**3.5300e-003**		**3.5300e-003**	**3.5300e-003**	**0.0000**	**201.3261**	**201.3261**	**0.0484**	**0.0000**	**202.5363**

3.4 3. Storage Track Installation & MOW Reno - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3600e-003	0.2796	0.0757	6.6000e-004	0.0163	1.3000e-003	0.0176	4.6900e-003	1.2400e-003	5.9300e-003	0.0000	64.0940	64.0940	4.0700e-003	0.0000	64.1958
Worker	0.0238	0.0192	0.2124	5.8000e-004	0.0565	4.8000e-004	0.0570	0.0150	4.4000e-004	0.0155	0.0000	52.7017	52.7017	1.6600e-003	0.0000	52.7432
Total	**0.0332**	**0.2988**	**0.2881**	**1.2400e-003**	**0.0728**	**1.7800e-003**	**0.0746**	**0.0197**	**1.6800e-003**	**0.0214**	**0.0000**	**116.7957**	**116.7957**	**5.7300e-003**	**0.0000**	**116.9390**

3.4 3. Storage Track Installation & MOW Reno - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3473	3.0142	3.0274	4.7700e-003		0.1674	0.1674		0.1580	0.1580	0.0000	407.3838	407.3838	0.0965	0.0000	409.7967
Total	**0.3473**	**3.0142**	**3.0274**	**4.7700e-003**		**0.1674**	**0.1674**		**0.1580**	**0.1580**	**0.0000**	**407.3838**	**407.3838**	**0.0965**	**0.0000**	**409.7967**

3.4 3. Storage Track Installation & MOW Reno - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.5152	0.1397	1.3300e-003	0.0329	1.0500e-003	0.0339	9.4900e-003	1.0000e-003	0.0105	0.0000	128.6712	128.6712	7.8900e-003	0.0000	128.8685
Worker	0.0449	0.0350	0.3948	1.1400e-003	0.1144	9.4000e-004	0.1153	0.0304	8.7000e-004	0.0313	0.0000	103.2429	103.2429	3.0400e-003	0.0000	103.3189
Total	**0.0611**	**0.5501**	**0.5345**	**2.4700e-003**	**0.1473**	**1.9900e-003**	**0.1493**	**0.0399**	**1.8700e-003**	**0.0417**	**0.0000**	**231.9142**	**231.9142**	**0.0109**	**0.0000**	**232.1874**

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	0.0606	0.5249	3.1355	4.7700e-003		7.1300e-003	7.1300e-003		7.1300e-003	7.1300e-003	0.0000	407.3834	407.3834	0.0965	0.0000	409.7962
Total	**0.0606**	**0.5249**	**3.1355**	**4.7700e-003**		**7.1300e-003**	**7.1300e-003**		**7.1300e-003**	**7.1300e-003**	**0.0000**	**407.3834**	**407.3834**	**0.0965**	**0.0000**	**409.7962**

3.4 3. Storage Track Installation & MOW Reno - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.5152	0.1397	1.3300e-003	0.0329	1.0500e-003	0.0339	9.4900e-003	1.0000e-003	0.0105	0.0000	128.6712	128.6712	7.8900e-003	0.0000	128.8685
Worker	0.0449	0.0350	0.3948	1.1400e-003	0.1144	9.4000e-004	0.1153	0.0304	8.7000e-004	0.0313	0.0000	103.2429	103.2429	3.0400e-003	0.0000	103.3189
Total	**0.0611**	**0.5501**	**0.5345**	**2.4700e-003**	**0.1473**	**1.9900e-003**	**0.1493**	**0.0399**	**1.8700e-003**	**0.0417**	**0.0000**	**231.9142**	**231.9142**	**0.0109**	**0.0000**	**232.1874**

3.4 3. Storage Track Installation & MOW Reno - 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	0.0479	0.4164	0.4585	7.3000e-004		0.0216	0.0216		0.0204	0.0204	0.0000	62.4573	62.4573	0.0147	0.0000	62.8240
Total	**0.0479**	**0.4164**	**0.4585**	**7.3000e-004**		**0.0216**	**0.0216**		**0.0204**	**0.0204**	**0.0000**	**62.4573**	**62.4573**	**0.0147**	**0.0000**	**62.8240**

3.4 3. Storage Track Installation & MOW Reno - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3300e-003	0.0750	0.0203	2.0000e-004	5.0400e-003	1.4000e-004	5.1800e-003	1.4500e-003	1.3000e-004	1.5900e-003	0.0000	19.5465	19.5465	1.1700e-003	0.0000	19.5757
Worker	6.4600e-003	4.8400e-003	0.0558	1.7000e-004	0.0175	1.4000e-004	0.0177	4.6600e-003	1.3000e-004	4.7900e-003	0.0000	15.2665	15.2665	4.2000e-004	0.0000	15.2770
Total	**8.7900e-003**	**0.0799**	**0.0760**	**3.7000e-004**	**0.0226**	**2.8000e-004**	**0.0229**	**6.1100e-003**	**2.6000e-004**	**6.3800e-003**	**0.0000**	**34.8130**	**34.8130**	**1.5900e-003**	**0.0000**	**34.8527**

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	9.2800e-003	0.0804	0.4805	7.3000e-004		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	62.4572	62.4572	0.0147	0.0000	62.8239
Total	**9.2800e-003**	**0.0804**	**0.4805**	**7.3000e-004**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**62.4572**	**62.4572**	**0.0147**	**0.0000**	**62.8239**

3.4 3. Storage Track Installation & MOW Reno - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3300e-003	0.0750	0.0203	2.0000e-004	5.0400e-003	1.4000e-004	5.1800e-003	1.4500e-003	1.3000e-004	1.5900e-003	0.0000	19.5465	19.5465	1.1700e-003	0.0000	19.5757
Worker	6.4600e-003	4.8400e-003	0.0558	1.7000e-004	0.0175	1.4000e-004	0.0177	4.6600e-003	1.3000e-004	4.7900e-003	0.0000	15.2665	15.2665	4.2000e-004	0.0000	15.2770
Total	**8.7900e-003**	**0.0799**	**0.0760**	**3.7000e-004**	**0.0226**	**2.8000e-004**	**0.0229**	**6.1100e-003**	**2.6000e-004**	**6.3800e-003**	**0.0000**	**34.8130**	**34.8130**	**1.5900e-003**	**0.0000**	**34.8527**

