AIR QUALITY AND HEALTH RISK ASSESSMENT TECHNICAL REPORT

1.0 INTRODUCTION

This document presents the Air Quality and Health Risk Assessment Technical Report associated with the proposed Inglewood Transit Connector (proposed Project) in Inglewood, California.

To support the Inglewood Transit Connector Environmental Impact Report (EIR), three analyses were conducted: construction emissions inventories, dispersion modeling to support an ambient air quality standards analysis, and a health risk assessment (HRA). The ambient air quality standards analysis and HRA results are presented for both the Morning/Evening and Morning/Night construction scenarios (as described in the ITC Construction Scenario, June 2020). The analyses provide an estimate of the air emissions associated with the construction (off-road equipment along the proposed Project's alignment including the guideway, stations, and support facility sites, and off-site truck travel for the removal of debris and soils excavated during demolition and construction along nearby roadways) of the proposed Project. The potential air quality and health impacts that would result construction of the proposed Project have also been identified.

The supporting information, methodology, and assumptions used in the construction air emissions inventory, air quality dispersion modeling, HRA, and operational air emissions inventory are provided in:

- **Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions,**
- **Attachment B: Health Risk Assessment Methodology and Assumptions,**
- **Attachment C: Supplemental Health Impact Information,**
- **Attachment D: TIRCP GHG Benefits Calculator Tool Memo, and**
- **Attachment E: Operational Air Emissions Inventory.**

Air quality impacts were determined for United States Environmental Protection Agency (USEPA) criteria pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 micrometers (coarse particulate or PM_{10}), and particulate matter less than 2.5 micrometers (fine particulate or $PM_{2.5}$). The air quality analysis was developed based on the South Coast Air Quality Management District (SCAQMD) Modeling Guidance for AERMOD,[1] the USEPA *Guideline on Air Quality*

1 South Coast Air Quality Management District, SCAQMD Modeling Guidance for AERMOD, Accessed July 7, 2020 at: https://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance.

Models,[2] and the SCAQMD *Air Quality Handbook.*[3] The air quality analyses were conducted to determine the air quality impacts, in terms of ambient pollutant concentrations, using the significance levels identified by SCAQMD.[4]

The HRA focuses on impacts on existing residences and other sensitive populations from emissions of toxic air contaminants (TAC)[5] such as diesel particulate matter (DPM)[6] emissions from construction equipment and haul trucks associated with the proposed Project construction activities. The HRA was conducted to determine the health impacts, in terms of excess cancer risk and noncancer hazards, using the significance levels identified by the SCAQMD.[7] The HRA was prepared based on the California Office of Environmental Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[8] and SCAQMD's *Risk Assessment Procedures for Rule 1401, 1401.1* and *212.*[9]

2.0 PROJECT OVERVIEW

The proposed Project would provide a transit connection from the Metro Crenshaw/LAX Line in Downtown Inglewood to the Los Angeles Stadium and Entertainment District (LASED) area and would be designed to integrate with local economic activity, transit-oriented development, and other initiatives in the area. Up to three stations are proposed at the following locations: (1) Market Street near Florence Avenue in the vicinity of the Metro Crenshaw/LAX Line Downtown Inglewood Station; (2) near The Forum at Prairie Avenue and Pincay Street; and (3) near the LASED at Hollywood Park at Prairie Avenue and Hardy Street

2 United States Environmental Protection Agency, Guideline on Air Quality Models (Revised), 40 Code of Federal Regulations, Part 51, Appendix W, November 2005, Accessed July 6, 2020 at: https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf.

3 South Coast Air Quality Management District, CEQA Air Quality Handbook, Accessed July 6, 2020 at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

4 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, April 2019, Accessed July 6, 2020 at: http://www.aqmd.gov/ceqa/hdbk.html.

5 Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality. TAC are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., gasoline service stations, dry cleaners). TAC are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TAC are regulated at the regional, state, and Federal level.

6 In 1998, the California Air Resources Board classified diesel particulate matter as a toxic air contaminant, citing its potential to cause cancer and other health problems. The United States Environmental Protection Agency concluded that long-term exposure to diesel engine exhaust is likely to pose a lung cancer hazard to humans and can also contribute to other acute and chronic health effects.

7 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, April 2019, Accessed July 6, 2020 at: http://www.aqmd.gov/ceqa/hdbk.html.

8 Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015, Accessed July 6, 2020 at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

9 South Coast Air Quality Management District, Risk Assessment Procedures for Rule 1401, 1401.1 and 212, September 1, 2017, Accessed July 6, 2020 at: http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12.