3.5 4. Turnback Facility 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	0.2181	1.8786	1.9865	3.2400e-003		0.0960	0.0960		0.0908	0.0908	0.0000	275.6020	275.6020	0.0635	0.0000	277.1906
Total	**0.2181**	**1.8786**	**1.9865**	**3.2400e-003**		**0.0960**	**0.0960**		**0.0908**	**0.0908**	**0.0000**	**275.6020**	**275.6020**	**0.0635**	**0.0000**	**277.1906**

3.5 4. Turnback Facility 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	0.0128	0.4126	0.1114	1.1100e-003	0.0277	7.7000e-004	0.0285	8.0000e-003	7.4000e-004	8.7400e-003	0.0000	107.5059	107.5059	6.4200e-003	0.0000	107.6664
Worker	0.0355	0.0266	0.3066	9.3000e-004	0.0964	7.7000e-004	0.0972	0.0256	7.1000e-004	0.0263	0.0000	83.9656	83.9656	2.3100e-003	0.0000	84.0234
Total	**0.0483**	**0.4392**	**0.4180**	**2.0400e-003**	**0.1242**	**1.5400e-003**	**0.1257**	**0.0336**	**1.4500e-003**	**0.0351**	**0.0000**	**191.4715**	**191.4715**	**8.7300e-003**	**0.0000**	**191.6898**

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	0.0409	0.3563	2.0853	3.2400e-003		4.8100e-003	4.8100e-003		4.8100e-003	4.8100e-003	0.0000	275.6017	275.6017	0.0635	0.0000	277.1903
Total	**0.0409**	**0.3563**	**2.0853**	**3.2400e-003**		**4.8100e-003**	**4.8100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**275.6017**	**275.6017**	**0.0635**	**0.0000**	**277.1903**

3.5 4. Turnback Facility 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	0.0128	0.4126	0.1114	1.1100e-003	0.0277	7.7000e-004	0.0285	8.0000e-003	7.4000e-004	8.7400e-003	0.0000	107.5059	107.5059	6.4200e-003	0.0000	107.6664
Worker	0.0355	0.0266	0.3066	9.3000e-004	0.0964	7.7000e-004	0.0972	0.0256	7.1000e-004	0.0263	0.0000	83.9656	83.9656	2.3100e-003	0.0000	84.0234
Total	**0.0483**	**0.4392**	**0.4180**	**2.0400e-003**	**0.1242**	**1.5400e-003**	**0.1257**	**0.0336**	**1.4500e-003**	**0.0351**	**0.0000**	**191.4715**	**191.4715**	**8.7300e-003**	**0.0000**	**191.6898**

3.5 4. Turnback Facility 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	0.1919	1.6596	1.8818	3.1000e-003		0.0793	0.0793		0.0749	0.0749	0.0000	263.1582	263.1582	0.0601	0.0000	264.6596
Total	**0.1919**	**1.6596**	**1.8818**	**3.1000e-003**		**0.0793**	**0.0793**		**0.0749**	**0.0749**	**0.0000**	**263.1582**	**263.1582**	**0.0601**	**0.0000**	**264.6596**

3.5 4. Turnback Facility 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	9.0900e-003	0.2975	0.0954	1.0200e-003	0.0265	3.5000e-004	0.0268	7.6400e-003	3.3000e-004	7.9700e-003	0.0000	99.4066	99.4066	5.4200e-003	0.0000	99.5420
Worker	0.0319	0.0230	0.2691	8.5000e-004	0.0921	7.1000e-004	0.0928	0.0245	6.6000e-004	0.0251	0.0000	77.2161	77.2161	1.9900e-003	0.0000	77.2658
Total	**0.0410**	**0.3205**	**0.3645**	**1.8700e-003**	**0.1185**	**1.0600e-003**	**0.1196**	**0.0321**	**9.9000e-004**	**0.0331**	**0.0000**	**176.6227**	**176.6227**	**7.4100e-003**	**0.0000**	**176.8079**

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	0.0390	0.3401	1.9905	3.1000e-003		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	263.1578	263.1578	0.0601	0.0000	264.6592
Total	**0.0390**	**0.3401**	**1.9905**	**3.1000e-003**		**4.5900e-003**	**4.5900e-003**		**4.5900e-003**	**4.5900e-003**	**0.0000**	**263.1578**	**263.1578**	**0.0601**	**0.0000**	**264.6592**

3.5 4. Turnback Facility 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	9.0900e-003	0.2975	0.0954	1.0200e-003	0.0265	3.5000e-004	0.0268	7.6400e-003	3.3000e-004	7.9700e-003	0.0000	99.4066	99.4066	5.4200e-003	0.0000	99.5420
Worker	0.0319	0.0230	0.2691	8.5000e-004	0.0921	7.1000e-004	0.0928	0.0245	6.6000e-004	0.0251	0.0000	77.2161	77.2161	1.9900e-003	0.0000	77.2658
Total	**0.0410**	**0.3205**	**0.3645**	**1.8700e-003**	**0.1185**	**1.0600e-003**	**0.1196**	**0.0321**	**9.9000e-004**	**0.0331**	**0.0000**	**176.6227**	**176.6227**	**7.4100e-003**	**0.0000**	**176.8079**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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**

5.2 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**

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

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

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**

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix A

CalEEMod Output – Daily Construction Emissions for the High Speed Rail Column

#

LACTMA Division 20 Portal Widening & Turnback Facility - HSR Column

Los Angeles-South Coast County, Winter

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	0.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - Construction only.

Land Use - Construction only.

Construction Phase - Construction only, info from LACMTA.

Off-road Equipment - Construction only - single phase.

Trips and VMT - Assume 5 workers and 5 haul loads per day.

Landscape Equipment - Construction only.

Construction Off-road Equipment Mitigation - Comply with LACMTA Green Construction Policy.

LACTMA Division 20 Portal Widening & Turnback Facility - HSR Column - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	1.00	40.00
tblConstructionPhase	PhaseEndDate	6/22/2020	8/14/2020
tblLandUse	LotAcreage	0.00	0.50
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2020	0.7954	10.9204	4.8129	0.0246	0.2866	0.2594	0.5460	0.0776	0.2390	0.3165	0.0000	2,474.3777	2,474.3777	0.5563	0.0000	2,488.2848
Maximum	**0.7954**	**10.9204**	**4.8129**	**0.0246**	**0.2866**	**0.2594**	**0.5460**	**0.0776**	**0.2390**	**0.3165**	**0.0000**	**2,474.3777**	**2,474.3777**	**0.5563**	**0.0000**	**2,488.2848**

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	lb/day										lb/day					
2020	0.3358	3.7949	8.2369	0.0246	0.2866	0.0363	0.3229	0.0776	0.0358	0.1134	0.0000	2,474.3777	2,474.3777	0.5563	0.0000	2,488.2848
Maximum	**0.3358**	**3.7949**	**8.2369**	**0.0246**	**0.2866**	**0.0363**	**0.3229**	**0.0776**	**0.0358**	**0.1134**	**0.0000**	**2,474.3777**	**2,474.3777**	**0.5563**	**0.0000**	**2,488.2848**

	ROG	NOx	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	**57.78**	**65.25**	**-71.14**	**0.00**	**0.00**	**86.01**	**40.86**	**0.00**	**85.01**	**64.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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
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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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
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
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Install CIDH Column for Future HSR	Site Preparation	6/20/2020	8/14/2020	5	40	

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
Install CIDH Column for Future HSR	Rubber Tired Loaders	1	8.00	203	0.36
Install CIDH Column for Future HSR	Bore/Drill Rigs	1	8.00	221	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Install CIDH Column for Future HSR	2	10.00	0.00	400.00	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 Install CIDH Column for Future HSR - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6549	7.9715	3.7348	0.0157		0.2491	0.2491		0.2292	0.2292		1,522.5416	1,522.5416	0.4924		1,534.8522
Total	**0.6549**	**7.9715**	**3.7348**	**0.0157**		**0.2491**	**0.2491**		**0.2292**	**0.2292**		**1,522.5416**	**1,522.5416**	**0.4924**		**1,534.8522**

3.2 Install CIDH Column for Future HSR - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0895	2.9126	0.6772	7.7600e-003	0.1749	9.3200e-003	0.1842	0.0479	8.9100e-003	0.0568		841.0941	841.0941	0.0604		842.6034
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0363	0.4010	1.1100e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		110.7420	110.7420	3.4900e-003		110.8293
Total	**0.1406**	**2.9489**	**1.0782**	**8.8700e-003**	**0.2866**	**0.0103**	**0.2969**	**0.0776**	**9.7700e-003**	**0.0873**		**951.8361**	**951.8361**	**0.0639**		**953.4327**

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	lb/day										lb/day					
Off-Road	0.1952	0.8460	7.1588	0.0157		0.0260	0.0260		0.0260	0.0260	0.0000	1,522.5416	1,522.5416	0.4924		1,534.8522
Total	**0.1952**	**0.8460**	**7.1588**	**0.0157**		**0.0260**	**0.0260**		**0.0260**	**0.0260**	**0.0000**	**1,522.5416**	**1,522.5416**	**0.4924**		**1,534.8522**

3.2 Install CIDH Column for Future HSR - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0895	2.9126	0.6772	7.7600e-003	0.1749	9.3200e-003	0.1842	0.0479	8.9100e-003	0.0568		841.0941	841.0941	0.0604		842.6034
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0363	0.4010	1.1100e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		110.7420	110.7420	3.4900e-003		110.8293
Total	**0.1406**	**2.9489**	**1.0782**	**8.8700e-003**	**0.2866**	**0.0103**	**0.2969**	**0.0776**	**9.7700e-003**	**0.0873**		**951.8361**	**951.8361**	**0.0639**		**953.4327**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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	lb/day										lb/day					
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
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**

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	lb/day										lb/day					
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
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**

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	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	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
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	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
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix A

CalEEMod Output – Annual Construction Emissions for the High Speed Rail Column

#

LACTMA Division 20 Portal Widening & Turnback Facility - HSR Column

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	0.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2023
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 - Construction only.

Land Use - Construction only.

Construction Phase - Construction only, info from LACMTA.

Off-road Equipment - Construction only - single phase.

Trips and VMT - Assume 5 workers and 5 haul loads per day.

Landscape Equipment - Construction only.

Construction Off-road Equipment Mitigation - Comply with LACMTA Green Construction Policy.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	1.00	40.00
tblConstructionPhase	PhaseEndDate	6/22/2020	8/14/2020
tblLandUse	LotAcreage	0.00	0.50
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0158	0.2196	0.0960	4.9000e-004	5.6300e-003	5.1900e-003	0.0108	1.5300e-003	4.7800e-003	6.3000e-003	0.0000	45.0829	45.0829	0.0101	0.0000	45.3347
Maximum	**0.0158**	**0.2196**	**0.0960**	**4.9000e-004**	**5.6300e-003**	**5.1900e-003**	**0.0108**	**1.5300e-003**	**4.7800e-003**	**6.3000e-003**	**0.0000**	**45.0829**	**45.0829**	**0.0101**	**0.0000**	**45.3347**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	6.5900e-003	0.0771	0.1645	4.9000e-004	5.6300e-003	7.2000e-004	6.3500e-003	1.5300e-003	7.1000e-004	2.2400e-003	0.0000	45.0828	45.0828	0.0101	0.0000	45.3347
Maximum	**6.5900e-003**	**0.0771**	**0.1645**	**4.9000e-004**	**5.6300e-003**	**7.2000e-004**	**6.3500e-003**	**1.5300e-003**	**7.1000e-004**	**2.2400e-003**	**0.0000**	**45.0828**	**45.0828**	**0.0101**	**0.0000**	**45.3347**