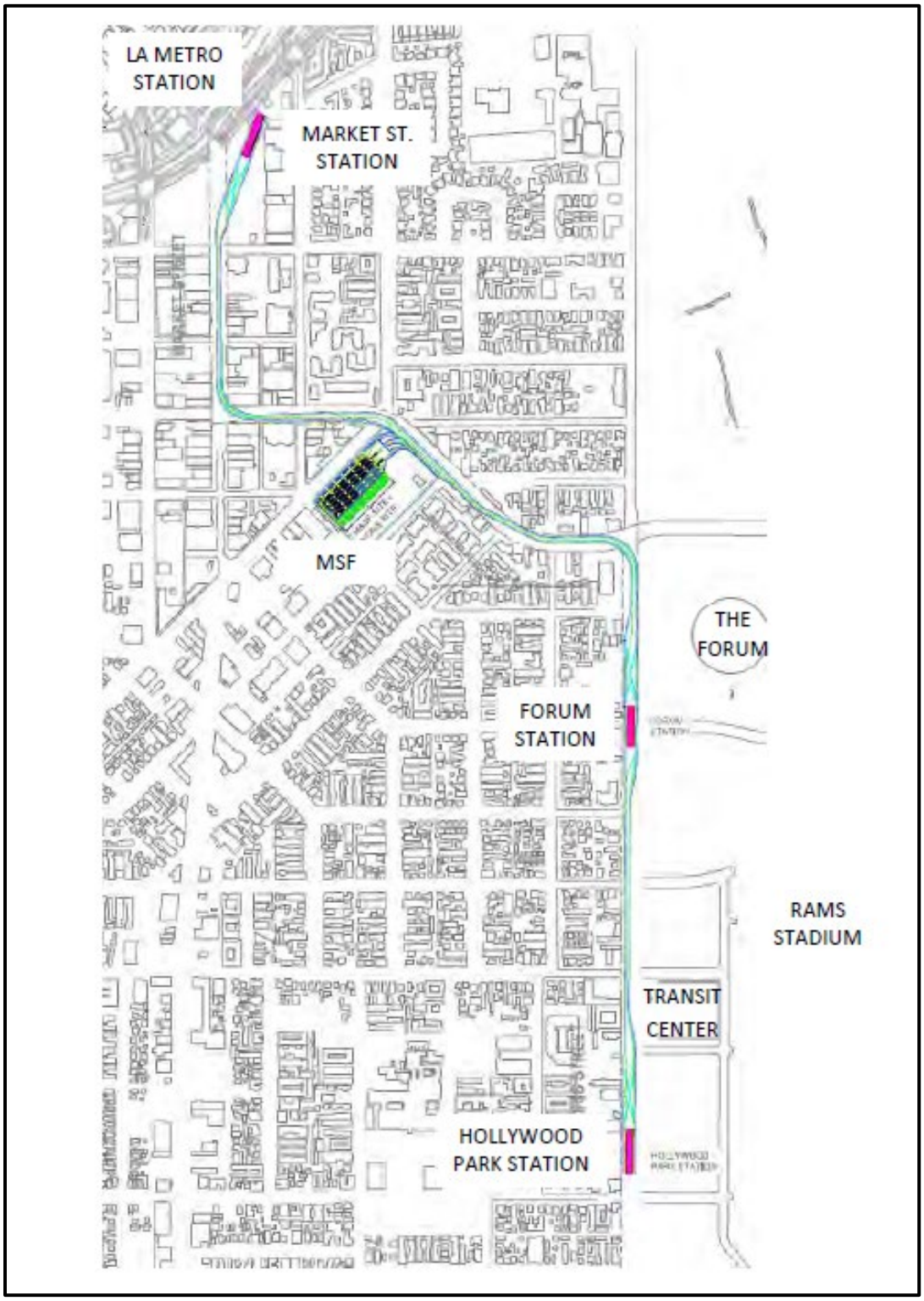
The proposed Project would consist of an elevated, automated people mover (APM) system with dual guideways to allow for continuous trains to travel in each direction. The Project extends from the intersection with the Metro Crenshaw/LAX Line north of downtown Inglewood, southwest for approximately a quarter of a mile to the intersection of Market Street and Regent Street, continue south on Market Street, then east on Manchester Boulevard, turning south on Prairie Avenue until its intersection with Hardy Street. Potential sites for Project support facilities are adjacent to the APM alignment. **Figure 1: Project Location Map** shows the Project location and surrounding area. Construction activities are expected to commence in the early 2022 and be completed in mid-2026.

The first phase would include the demolition of property acquisitions, building demolitions, utility relocations, cast-in-place (CIP) columns and slabs, and foundations for the initial construction of the Maintenance and Storage Facility (MSF). The first phase of construction would be the demolition of the commercial property for the Market Street/Florence Avenue Station at the existing commercial center at on the southeast corner of Market Street and Florence Avenue (approximately 137,525 SF), the existing commercial plaza at 500 and 510 Manchester Boulevard (the Vons store and gas station; approximately 76,604 SF), and the commercial building at 150 South Market Street on the southeast corner of Manchester and Market Street (approximately SF). Additional work in the area will commence in Phases 2 and 3 4for the completion of the aerial guideway construction of the APM and the three stations.

After the demolition, the remaining asphalt flatwork area within the lot will provide suitable space for construction staging including but not limited to space for equipment storage, material staging and storage, temporary concrete batch plants, if needed, contractor jobsite trailers, and on-site parking for construction staff throughout the entire project duration. The first phase of construction would occur between the early 2022 and the end of 2023 (including site preparation, staging, and cleanup).

The second phase would include enabling the construction sequence of the APM guideway along Prairie Avenue from the Hardy Street intersection to Manchester Boulevard. This phase includes demolition, utility relocations, foundations, CIP columns, straddle bents and the precast trapezoidal troughs and girders, and the construction of the MSF. The second phase of construction would occur between early 2023 and early 2025 (including site preparation, staging, and cleanup).

Figure 1 Project Location Map



The third phase would include enabling the construction sequence of the APM guideway along Manchester Boulevard from Prairie Avenue to Market Street, and Market Street from Manchester Boulevard to Florence Avenue. The work will include an above-ground pedestrian access walkway to the Metro Crenshaw/LAX Line's Downtown Inglewood Station, property acquisitions, building demolition, utility relocation, foundations, CIP columns, straddle bents and the precast trapezoidal troughs and girders. This phase includes site work completion to the MSF. The third phase of construction would occur between early 2024 and early 2026 (including site preparation, staging, and cleanup).

The fourth phase would include enabling the completion of the aerial construction elements including the installation of the APM system's operations, track work, station platform equipment and systems, completion of the traction power substations, testing and commissioning of the full APM system, completion of all surface construction activities including but not limited to all electrical, mechanical and utilities energizations. Additional work in the area will commence in Phase 4 for the APM system installation, testing and commissioning of the system. The fourth phase of construction would occur between late 2025 and mid-2026 (including site preparation, staging, and cleanup).

The following presents the schedule under which use of construction equipment and haul trucks would occur:

- **Phase 1 (Demolition):** April 15, 2022 – March 15, 2023
- **Phase 1 (MSF Construction):** February 2, 2023 – December 18, 2023
- **Phase 2:** March 24, 2023 – February 10, 2025
- **Phase 3:** February 14, 2024 – February 2, 2026
- **Phase 4:** October 31, 2025 – May 28, 2026

Construction activity would primarily occur over a 16 hour / day schedule with two shifts, both a morning shift from approximately 7:00 AM to 3:00 PM and an evening shift from approximately 3:00 PM to 11:00 PM, or a morning shift from approximately 7:00 AM to 3:00 PM and a night shift from approximately 11:00 PM to 7:00 AM. Other minimal construction work could occur during other hours at a reduced intensity. Delivery of construction materials would occur during the night shift, as would most lane closures. These shifts are intended to minimize impacts to daily commuter traffic and potential event traffic. Delivery of construction materials would occur during the night shift, as would most lane closures.

Pursuant to Section 5-41 of the Inglewood Municipal Code, construction between the hours of 8:00 PM. and 7:00 AM of the next day will require a permit from the Permits and License Committee of the City. The proposed Project would secure a permit(s) from the Permits and License Committee to allow for

construction work activities to occur between the hours of 8:00 PM and 7:00 AM. The ambient air quality standards analysis and HRA results are presented for both the Morning/Evening and Morning/Night construction scenarios.