	ROG	NOx	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	**58.26**	**64.90**	**-71.32**	**0.00**	**0.00**	**86.13**	**41.26**	**0.00**	**85.15**	**64.44**	**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	6-8-2020	9-7-2020	0.2334	0.0817
		Highest	0.2334	0.0817

2.2 Overall Operational

Unmitigated Operational

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

2.2 Overall Operational

Mitigated Operational

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Install CIDH Column for Future HSR	Site Preparation	6/20/2020	8/14/2020	5	40	

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
Install CIDH Column for Future HSR	Rubber Tired Loaders	1	8.00	203	0.36
Install CIDH Column for Future HSR	Bore/Drill Rigs	1	8.00	221	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Install CIDH Column for Future HSR	2	10.00	0.00	400.00	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 Install CIDH Column for Future HSR - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0131	0.1594	0.0747	3.1000e-004		4.9800e-003	4.9800e-003		4.5800e-003	4.5800e-003	0.0000	27.6245	27.6245	8.9300e-003	0.0000	27.8479
Total	**0.0131**	**0.1594**	**0.0747**	**3.1000e-004**		**4.9800e-003**	**4.9800e-003**		**4.5800e-003**	**4.5800e-003**	**0.0000**	**27.6245**	**27.6245**	**8.9300e-003**	**0.0000**	**27.8479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7700e-003	0.0594	0.0131	1.6000e-004	3.4400e-003	1.8000e-004	3.6200e-003	9.4000e-004	1.8000e-004	1.1200e-003	0.0000	15.4156	15.4156	1.0700e-003	0.0000	15.4425
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	7.4000e-004	8.2300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.0427	2.0427	6.0000e-005	0.0000	2.0443
Total	**2.6900e-003**	**0.0601**	**0.0213**	**1.8000e-004**	**5.6300e-003**	**2.0000e-004**	**5.8300e-003**	**1.5200e-003**	**2.0000e-004**	**1.7200e-003**	**0.0000**	**17.4583**	**17.4583**	**1.1300e-003**	**0.0000**	**17.4868**

3.2 Install CIDH Column for Future HSR - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9000e-003	0.0169	0.1432	3.1000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	27.6245	27.6245	8.9300e-003	0.0000	27.8479
Total	**3.9000e-003**	**0.0169**	**0.1432**	**3.1000e-004**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**27.6245**	**27.6245**	**8.9300e-003**	**0.0000**	**27.8479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7700e-003	0.0594	0.0131	1.6000e-004	3.4400e-003	1.8000e-004	3.6200e-003	9.4000e-004	1.8000e-004	1.1200e-003	0.0000	15.4156	15.4156	1.0700e-003	0.0000	15.4425
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	7.4000e-004	8.2300e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	2.0427	2.0427	6.0000e-005	0.0000	2.0443
Total	**2.6900e-003**	**0.0601**	**0.0213**	**1.8000e-004**	**5.6300e-003**	**2.0000e-004**	**5.8300e-003**	**1.5200e-003**	**2.0000e-004**	**1.7200e-003**	**0.0000**	**17.4583**	**17.4583**	**1.1300e-003**	**0.0000**	**17.4868**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	0.545842	0.044768	0.205288	0.119317	0.015350	0.006227	0.020460	0.031333	0.002546	0.002133	0.005184	0.000692	0.000862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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**

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**

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	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

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

6.2 Area by SubCategory

Mitigated

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

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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

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**

8.2 Waste by Land Use

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix A

Calculation Sheet – Operational Mobile Trip Emissions

#

Air Pollutant Emissions - Operational Mobile Trips

calendar_year	season_month	sub_area	vehicle_class	fuel	pollutant	countywide emissions (ton/day)	countywide VMT (miles/day)	per mile (lb/mile)	project VMT (miles/day)	lb/day	50%/25%/25% LDA/LDT1/LDT2 mix (lb/day)
2023	Annual	Los Angeles (SC)	LDA	Gas	CO	156.5973261	149418105.6	0.002096095724	3552.4	7.446170451	
2023	Annual	Los Angeles (SC)	LDT1	Gas	CO	30.41935755	17372474.6	0.003502017790	3552.4	12.440568	
2023	Annual	Los Angeles (SC)	LDT2	Gas	CO	73.68598444	52162943.36	0.002825223413	3552.4	10.03632365	9.3
2023	Annual	Los Angeles (SC)	LDA	Gas	NOx	9.640460899	149418105.6	0.000129040063	3552.4	0.458401921	
2023	Annual	Los Angeles (SC)	LDT1	Gas	NOx	2.593693558	17372474.6	0.000298598054	3552.4	1.060739729	
2023	Annual	Los Angeles (SC)	LDT2	Gas	NOx	6.237125835	52162943.36	0.000239140103	3552.4	0.849521303	0.7
2023	Annual	Los Angeles (SC)	LDA	Gas	PM10	7.685584426	149418105.6	0.000102873536	3552.4	0.365447949	
2023	Annual	Los Angeles (SC)	LDT1	Gas	PM10	0.910304937	17372474.6	0.000104798534	3552.4	0.372286313	
2023	Annual	Los Angeles (SC)	LDT2	Gas	PM10	2.690329815	52162943.36	0.000103150997	3552.4	0.366433603	0.4
2023	Annual	Los Angeles (SC)	LDA	Gas	PM2_5	3.213174461	149418105.6	0.000043009171	3552.4	0.152785781	
2023	Annual	Los Angeles (SC)	LDT1	Gas	PM2_5	0.388963573	17372474.6	0.000044779294	3552.4	0.159073964	
2023	Annual	Los Angeles (SC)	LDT2	Gas	PM2_5	1.128396947	52162943.36	0.000043264313	3552.4	0.153692145	0.2
2023	Annual	Los Angeles (SC)	LDA	Gas	ROG	14.5006078	149418105.6	0.000194094387	3552.4	0.6895009	
2023	Annual	Los Angeles (SC)	LDT1	Gas	ROG	3.887070934	17372474.6	0.000447497668	3552.4	1.589690715	
2023	Annual	Los Angeles (SC)	LDT2	Gas	ROG	7.952878012	52162943.36	0.000304924435	3552.4	1.083213562	1.0
2023	Annual	Los Angeles (SC)	LDA	Gas	SOx	0.451676708	149418105.6	0.000006045810	3552.4	0.021477134	
2023	Annual	Los Angeles (SC)	LDT1	Gas	SOx	0.060951779	17372474.6	0.000007017052	3552.4	0.024927376	
2023	Annual	Los Angeles (SC)	LDT2	Gas	SOx	0.194645716	52162943.36	0.000007462988	3552.4	0.026511519	0.0

GHG Emissions - Operational Mobile Trips

calendar_year	season_month	sub_area	vehicle_class	fuel	pollutant	CO2e_annualized [metric tons/year]	VMT/day	MTCO2e/VMT
2023	Annual	Los Angeles (SC)	LDA	Gas	CO2	14368176.48	149418105.6	0.0002635
2023	Annual	Los Angeles (SC)	LDA	Gas	CH4	11292.9005	149418105.6	0.0000002
2023	Annual	Los Angeles (SC)	LDA	Gas	N2O	114634.9931	149418105.6	0.0000021
2023	Annual	Los Angeles (SC)	LDT1	Gas	CO2	1938922.033	17372474.6	0.0003058
2023	Annual	Los Angeles (SC)	LDT1	Gas	CH4	2260.306528	17372474.6	0.0000004
2023	Annual	Los Angeles (SC)	LDT1	Gas	N2O	20547.67258	17372474.6	0.0000032
2023	Annual	Los Angeles (SC)	LDT2	Gas	CO2	6191826.912	52162943.36	0.0003252
2023	Annual	Los Angeles (SC)	LDT2	Gas	CH4	5656.268259	52162943.36	0.0000003
2023	Annual	Los Angeles (SC)	LDT2	Gas	N2O	55084.28618	52162943.36	0.0000029

50/25/25 Mix	0.0002923	MTCO2e/VMT
	3552.4	Daily VMT
	379.0	**Annual MTCO2e**

calendar_year	sub_area	vehicle_class	fuel	vmt
2023	Los Angeles (SC)	LDA	Gas	149418105.6
2023	Los Angeles (SC)	LDT1	Gas	17372474.6
2023	Los Angeles (SC)	LDT2	Gas	52162943.36

Appendix A

Calculation Sheet – Operational Energy Use Emissions

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Operational Energy Consumption - GHG Emissions

Provider	Notes	2016 Annual Consumption	Unit	2023 Annual Consumption (post-project)	
DWP	Traction Power, Yard Power, Facility Electricity	12,799,479	kWh	34,706,280	
DWP	Yard Power, Facility Electricity	1,539,200	kWh	4,173,600	
SoCal Gas	Facility Gas	9,780	therms	26,519	
DWP	Water	1,629	HCF	4,417	
DWP	Water	2,648	HCF	7,180	
		104.0	**HRV**	**282.0**	
					Δ
	Total Direct Electricity Use (MWhr)	14,338.7	MWh	38,879.9	24,541.2
	Total NG (therms)	9,780.0	therms	26,518.8	16,738.8
	Total Water (HCF)	4,277.0	HCF	11,597.3	7,320.3
	Total Water (Gal)	3,199,196.0	Gal	8,674,743.0	5,475,547.0
Data Source					
CalEEMod	Water Electricity Intensity (MWhr/million gal)	13.02		13.02	
	Total Electricity Use from Water Conveyance (MWhr)	41.7		113.0	71.3
LADWP	CO2 Intensity Factor (lb/MWhr)	1,132.0		1,132.0	
CalEEMod	CH4 Intensity Factor (lb/MWhr)	0.02900		0.02900	
CalEEMod	N2O Intensity Factor (lb/MWhr)	0.00617		0.00617	
CalEEMod	Natural Gas Emission Factor (lb CO2/MMBTU)	117.6		117.6	
CalEEMod	Natural Gas Emission Factor (lb CH4/MMBTU)	0.00225		0.00225	
CalEEMod	Natural Gas Emission Factor (lb N2O/MMBTU)	0.00216		0.00216	
	Convert Therm to MMBTU (1 Therm = 0.1 MMBTU)	0.1		0.1	
	Total Annual Electricity Emissions (MTCO2e/year)	7,378.4		20,006.7	12,628.3
	Total Annual Natural Gas Emissions (MTCO2e/year)	52.5		142.3	89.8
	Total Annual Water-Electricity Emissions (MTCO2e/year)	21.4		58.1	
	Total Annual Energy GHG Emissions (MTCO2e/year)	7,452.3		20,207.1	12,754.8

Appendix B

LACMTA Green Construction Policy

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

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Metro

EXECUTIVE MANAGEMENT AND AUDIT COMMITTEE
CONSTRUCTION COMMITTEE
JULY 21, 2011

SUBJECT: GREEN CONSTRUCTION POLICY

ACTION: ADOPT GREEN CONSTRUCTION POLICY

RECOMMENDATION

Adopt the Los Angeles County Metropolitan Transportation Authority (LACMTA) Green Construction Policy for implementation on construction projects conducted on LACMTA properties and rights-of-way. Phase the implementation of this policy, through a collaborative process, for implementation by other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects.