3.0 ANALYSIS METHODOLGY

Intermittent, short-term construction emissions that occur from activities such as demolition, site-grading, and concrete construction were evaluated. Regulatory models used to estimate air quality and health impacts include:

- California Air Resources Board's (CARB) EMFAC2017[10] emissions inventory model. EMFAC2017 is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in California. This model reflects CARB's current understanding of how vehicles travel and how much they emit. EMFAC2017 can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future.
- CARB OFFROAD2017[11] emissions inventory model. OFFROAD is the latest emission inventory model that calculates emission inventories and emission rates for off-road equipment such as loaders, excavators, and off-road haul trucks operating in California. This model reflects CARB's current understanding of how equipment operates and how much they emit. OFFROAD can be used to show how California off-road equipment emissions have changed over time and are projected to change in the future.
- American Meteorological Society/USEPA Regulatory Model (AERMOD). AERMOD (Version 19191) is an atmospheric dispersion model which can simulate point, area, volume, and line emissions sources and has the capability to include simple, intermediate, and complex terrain along with meteorological conditions and multiple receptor locations.[12,13] AERMOD is commonly executed to yield 1-hour maximum and annual average concentrations (in parts per million or ppm and micrograms per cubic meter or µg/m3) at each receptor. AERMOD is used to estimate air concentrations at nearby receptors resulting from the activities associated with an air emission source (such as construction equipment).

10 California Air Resources Board, EMFAC2017 User's Guide, March 1, 2018, Accessed July 6, 2020 at: https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf and https://www.arb.ca.gov/emfac/2017/

11 California Air Resources Board, OFFROAD Instructions, Accessed July 6, 2020 at: http://www.arb.ca.gov/msprog/ordiesel/info_1085/oei_write_up.pdf and https://www.arb.ca.gov/orion/

12 United States Environmental Protection Agency Preferred/Recommended Models, AERMOD Modeling System, Accessed July 6, 2020 at: https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models#aermod.

13 Title 40 CFR Part 51, Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule, Accessed July 6, 2020 at: http://www.epa.gov/ttn/scram/guidance/guide/appw_05.pdf.

4.0 EXISTING CONDITIONS

The proposed Project is located in Los Angeles County (County) within the South Coast Air Basin (SCAB or Basin). The Basin is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

Regional Meteorology

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions, including wind speed, wind direction, stability, and air temperature, in combination with local surface topography (i.e., geographic features such as mountains, valleys, and Pacific Ocean), determine the effect of air pollutant emissions on local air quality.

In general, Southern California has a warm, dry Mediterranean climate; hot in the summer and mild in the winter. Temperatures are cooler near the coast and hotter near inland areas. Most of the precipitation occurs as rain during the winter months, although rain showers are common during the summer in higher-elevation desert areas. Average annual precipitation is approximately 19 inches and temperatures reach 90 degrees Fahrenheit 100 days of the year on average. August daily highs average 95 degrees while daily lows average 64 degrees Fahrenheit. January typically exhibits average daily highs of 68 degrees and average daily lows of 43 degrees Fahrenheit. The predominant wind directions are either out of the northwest or southeast. Gusts greater than 15 miles per hour occur infrequently, less than two percent of the time.

Basin climate increases the potential to create air pollution problems. Air quality within the Basin generally rates from fair to poor. Sinking or subsiding air from the Pacific High-Pressure System creates a temperature inversion (known as a subsidence inversion), which acts as a lid to vertical movement of air masses and dispersion of pollutants. The lower bound of this inversion at any given time is known as the "mixing height." Restricted maximum mixing heights are 3,500 feet above sea level or less. Weak summertime pressure gradients suppress winds and further limit horizontal dispersion of pollutants in the mixed layer below the subsidence inversion. Poorly dispersed anthropogenic (human-made) emissions, combined with strong sunshine, lead to photochemical reactions that create ozone (O_3) in this surface layer. Daytime onshore air flow (i.e., sea breeze) and nighttime offshore flow (i.e., land breeze) are quite common in Southern California. The sea breeze helps to moderate daytime temperatures and leads to air pollutants being blown out to sea at night and returning to land the following day.

Nearby Sensitive Receptors

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB and SCAQMD has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. Off-site workers are also considered sensitive receptors by the SCAQMD.

Local Air Quality

The SCAQMD maintains a network of monitoring stations within the Air Basin that monitor air quality and compliance with applicable ambient standards. The nearest air monitoring station which measures CO, NO_2, SO_2, and PM_{10} is located near Los Angeles International Airport (7201 West Westchester Parkway, Southwest Coastal LA County, Station 820), four miles to the west of the Project alignment. The nearest air monitoring station which measures $PM_{2.5}$ is located in central Los Angeles (1630 North Main Street, Central LA, Station 087), ten miles to the northeast of the Project alignment.

Table 1: **Air Quality Data Summary** summarizes the most recent three years of data (2017 through 2019) from the nearby air monitoring stations. The ozone standard was not exceeded. The State annual PM_{10} standard was exceeded in 2018 and the State 24-hour PM_{10} standard was exceeded in 2019. The State annual $PM_{2.5}$ standard was exceeded in 2018 and the State 24-hour $PM_{2.5}$ standard was exceeded in 2019. No other exceedances were observed at the nearby air monitoring stations in 2017 through 2019.

Table 1
Air Quality Data Summary (2017 - 2019)

Pollutant	Monitoring Data by Year			
	Standard[s]	*2017*	*2018*	*2019*
Ozone				
Highest 1 Hour Average (ppm)	0.09	0.086	0.074	0.082
Days over State Standard	—	0	0	0
Highest 8 Hour Average (ppm)	0.070	0.070	0.065	0.067
Days over National Standard	—	0	0	0
Days over State Standard	—	0	0	0
Nitrogen Dioxide				
Highest 1 Hour Average (ppm)	0.180/0.100	0.072	0.060	0.057
Days over State Standard	—	0	0	0
Annual Average (ppm)	0.030/0.053	0.009	0.009	0.010
Carbon Monoxide				
Highest 1 Hour Average (ppm)	20.0	2.1	1.8	1.8
Days over State Standard	—	0	0	0
Highest 8 Hour Average (ppm)	9.0	1.6	1.5	1.3
Days over State Standard	—	0	0	0
Particulate Matter (PM10)				
Highest 24 Hour Average ($\mu g/m^3$)	50	46	45	**62**
Days over State Standard	—	0	0	2
State Annual Average ($\mu g/m^3$)	20	19.8	**20.5**	19.2
Particulate Matter (PM2.5)				
Highest 24 Hour Average ($\mu g/m^3$)	35	27.8	30.5	**43.5**
Days over National Standard	—	0	0	1
State Annual Average ($\mu g/m^3$)	12	11.9	**12.6**	10.9

*Notes: Values in **bold** are in excess of at least one applicable standard.*
Generally, State and national standards are not to be exceeded more than once per year.
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
Source: South Coast Air Quality Management District, Annual Air Quality Summaries, Accessed July 7, 2020 at: http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year.