ISSUE

Expediting the LACMTA's Measure R Initiative through the America Fast Forward Program will reduce overall emissions and get people out of their cars and onto transit sooner. However, the potential to create significant harmful emissions from traffic congestion and those associated with construction activities and existing non-mitigated legacy construction equipment usage remains high. This concern is echoed by the US Environmental Protection Agency (USEPA), the South Coast Air Quality Management District (SCAQMD), and various non-profit environmental organizations in the last few months through comment letters to LACMTA's environmental documents, or in public meetings. Specifically, the USEPA and the SCAQMD have recommended through those forums that the LACMTA either implement best management practices or require the use of cleaner on-road and off-road equipment to mitigate particulate matter (PM) and nitrogen oxide (NO_x) compound emissions.

The development and implementation of a Green Construction Policy was advanced in a motion sponsored by Director Richard Katz and approved by the LACMTA Board of Directors on December 9, 2010. An LACMTA Board approved Green Construction Policy will facilitate agency-wide and uniform implementation of cost-effective solutions to this recognized air quality issue.

DISCUSSION

Staff presented a Draft Green Construction Policy during the March 2011 and June 2011 Executive Management and Audit Committee meetings. Additional guidance was given by our Board of Directors during those meetings to ensure the development of a comprehensive policy, consistent with the intent of Director Katz's December 2010 motion; but more importantly considers issues associated with the implementation of such a policy outside of the LACMTA jurisdiction. Additional considerations would include lessons learned from the policies, guidelines, or framework of other jurisdictions within our region specifically those of the Port of Los Angeles, Port of Long Beach, and Los Angeles World Airports (LAWA).

Over the course of four months, staff had conducted separate meetings with various stakeholders that included non-profit environmental organizations, construction contractors, manufacturers of retrofit equipment; as well as representatives of the South Coast Air Quality Management District, Port of Los Angeles, Port of Long Beach, and Los Angeles World Airports. The meetings were designed not only to develop a more comprehensive LACMTA Green Construction Policy but to gain consensus on language and provisions that should be included in the policy. Additional meetings were conducted in June and July to gain input from Metro's Technical Advisory Committee, Metro Streets and Freeways Sub-Committee, Metro Transit Business Advisory Council, Northern Corridor Cities Meeting, Antelope Valley Air Quality Management District, Los Angeles County Department of Public Works, and Small Business Outreach meeting to discuss the policy. After going through this extensive outreach, the Green Construction Policy included in Attachment A is attached for Board consideration. This policy includes a commitment for the immediate adoption of the policy on construction projects conducted on LACMTA properties and rights-of-way. The policy will be phased, through a collaborative process, for implementation by other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects.

Staff's recommendation to adopt this LACMTA Green Construction Policy is in line with the clean construction requirements already existing in New York, Illinois (Cook Co.), and Rhode Island (Providence), among others. Locally, the Port of Los Angeles, Port of Long Beach, and LAWA have already incorporated clean construction requirements into their specifications.

From an informal survey of transit agencies nationwide [through the American Public Transportation Association (APTA)], it appears that only a handful of our peers have considered clean/green construction equipment requirements. There appears to be no transit agency at this time that has adopted such a policy. With the adoption of this policy, we will be the industry leader in the APTA community.

FINANCIAL IMPACT

LAWA and Port of Los Angeles staffs have been implementing clean construction requirements in their construction activities. Specifically to LAWA, they have indicated that the cost to implement these requirements in total, including the labor associated with contractor bid costs, an Independent Third Party Monitor, environmental management contractor staff, plus the cost for retrofitting the off-road construction vehicles with diesel emission control systems, is approximately 0.3% of the overall construction costs on one of their $150 million projects. In LAWA staff's opinion, the costs to do the same level of effort would conservatively be around 0.5% on a typical construction project.

The Contractor or equipment owner (in cases where construction equipment is leased) is responsible for all costs of purchase, installation, and maintenance of retrofit device or any new construction equipment required by the policy. The Contractor shall also be responsible for any compliance costs to be incurred by any of their subcontractors. Finally, no Contractor shall be given a competitive advantage or disadvantage as a result of the policy. Costs for complying with the policy shall not be considered by LACMTA in evaluating bids.

As indicated in the policy, the LACMTA will provide information to the Contractor and their subcontractors in identifying and applying for grants and loans that are available for the greening of existing construction equipment or purchase of new green construction equipment.

ALTERNATIVES CONSIDERED

Rejection of the recommended Board action is inconsistent with the intent of the Board approved motion to develop this policy. Rejection of the staff recommendation is also inconsistent with the provisions of our Board adopted Environmental Policy that specifically commits to specific actions in mitigating environmental and human health impacts, while maintaining sustainable operations.

NEXT STEPS

After the proposed Green Construction Policy is adopted by the LACMTA Board, staff will incorporate the requirements of this policy in all future procurement contracts. It is not retroactive. Staff will encourage Contractors that work on existing construction projects in LACMTA properties or rights-of-way to implement the provisions of this policy to the greatest extent feasible. Staff will develop a collaborative process to phase the implementation of this policy in other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects.

ATTACHMENT

A. LACMTA Green Construction Policy

Prepared by: Cris B. Liban, Environmental Compliance and Services Department Manager

Krishniah N. Murthy
Executive Director, Project Transit Delivery

Arthur T. Leahy
Chief Executive Officer

LACMTA GREEN CONSTRUCTION POLICY

POLICY STATEMENT

The Los Angeles County Metropolitan Transportation Authority (LACMTA) will only use greener, less polluting construction equipment and vehicles; and implement best practices to meet or exceed air quality emission standards in all construction projects performed on LACMTA properties and rights-of-way. Phase the implementation of this policy, through a collaborative process, for implementation by other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects.

PURPOSE

This policy provides requirements for 1) identifying and mitigating air emission impacts on human health, environment, and climate of on-road and off-road construction equipment and generators used in our construction and development activities; 2) implementing appropriate Best Management Practices (BMP) to complement equipment mitigations; and 3) implementing strategies to ensure compliance with this policy.

This policy is effective and enforceable immediately upon adoption for all new construction projects. This policy is not retroactive. However, for all existing construction projects [i.e., where contracts have already been awarded], LACMTA will encourage all Contractors to implement the provisions of this policy to the greatest extent feasible. The intent of this policy is to reduce harmful air emissions (particularly particulate matter and nitrogen oxides) while minimizing any significant impact to cost and schedule in any existing construction project. Nothing in this policy shall require a retrofit that does not meet California OSHA standards.