Adjusted Baseline

The Hollywood Park Specific Plan (HPSP) project is located adjacent to the project site. Related to air quality, the changes associated with the HPSP Adjusted Baseline, currently under development and/or operational, include operational air emissions associated with new uses in the HPSP area. The HPSP Adjusted Baseline would emit air pollutants associated with vehicle trips, maintenance operations, energy consumption from all of its operational land uses. Specifically, vehicle trips associated with activities at the HPSP began taking place during 2020 when the NFL Stadium began operations and uses are operating on the site and have an impact on local and regional air quality. Accordingly, the air pollutant emissions associated with the HPSP area were considered as part of an Adjusted Baseline.

Regional air emissions from the Proposed Project were assessed based on the incremental increase in emissions compared to existing conditions (that is, project-related), consistent with SCAQMD methodology. This methodology measures the incremental project contributions only and compares to project-level significance thresholds and so the Adjusted Baseline conditions are not relevant to the mass emissions threshold (**Section 8**).

The localized air quality analysis includes the Proposed Project impacts on local air quality concentrations of PM_{10} and $PM_{2.5}$. However, given the regional nonattainment status, the significance threshold is also only a project-related impact analysis. Thus, the Adjusted Baseline is not relevant to the PM_{10} and $PM_{2.5}$ localized air quality analysis for the Proposed Project (**Section 9**).

However, the localized air quality analysis includes the Proposed Project impacts on local air quality concentrations of CO, SO_2, and NO_2. The project-related concentrations would be added to the existing concentration from a nearby monitoring station. The Adjusted Baseline would emit air pollutants associated with vehicle trips, maintenance operations, energy consumption from all of its operational land uses concurrently during Proposed Project construction. Specifically, Adjusted Baseline activities would begin taking place during 2020 when the NFL Stadium begins operations and uses are operating on the site and would have an impact on local and regional air quality (which would not be accounted for in the existing monitoring data). Therefore, the project-related concentrations would be added to the existing concentration from a nearby monitoring station plus the concentrations associated with the Adjusted Baseline and the total would be compared to the CO, SO_2, and NO_2 NAAQS and CAAQS (**Section 9**).

The health impacts are also based on the maximum project-level incremental impact compared to a project-level significance thresholds (that is, does the project itself contributed significantly to the local health of nearby receptors). For this reason, the Adjusted Baseline is not relevant to the health impact analysis for the Proposed Project (**Section 10**).

Similarly, although the Adjusted Baseline has been constructed and in operation prior to start of construction of the Proposed Project, its potential impact on global emissions would not affect the threshold of significance or the impact analysis regarding GHG emissions from the Proposed Project (which is also based on project-level incremental contribution). For this reason, the Adjusted Baseline is not relevant to the GHG impact analysis for the Proposed Project (**Section 11**).

5.0 REGULATORY CONTEXT

USEPA has established the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) for six common air pollutants known as "criteria pollutants."[14] These air pollutants consist of CO, NO_2, ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), SO_2, and lead (Pb). An ambient air quality standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population such as children and the elderly. Ambient air quality standards are classified as either "primary" or "secondary" standards. Primary standards define levels of air quality, including an adequate margin of safety, necessary to protect the public health. Secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The ambient air quality standards are shown in **Table 2: State and National Criteria Air Pollutant Standards, Effects, and Sources**.

Under the federal CAA, USEPA designate air basins where NAAQS are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there are inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." Areas where air pollution levels persistently exceed the State or national ambient air quality standards are designated "nonattainment." Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. The South Coast Air Basin portion of the County is in nonattainment status for the federal ozone, lead, and $PM_{2.5}$; and in attainment for the federal CO, NO_2, SO_2, and PM_{10}.[15]

CARB manages air quality, regulates mobile emissions sources, and oversees the activities of county and regional Air Pollution Control Districts and Air Quality Management Districts. CARB regulates local air quality indirectly by establishing State ambient air quality standards and vehicle emissions and fuel standards; and by conducting research, planning and coordinating activities. California has adopted ambient standards (known as California Ambient Air Quality Standards or CAAQS) that are more stringent

14 United States Environmental Protection Agency, Six Common Air Pollutants, Accessed July 6, 2020 at: https://www.epa.gov/criteria-air-pollutants.

15 United States Environmental Protection Agency, The Green Book Nonattainment Areas for Criteria Pollutants, Accessed July 6, 2020 at: https://www.epa.gov/green-book.

than the federal standards for some criteria air pollutants. Under the California Clean Air Act patterned after the CAA, areas have been designated as attainment or nonattainment with respect to the State standards. The South Coast Air Basin portion of the County is in nonattainment status for the State ozone, PM_{10}, and $PM_{2.5}$; and is in attainment status for CO, NO_2, and SO_2.[16, 17]

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. The South Coast Air Basin is a sub-region of the SCAQMD jurisdiction. While air quality in this area has improved, the Basin requires continued diligence to meet air quality standards. The SCAQMD has adopted a series of Air Quality Management Plans to meet the CAAQS and NAAQS. These plans require control technology for existing sources, control programs for area sources and indirect sources, a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified permitted emission sources and transportation control measures.

On March 3, 2017, the SCAQMD adopted the 2016 Air Quality Management Plan (AQMP) which includes strategies and measures needed to meet the NAAQS. The AQMP demonstrates attainment of the ozone NAAQS as well as the latest $PM_{2.5}$ standards.[18] The SCAQMD also adopts rules and regulations to implement portions of the AQMP. On October 1, 2015, the USEPA strengthened the NAAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 ppb. The South Coast Air Basin is classified as an "extreme" nonattainment area and the Coachella Valley is classified as a "severe-15" nonattainment area for the 2015 Ozone NAAQS. The upcoming 2022 AQMP will be developed to address the requirements for meeting this standard. For the proposed Project, the relevant SCAQMD rules and regulations include:

- **Rules 201 and 203 (Permits to Construct and Operate**): These rules require that owners of applicable construction or operation equipment obtain written permits from the SCAQMD prior to construction and operation.

16 California Air Resources Board, Area Designations Maps/State and National, Accessed July 6, 2020 at: http://www.arb.ca.gov/desig/adm/adm.htm.

17 South Coast Air Quality Management District, NAAQS and CAAQS Attainment Status for the South Coast Air Basin, February 2016, Accessed July 6, 2020 at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf.

18 South Coast Air Quality Management District, 2016 Air Quality Management Plan, March 1, 2017, Accessed July 6, 2020 at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan.