COMMITMENTS

The LACMTA is an international leader in implementing environmental and sustainability principles in all of its planning, construction, operations, and procurement activities. The LACMTA commits to the following construction equipment requirements, construction BMPs, and implementation strategies for all of its construction projects performed on LACMTA properties or rights-of-way. The implementation of this policy will be phased, through a collaborative process, for implementation in other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects.

CONSTRUCTION EQUIPMENT

Through this Green Construction Policy, the LACMTA commits to ensuring that all of the on-road and off-road equipment used in its construction activities are green and less-polluting as follows:

Construction Equipment (excluding On-Road Equipment)

1) Construction equipment shall incorporate, where feasible, emissions-reducing technology such as hybrid drives and specific fuel economy standards.

2) Idling shall be restricted to a maximum of 5 minutes, except as provided in the exceptions to the applicable CARB regulations regarding idling.

3) Equipment Engine Specifications:

   a. ***Prior to December 31, 2011***: All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier-2 off-road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 Diesel Emissions Control Device system (DECS).

   b. ***From January 1, 2012, to December 31, 2014***: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier-3 off-road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 DECS. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

   c. ***From January 1, 2015 and onwards***: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier-4 off-road emission standards at a minimum. In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

On-Road Equipment

1) Trucks or equipment hauling material such as debris or any fill material shall be fully covered while operating at, to and from the LACMTA construction project.

2) Idling shall be restricted to a maximum of 5 minutes, except as provided in the exceptions to the applicable CARB regulations regarding idling.

3) EPA Standards:

a) ***Prior to December 31, 2013:*** All on-road heavy-duty diesel trucks or equipment with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater shall meet or exceed the EPA 2007 on-road emission standards for PM (0.01 g/bhp-hr); or shall be equipped with a CARB verified Level 3 diesel particulate filter.

b) ***From January 1, 2014 and onwards:*** All on-road heavy-duty diesel trucks or equipment with a GVWR of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards for PM and NO_x (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively).

Generators

Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, on-site generators must:

1) Meet a 0.01 gram per brake-horsepower-hour standard for PM, or

2) Be equipped with BACT for PM emissions reductions.

Exceptions

These on-road and off-road construction equipment and generator requirements shall apply unless any of the following circumstances exist and the Contractor provides a written finding consistent with project contract requirements that:

1) The Contractor intends to meet the requirements of this policy as to a particular vehicle or piece of equipment by leasing or short-term rental, and the Contractor has attempted in good faith and due diligence to lease the vehicle or equipment that would comply with this policy, but that vehicle or equipment is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.

2) The Contractor has been awarded funding by SCAQMD or another agency that would provide some or all of the cost to retrofit, repower, or purchase a piece of equipment or vehicle, but the funding has not yet been provided due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent the

equipment or vehicle that would comply with this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.

3) Contractor has ordered a piece of equipment or vehicle to be used on the construction project in compliance with this policy at least 60 days before that equipment or vehicle is needed at the project site, but that equipment or vehicle has not yet arrived due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent a piece of equipment or vehicle to meet the requirements of this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project, and the Contractor has submitted documentation to LACMTA showing that the requirements of this Exception provision apply.

4) Construction-related diesel equipment or vehicle will be used on an LACMTA construction project site for fewer than 10 calendar days per calendar year. The Contractor shall not consecutively use different equipment or vehicles that perform the same or a substantially similar function in an attempt to use this Exception to circumvent the intent of this policy.

In any of the situations described above, the Contractor shall provide the next cleanest piece of equipment or vehicle as provided by the step down schedules in Table A for Off-Road Equipment and Table B for On-Road Equipment.

Table A. Off-Road Compliance Step Down Schedule*

Compliance Alternative	***Engine Standard***	***CARB-verified DECS (VDECS)***
1	*Tier 4*	*N/A***
2	*Tier 3*	*Level 3*
3	*Tier 2*	*Level 3*
4	*Tier 1*	*Level 3*
5	*Tier 2*	*Level 2*
6	*Tier 2*	*Level 1*
7	*Tier 2*	*Uncontrolled*
8	*Tier 1*	*Level 2*
Equipment less than Tier 1, Level 2 shall not be permitted.		

Table B. On-Road Compliance Step Down Schedule*		
Compliance Alternative	**Engine Model Year**	**CARB-Verified DECS (VDECS)**
1	2010	N/A
2	2007	N/A**
3	2004	Level 3
4	1998	Level 3
5	2004	Uncontrolled
6	1998	Uncontrolled
Equipment with a model year earlier than Model Year 1998 shall not be permitted.		

*__How to use Table A and Table B__: For example, if Compliance Alternative #3 is required by this policy but a Contractor cannot obtain an off-road vehicle that meets the Tier 2 engine standard that is equipped with a Level 3 DECS (Compliance Alternative #3 in Table A) and meets one of the above exceptions, then the Contractor shall use a vehicle that meets the next compliance alternative (Compliance Alternative #4) which is a Tier 1 engine standard equipped with a Level 3 DECS. Should the Contractor not be able to supply a vehicle with a Tier 1 engine equipped with a Level 3 DECS in accordance with Compliance Alternative #4 and has satisfied the requirements of one of the above exceptions as to the Contractor's ability to obtain a vehicle meeting Compliance Alternative #4, the Contractor shall then supply a vehicle meeting the next compliance alternative (Compliance Alternative #5), and so on. If the Contractor is proposing an exemption for on-road equipment, the step down schedule in Table B should be used. A Contractor must demonstrate that it has satisfied one of the exceptions listed in the selected Compliance Alternative # before it can use a subsequent Compliance Alternative. The goal is to ensure that the Contractor has exercised due diligence in supplying the cleanest fleet available.