Table 2
State and National Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 Hour 8 Hour	0.09 ppm 0.07 ppm	– 0.070 ppm	High concentrations can directly affect lungs, causing irritation. Long–term exposure may cause damage to lung tissue.	Formed when reactive organic gases and nitrogen oxides react in the presence of sunlight. Major sources include on–road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide (CO)	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9.0 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline–powered motor vehicles.
Nitrogen Dioxide (NO_2)	1 Hour Annual	0.18 ppm 0.03 ppm	0.10 ppm 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish–brown.	Motor vehicles, petroleum–refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide (SO_2)	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	0.075 ppm 0.5 ppm 0.14 ppm 0.030 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM_{10})	24 Hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 –	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume–producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind–raised dust and ocean sprays).
Fine Particulate Matter ($PM_{2.5}$)	24 Hour Annual	– 12 µg/m^3	35.0 µg/m^3 12.0 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including nitrogen oxides, sulfur oxides, and organics.
Lead (Pb)	Month Rolling 3 Month	1.5 µg/m^3 –	– 0.15 µg/m^3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present sources: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

Source: Air Quality Standards, https://ww2.arb.ca.gov/resources/background-air-quality-standards.

- **Rule 402 (Nuisance):** This rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 403 (Fugitive Dust):** This rule requires fugitive dust sources to implement Best Available Control Measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM10 emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.
- **Rule 1113 (Architectural Coatings):** This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 2202 (Employee Commute Reduction Program Guidelines)**: This rule is designed to assist employers in understanding the development and implementation requirements of the Employee Commute Reduction Program (ECRP) at their worksites. The ECRP focuses on reducing work related vehicle trips and vehicle miles traveled to a worksite with the purpose of achieving and maintaining the employers' designated average vehicle ridership targets.

A fugitive dust control program pursuant to the provisions of SCAQMD Rules 402 and 403 shall be implemented. This program shall include, but not be limited to the following:

- Prior to start of the initial on-site construction, the City Engineer shall confirm that the proposed construction plan is in compliance with SCAQMD Rule 403, fugitive dust shall be controlled by the applicable best available control measures listed in Table 1 of Rule 403.
- Water or a stabilizing agent shall be applied at least three times daily, preferably in the mid-morning, afternoon, and after work is done for the day, to exposed surfaces including graded and disturbed areas in sufficient quantity to prevent generation of dust plumes.
- Track-out shall not extend 25 feet or more from an active operation and track-out shall be removed at the conclusion of each workday. The contractor shall use a gravel apron, 25 feet long by road width, or a pipe-grid track-out control device to reduce mud/dirt track-out from active operations and unpaved truck exit routes.
- A wheel washing system shall be installed and used to remove bulk material from tires and vehicle undercarriages before vehicles exit the Project alignment.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered (e.g., with fabric tarps or other enclosures that would reduce fugitive dust emissions) and maintain a freeboard height of 12 inches, in accordance with California Vehicle Code Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on unpaved roads shall be limited to 15 miles per hour.

- Operations on unpaved surfaces shall be suspended when winds exceed 25 miles per hour.
- On-site stockpiles shall be covered or watered at least twice per day.

Criteria Air Pollutants

The following provides a brief summary of the potential health and welfare effects and typical sources of each of the criteria air pollutants and air toxics.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. O_3 is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOC) and NO_x. VOC and NO_x are known as precursor compounds for O_3. Substantial ozone production generally requires O_3 precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. O_3 is a regional air pollutant because it is not emitted directly by sources but is formed downwind of sources of VOC and NO_x under the influence of wind and sunlight. O_3 concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional air subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds.

Carbon Monoxide

CO is a nonreactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground–level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity, resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California, but in more recent years, CO measurements and modeling are not a priority in most California air districts due to the retirement of older vehicles, fewer emissions from new vehicles, and improvements to fuels.

Nitrogen Oxides

When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and NO_2 are the most significant air pollutants generally referred to as NO_x. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO_2 and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema. Inhaling NO_2 can lead to respiratory illnesses such as bronchitis and pneumonia.

Volatile Organic Compounds

VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide (CO_2), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. VOC are any reactive compounds of carbon, excluding methane, CO, CO_2, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds.

VOC include a variety of chemicals, some of which may have short- and long-term adverse health effects. VOC are emitted by a wide array of products numbering in the thousands. Examples include paints and lacquers, paint strippers, cleaning supplies, building materials and furnishings, as well as fuel storage and use.

VOC can cause eye, nose, and throat irritation; headaches, loss of coordination, nausea; and damage to liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effect. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics.

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, wood burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition, construction activities and mining, are

more local in nature, while others such as vehicular traffic and wood burning stoves and fireplaces, have a more regional effect.

Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates can also damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 micrometers) settles out rapidly and is easily filtered by human breathing passages. This dust is of concern more as a soiling nuisance rather than a health hazard. The remaining fractions, PM_{10} and $PM_{2.5}$, are a health concern particularly at levels above the federal and California ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus penetrate to the deepest parts of the lungs.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health. The CARB has estimated that achieving the ambient air quality standards for PM_{10} could reduce premature mortality rates by 6,500 cases per year.

Sulfur Dioxide

SO_2 is a combustion product of sulfur or sulfur–containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead

Ambient lead concentrations meet both the federal and State standards in the Project area. Lead has a range of adverse neurotoxin health effects and was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline in California has resulted in dramatically decreased levels of atmospheric lead. Metal processing is currently the primary source of lead emissions in the SCAB. The highest concentrations of lead in air are generally found near lead smelters and general aviation airports; where piston aircraft use leaded fuel. Other stationary sources that generate lead emissions include waste incinerators, utilities, and lead-acid battery manufacturers. The maximum lead concentrations recorded in the Project area is below federal and California standards. Notably, diesel fuel does not contain lead emissions and gasoline fuel is unleaded.

Toxic Air Contaminants

Non-criteria air pollutants or toxic air contaminants (TAC) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TAC include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TAC includes approximately 240 compounds, including particulate emissions from diesel-fueled engines and asbestos.

In August of 1998, CARB identified particulate emissions from diesel-fueled engines as TAC. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*[19] and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines.*[20] The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and 85 percent in 2020.[21] The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

Diesel particulate matter (DPM) is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solid and liquid material that condenses during the dilution process. The basic fractions of DPM are elemental carbon; heavy hydrocarbons derived from the fuel and lubricating oil and hydrated sulfuric acid derived from the fuel sulfur. DPM contains a large portion of the polycyclic aromatic hydrocarbons (PAH) found in diesel exhaust. Diesel particulates include small nuclei particles of diameters below 0.04 micrometers (µm) and their agglomerates of diameters up to 1 µm. DPM is a major factor in total TAC exposure in California.

California State law defines TAC as air pollutants having carcinogenic effects. A total of 243 substances have been designated as TAC under California law; they include the 187 (federal) hazardous air pollutants (HAP) adopted in accordance with AB 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources but AB 2588 does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures.

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19 California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000. Accessed July 6, 2020 at http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

20 California Air Resources Board, Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, October 2000. Accessed July 6, 2020 at https://www.arb.ca.gov/diesel/documents/rmgFinal.pdf.

21 Generally, there was a 60 percent reduction in health risks from 2005 through 2015, based on the SCAQMD Multiple Air Toxics Exposure Study.

In 2005, the SCAQMD conducted a comprehensive study on air toxics in the SCAB called the Multiple Air Toxics Exposure Study (MATES-III). The monitoring program measured more than 30 air pollutants, including both gas and particulates. The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. MATES-III found that the average cancer risk in the region from carcinogenic air pollutants ranges from approximately 870 in a million to 1,400 in a million, with an average regional risk of approximately 1,200 in a million.[22]

In 2015, the Multiple Air Toxics Exposure Study IV (MATES IV) is a follow up to previous air toxics studies in the Basin. The MATES IV Study includes an updated emissions inventory of toxic air contaminants and a modeling effort to characterize risk across the SCAB. The study focuses on the carcinogenic risk from exposure to air toxics but does not estimate mortality or other health effects from particulate exposures. An additional focus of MATES IV is the inclusion of measurements of ultrafine particle concentrations. Results for MATES-IV show that trends in monitored levels air toxics continue to decline, modeled exposures and risks were substantially lower compared to MATES III (approximately 60 percent decrease), and DPM remains the largest component of air toxics estimated risk, at approximately 68 percent of the South Coast Air Basin wide cancer risk of 418 per million persons, ranging from 320 to 480 per million persons. Based on data within MATES-IV, the proposed Project is within an area with an estimated cancer risk of 1,001 to 1,200 per million persons.[23]

6.0 THRESHOLDS OF SIGNIFICANCE

Because of the SCAQMD's regulatory role in the Basin, the significance thresholds and analysis methodologies in the SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts for construction, operations, and air toxics.[24] These significance thresholds, under which the proposed Project was evaluated, are described within the following section. The proposed Project would result in a significant construction air quality impact if the Project exceeds the concentration significance thresholds set forth in **Table 3: Ambient Air Quality Significance Thresholds for Criteria Pollutants**. Per SCAQMD guidance, the evaluated concentrations of CO, NO_2, and SO_2 included both the Project contribution plus background concentrations. The total concentration is then compared to the significance thresholds. For CO, NO_2, and SO_2, these significance thresholds are reflective of the CAAQS and NAAQS. Background

22 South Coast Air Quality Management District, Multiple Air Toxics Exposure Study (MATES-III) in the South Coast Air Basin, September 2008, Accessed July 6, 2020 at: https://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iii.

23 South Coast Air Quality Management District, Multiple Air Toxics Exposure Study (MATES-IV) in the South Coast Air Basin, May 1, 2015, Accessed July 6, 2020 at: http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iv.

24 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, April 2019, Accessed July 6, 2020 at: http://www.aqmd.gov/ceqa/hdbk.html.

concentration were based on existing air monitoring stations near the Project alignment and represent existing air emissions sources within the Air Basin. Further information on the background concentrations is provided in **Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions**. Per SCAQMD guidance, the Project contribution of PM_{10} and $PM_{2.5}$ is compared to the significance thresholds without adding background concentrations.

The proposed Project would also result in a significant health impact if the carcinogenic or toxic air contaminants individually or cumulatively are equal to or exceed the maximum individual cancer risk of ten in one million persons or an chronic and acute hazard index of 1.0 or the cancer burden of 0.5 excess cancer cases (in areas greater than or equal to one in one million).[25]

Table 3
Ambient Air Quality Significance Thresholds for Criteria Pollutants

Pollutant	Averaging Period	Pollutant Concentration Threshold
CO	1-hour /8-hour	SCAQMD is in attainment (federal and State); project is significant if it causes or contributes to an exceedance of the attainment standards of 20 ppm (1-hour) and 9 ppm (8-hour)
NO_2	1-hour	SCAQMD is in attainment (federal and State); project is significant if it causes or contributes to an exceedance of the following attainment standard 0.18 ppm (State) and 0.10 ppm (federal)
	Annual	0.03 ppm (state) and 0.0534 ppm (federal)
PM_{10}	24-hour	10.4 $\mu g/m^3$ (construction) and 2.5 $\mu g/m^3$ (operation)
	Annual	1.0 $\mu g/m^3$ (construction and operation)
$PM_{2.5}$	24-hour	10.4 $\mu g/m^3$ (construction) and 2.5 $\mu g/m^3$ (operation)
SO_2	1-hour	0.25 ppm (State) and 0.075 ppm (federal)
	24-hour	0.04 ppm (State)
Lead	30-day Average	1.5 $\mu g/m^3$ (State)
	Rolling 3-month Average	0.15 $\mu g/m^3$ (federal)

Source: South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, April 2019, Accessed July 6, 2020 at: http://www.aqmd.gov/ceqa/hdbk.html

25 Cancer burden is the total cancer risk for all receptors divided by the estimated population within the modeling domain.

7.0 MITIGATION MEASURES

The following mitigation measures describe a number of specific actions to reduce construction NOx emissions from on-road vehicles and off-road equipment used in construction activities. **MM AQ-1** through **MM AQ-4** were incorporated into the post-mitigation modeling (see **Sections 8, 9, and 10** for unmitigated and mitigated air quality and health risk assessment results). However, the extent to which the remaining measures would reduce air quality impacts is not quantifiable. Nevertheless, the following mitigation measures are required to reduce the air quality and health impacts for cumulatively considerable construction emissions of ozone precursor of NOx:

MM AQ-1: Construction contractors shall, at a minimum, use equipment that meets the USEPA's Final Tier 4 emissions standards for off-road diesel-powered construction equipment with 50 horsepower (hp) or greater, for all phases of construction activity, unless it can be demonstrated to the City of Inglewood Planning Division with substantial evidence that such equipment is not available. To ensure that Final Tier 4 construction equipment or better shall be used during the proposed Project's construction, the City of Inglewood shall include this requirement in applicable bid documents, purchase orders, and contracts. The City of Inglewood shall also require periodic reporting and provision of written construction documents by construction contractor(s) and conduct regular inspections to the maximum extent feasible to ensure and enforce compliance.

Such equipment will be outfitted with Best Available Control Technology devices including a CARB certified Level 3 Diesel Particulate Filters (DPF). Level 3 DPF are capable of achieving at least 85 percent reduction in particulate matter emissions. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Final Tier 4 emissions standards for a similarly sized engine, as defined by the CARB's regulations. Successful contractors must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities. The proposed Project representative will make available to the lead agency and SCAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used during construction. The inventory will include the horsepower rating, engine production year, and certification of the specified Tier standard. A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be maintained on site at the time of mobilization for each applicable piece of construction equipment.