**Tier 4 or 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.

BEST MANAGEMENT PRACTICES

In addition to equipment requirements, the Best Management Practices (BMPs) listed below are imposed on all construction projects that performed on LACMTA properties and rights-of-way.

BMPs shall include, at a minimum:

1) Use of diesel particulate traps or best available control technology, as feasible;

2) Maintain equipment according to manufacturers' specifications;

3) Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of 5 minutes when not in use, except as provided in the exceptions to the applicable CARB regulations regarding idling for off-road and on-road equipment;

4) Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible;

5) Where applicable and feasible, work with local jurisdictions to improve traffic flow by signal synchronization;

6) If feasible and as allowed by local jurisdictions, configure construction parking to minimize traffic interference;

7) Enforce truck parking restrictions, where applicable;

8) Prepare haul routes that conform to local requirements to minimize traversing through congested streets or near sensitive receptor areas;

9) Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible;

10) Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable;

11) Use electric power in lieu of diesel power where available; and

12) Traffic speeds on all unpaved roads to be 15 mph or less.

IMPLEMENTATION

The following shall be incorporated to ensure proper compliance with this policy.

Notification

Contractors of construction activities that are located within 1,000 feet of sensitive receptors shall notify each of these sites in writing at least 30 days before construction activities begin. Notification shall include the name of the project, a description of the location, the acreage of the construction site, the type and quantity of equipment and vehicles that will be operating at or near the site, the start date and reasonably anticipated duration of the construction, and contact information for a LACMTA community liaison who can answer any questions.

Enforcement

Each solicitation by LACMTA for a construction project contract and each contract entered into as a result of such solicitation shall include provisions authorizing enforcement of the requirements of this policy.

Violations of any of the requirements of this policy shall be deemed to be a material breach of the Contractor agreement, and LACMTA shall have available

all remedies including warnings, fines, requirement to remove equipment, institution of special assessments, and termination of contract.

LACMTA shall conduct inspection of construction sites and affected off-road and on-road equipment and generator as well as compliance with air quality rules. These inspections will be conducted as part of existing LACMTA staff functions and without advance notice to the Contractor.

Records

Prior to Notice to Proceed (NTP) to commence construction project and to be verified afterwards consistent with project contract requirements and through enforcement provisions above, the Contractor shall submit to LACMTA the following information for all construction equipment to be used in all construction projects on LACMTA properties or rights-of-way:

1) A certified statement that all construction equipment used conform to the requirements specified above;

2) A list of all the equipment and vehicles [i.e., for off-road equipment, include the CARB-issued Equipment Identification Number (EIN)] to be used;

3) A copy of each Contractor's certified EPA rating and applicable paperwork issued either by CARB, SCAQMD and any other jurisdiction that has oversight over the equipment; and

4) The name, business address, e-mail address, and phone number for the individual person responsible for each of the pieces of equipment and vehicles subject to this policy.

If an unanticipated need for the use of equipment or a vehicle arises after construction has commenced or after the Contractor has submitted the information required by the above subsections (1)–(4), the Contractor shall provide such information for the unanticipated equipment or vehicle within 14 days after an identified emergency or when the need arises and prior to the use of the equipment or vehicle.

Quantification and Reporting of Emission Reductions

No later than 18 months after the date the LACMTA Board of Directors adopts this policy, and annually thereafter, LACMTA shall develop a summary report presented to the Board and available on the LACMTA website which shall include:

1) A description of the implementation of this policy;

2) Quantification of the resulting PM and NO_x emission reductions;

3) A list and description of monitoring and enforcement actions;

4) A description of other appropriate measures of progress;

5) A description of the outreach of this policy in other jurisdictions that receive/program LACMTA funding (in whole or in part) for construction projects;

6) A description of implementation problems encountered and opportunities for additional reductions in emissions; and

7) Recommendations for any statutory or policy changes.

Implementation and Compliance Costs

The Contractor or equipment or vehicle owner (in cases where the equipment or vehicle is leased) is responsible for all costs of purchase, installation, and maintenance of retrofit devices or any new construction equipment required by this policy. The Contractor shall also be responsible for any compliance costs to be incurred by any of their subcontractors.

The LACMTA will provide information to the Contractor and their subcontractors to aid in the identification of and application for grants and loans that are available for the retrofit or repower of existing construction equipment or purchase of new green construction equipment.

No Contractor shall be given a competitive advantage or disadvantage as a result of this policy. Costs for complying with this policy is a part of the Contractor's bid and will not have any consideration in evaluating bids.

DEFINITIONS

Best Available Control Technology (BACT) is defined as technology, verified by CARB, for an off-road vehicle that achieves reductions in PM emissions at the highest applicable classification level for diesel emission control strategies. A summary of CARB-verified diesel emission control strategies may be found at http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm. Where this policy requires BACT, this requirement can be satisfied by a factory installed equivalent device, such as a diesel particulate filter.

Classification Levels are defined as levels of diesel emission control retrofit technologies, with Level 3 being the highest classification level, and the only level acceptable for a retrofit under this policy, except as provided for in this policy:

- Level 3 is defined as retrofit technology that reduces diesel PM emissions by 85 percent or greater or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour;

- Level 2 is defined as retrofit technology that reduces diesel PM emissions by between 50 and 84 percent;

- Level 1is defined as retrofit technology that reduces diesel PM emissions by between 25 and 49 percent.

Construction Project is defined as a project that is performed on LACMTA properties or rights-of-way. If the project is performed in collaboration with another agency or agencies or parties, including where the other agency or agencies or parties have the lead responsibility for construction, LACMTA shall discuss with those agencies or parties the incorporation of the provisions of this Green Construction policy into all agreements, including Memoranda of Understanding, between LACMTA and the other agency or agencies or parties. Until such time, provisions of this policy shall only be used as a guideline in performing construction projects that receive/program LACMTA funds in whole or in part.

Sensitive Receptor Site is defined as a site that is within the definition provided in the CARB Air Quality and Land Use Planning Guidelines (2005) (www.arb.ca.gov/ch/landuse.htm) such as schools, daycares, playgrounds, and hospitals.