If any of the following circumstances listed below exist and the Contractor provides written documentation consistent with project contract requirements, the Contractor shall submit an alternative compliance plan that identifies operational changes or other strategies that can reduce a comparable level of NOx emissions as Tier 4-certified engines during construction activities.

- The Contractor does not have the required type of off-road construction equipment within its current available inventory as to a particular vehicle or equipment by leasing or short-term rent, and the Contractor has attempted in good faith and with due diligence to lease or short-term rent the equipment or vehicle, but the equipment or vehicle is not available for lease or short-term rent within 120 miles of the Project alignment, and the Contractor has submitted documentation to the City of Inglewood showing that the requirements of this exception provision apply.
- 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 with due diligence to lease or short-term rent the equipment or vehicle that would comply, but the equipment or vehicle is not available for lease or short-term rent within 120 miles of the Project alignment, and the Contractor has submitted documentation to the City of Inglewood showing that the requirements of this exception provision apply.
- Contractor has ordered equipment or vehicle to be used on the construction project in compliance at least 60 days before that equipment or vehicle is needed at the Project alignment, 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 with due diligence to lease or short-term rent the equipment or vehicle that would comply, but the equipment or vehicle is not available for lease or short-term rent within 120 miles of the project site, and the Contractor has submitted documentation to the City of Inglewood showing that the requirements of this exception provision apply.
- Construction-related diesel equipment or vehicle will be used on the Project alignment for fewer than 20 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 mitigation measure.

- Documentation of good faith efforts and due diligence regarding the previous exceptions shall include written record(s) of inquiries (i.e., phone logs) to at least three leasing/rental companies that provide construction on-road trucks and off-road equipment, documenting the availability/unavailability of the required types of truck/equipment. The City of Inglewood will, from time-to-time, conduct independent audit of the availability of such vehicles and equipment for lease/rent within a 120 mile radius of the project site, which may be used in reviewing the acceptability of the Contractor's good faith efforts and due diligence.

MM AQ-2: Equipment such as concrete/industrial saws, pumps, aerial lifts, light stands, air compressors, and forklifts shall be electric or alternative-fueled (i.e., non-diesel). Pole power shall be utilized at the earliest feasible point in time, and shall be used to the maximum extent feasible in lieu of generators. If stationary construction equipment, such as diesel-powered generators, must be operated continuously, such equipment must be Final Tier 4 construction equipment or better and located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.

MM AQ-3: At a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export with a gross vehicle weight rating of at least 14,001 pounds), or best commercially available equipment, that meet CARB's 2010 engine emissions standards at 0.01 g/hp-hour of particulate matter and 0.20 g/hp-hour of NOx emissions or newer, cleaner trucks, unless the Contractor provides written documentation consistent with project contract requirements the circumstances identified in MM AQ-1 exist and the Contractor submits an alternative compliance plan. Operators shall maintain records of all trucks associated with Project construction to document that each truck used meets these emission standards. The City of Inglewood shall include this requirement in applicable bid documents, purchase orders, and contracts. Operators shall maintain records of all trucks associated with Project construction to document that each truck used meets these emission standards and make the records available for inspection.

MM AQ-4: Require the use of electric or alternatively fueled (e.g., natural gas) sweepers with HEPA filters.

MM AQ-5: A publicly visible sign shall be posted with the telephone number and person to contact at the City of Inglewood regarding dust complaints. This person shall respond and take corrective action with 24 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

MM AQ-6: All roadways, driveways, sidewalks, etc., being installed as part of the project should be completed as soon as practical; in addition, building pads should be laid as soon as practical after grading.

MM AQ-7: To the extent feasible, allow construction employees to commute during off-peak hours.

MM AQ-8: Make access available for on-site lunch trucks during construction, as feasible, to minimize off-site construction employee vehicle trips.

MM AQ-9: Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Grid-based power can be from a direct hookup or a tie into electricity from power poles.

MM AQ-10: Contractors shall maintain and operate construction equipment to minimize exhaust emissions. All construction equipment must be properly tuned and maintained in accordance with the manufacturer's specifications and documentation demonstrating proper maintenance, in accordance with the manufacturer's specifications, shall be maintained on site. Tampering with construction equipment to increase horsepower or to defeat emission control devices must be prohibited.

MM AQ-11: Enter into applicable bid documents, purchase orders, and contracts to notify all construction vendors, contractors, and/or haul truck operators that vehicle and construction equipment idling time will be limited to no longer than five minutes, consistent with the CARB's policy. For any idling that is expected to take longer than five minutes, the engine should be shut off. Notify construction vendors, contractors, and/or haul truck operators of these idling requirements at the time that the purchase order is issued and again when vehicles enter the Project alignment. To further ensure that drivers understand the vehicle idling requirement, post signs at the proposed Project entry gates and throughout the Project alignment, where appropriate, stating that idling longer than five minutes is not permitted.

In addition to these mitigation measures, the following recommendations are provided for certain school/daycare centers:

- Indoor air filtration systems should meet or exceed an efficiency standard of Minimum Efficiency Reporting Value (MERV) 13 or higher (i.e., a filter efficiency of approximately 80 percent of fine particulates in the range of 1.0 to 3.0 micrometers) to limit DPM exposure at school/daycare sensitive receptors in which the health impacts using **MM AQ-1** through **MM AQ-11** potentially exceed the significance thresholds. MERV-13 air filters may reduce concentrations of DPM from mobile sources by approximately 53 percent and cancer risk by 42 percent. An ongoing maintenance plan for building air filtration systems would be implemented. Ventilation systems should meet the following minimal design standards:
  - A MERV-13, or higher, rating that represents a minimum of 80 percent efficiency to capture fine particulates;
  - At least one air exchange(s) per hour of fresh outside filtered air;
  - At least four air exchange(s) / hour recirculation; and
  - At least 0.25 air exchange(s) per hour in unfiltered infiltration; and[26]
  - Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., one mph).

The presence of a noise barrier often leads to pollutant concentration reductions behind the barrier during meteorological conditions with winds directionally from the project site. $PM_{2.5}$ concentrations generally decrease between 15 and 50 percent behind a noise barrier. However, conditions may also occur when pollutant concentrations are greater behind the barrier than when no barrier is present. These results imply that the presence of a noise barrier can lead to higher pollutant concentrations during certain wind conditions.[27]

8.0 CONSTRUCTION EMISSIONS INVENTORY

The proposed Project would consist of an elevated APM system with dual guideways to allow for continuous trains to travel in each direction. The proposed Project is designed as an aerial APM system that runs approximately 1.8 miles along Market Street between Florence Avenue and Manchester Boulevard, where it transitions east along Manchester Boulevard for approximately half a mile to Prairie Avenue for approximately one mile.

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26 San Francisco Department of Public Health. *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review,* May 2008, Accessed July 7, 2020 at: https://www.gsweventcenter.com/Draft_SEIR_References/2008_0501_SFDPH.pdf

27 Atmospheric Environment. *Impacts of Noise Barriers on Near-road Air Quality,* May 2008, Accessed August 25, 2020 at: https://escholarship.org/content/qt1ch1q6wx/qt1ch1q6wx.pdf.

Construction activities are expected to commence in early 2022 and be completed in mid-2026. Construction activity would primarily occur over a 24 hour per day schedule with three shifts as follows:

- a morning shift from approximately 7:00 AM to 3:00 PM (Morning Shift), and
- an evening shift from approximately 3:00 PM to 11:00 PM (Evening Shift), or
- a night shift from approximately 11:00 PM to 7:00 AM (Night Shift).

Combinations of these shifts would be referred to "Moring/Night" or "Night/ Morning." **Section 2** provides additional Project information. The AAQS analysis and HRA results are presented for both the Morning/Evening and Morning/Night construction scenarios.

Intermittent (short-term) construction emissions that occur from activities related to the proposed Project were evaluated. The air quality analysis focuses on daily emissions from construction (mobile, area, stationary, and fugitive sources) activities and compares the emission estimates to thresholds of significance. The air quality analysis was developed based on the SCAQMD *Air Quality Handbook.*[28] The air quality analysis was conducted to determine the air quality impacts, using the significance levels identified by the SCAQMD.[29] Assumption for the air construction emission estimates were based on the Inglewood Transit Connector: Construction Scenarios for the Environmental Impact Report by Pacifica Services (dated June 27, 2020).

Table 4: Daily Unmitigated Construction Emissions for Proposed Project shows the estimated daily unmitigated emissions for construction related emissions (including combustion engine and fugitive dust emissions) for the proposed Project. The grand total construction emissions as well as the contribution from employee vehicle trips, pickup/delivery trucks, haul trucks, and off-road equipment are presented. The off-road equipment represents the largest contribution to the total construction emissions. The daily unmitigated NO_x construction emissions would potentially exceed the SCAQMD thresholds of significance during 2022 through 2025. Therefore, appropriate mitigation measures (such as requiring USEPA Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower) was evaluated in conjunction with the ambient air quality analysis (**Section 9**) and the health risk assessment (**Section 10**).

28 South Coast Air Quality Management District, CEQA Air Quality Handbook, Accessed July 6 ,2020 at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

29 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, April 2019, Accessed July 6, 2020 at: http://www.aqmd.gov/ceqa/hdbk.html.

Table 4
Daily Unmitigated Construction Emissions (pounds) for Proposed Project

Construction Year	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2
Grand Total						
2022	10.2	107	**128**	7.76	5.15	0.50
2023	17.3	203	**191**	12.5	8.23	0.88
2024	17.0	198	**179**	11.4	7.63	0.82
2025	18.5	218	**186**	11.5	7.74	0.86
2026	10.6	124	100	6.13	4.17	0.46
Significance Thresholds	75	550	100	150	55	150
Employee Vehicles						
2022	0.18	5.76	0.56	0.31	0.13	0.02
2023	0.42	13.1	1.22	0.76	0.32	0.05
2024	0.30	9.22	0.82	0.57	0.24	0.03
2025	0.42	12.8	1.09	0.84	0.35	0.05
2026	0.13	3.89	0.32	0.27	0.11	0.01
Pickup/Delivery Trucks						
2022	0.34	8.36	4.23	0.69	0.30	0.05
2023	0.70	16.8	8.41	1.54	0.68	0.10
2024	0.73	17.6	8.28	1.73	0.76	0.11
2025	0.53	13.5	5.71	1.39	0.60	0.09
2026	0.49	12.5	5.04	1.39	0.60	0.09
Haul Trucks						
2022	1.29	4.58	48.6	3.66	1.86	0.19
2023	0.35	2.53	44.3	4.64	2.09	0.26
2024	0.28	2.02	35.2	3.67	1.65	0.21
2025	0.27	2.04	35.4	3.73	1.67	0.21
2026	0.10	0.77	13.3	1.41	0.63	0.08
Off-road Equipment						
2022	8.38	88.1	74.4	3.10	2.85	0.24
2023	15.8	171	**137**	5.59	5.15	0.47
2024	15.7	169	**135**	5.41	4.98	0.46
2025	17.3	190	**144**	5.55	5.11	0.51
2026	9.88	107	81.2	3.07	2.82	0.29

*Note: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

The off-road equipment represents the largest contribution to the total construction emissions; approximately 91 percent of the VOC emissions, approximately 85 percent of the CO emissions, approximately 73 percent of the NO_x emissions, approximately 46 percent of the PM_{10} emissions, approximately 64 percent of the $PM_{2.5}$ emissions, and approximately 56 percent of the SO_2 emissions. Cranes, backhoes/loaders, air compressors, and compactors contribute the greatest amounts to the daily total NO_x emissions.

Table 5: Daily Mitigated Construction Emissions for Proposed Project shows the estimated daily mitigated emissions for construction related emissions (including combustion engine and fugitive dust emissions) for the proposed Project.

Table 5
Daily Mitigated Construction Emissions (pounds) for Proposed Project

Construction Year	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2
Grand Total						
2022	7.07	223	95.1	5.31	2.95	0.43
2023	11.6	443	**141**	8.21	4.35	0.75
2024	11.2	443	**138**	7.21	3.88	0.68
2025	11.7	478	**149**	7.23	3.90	0.68
2026	6.26	260	80.2	3.72	2.01	0.35
Significance Thresholds	75	550	100	150	55	150
Employee Vehicles						
2022	0.18	5.76	0.56	0.31	0.13	0.02
2023	0.42	13.1	1.22	0.76	0.32	0.05
2024	0.30	9.22	0.82	0.57	0.24	0.03
2025	0.42	12.8	1.09	0.84	0.35	0.05
2026	0.13	3.89	0.32	0.27	0.11	0.01
Pickup/Delivery Trucks						
2022	0.34	8.36	4.23	0.69	0.30	0.05
2023	0.70	16.8	8.41	1.54	0.68	0.10
2024	0.73	17.6	8.28	1.73	0.76	0.11
2025	0.53	13.5	5.71	1.39	0.60	0.09
2026	0.49	12.5	5.04	1.39	0.60	0.09
Haul Trucks						
2022	1.29	4.58	48.6	3.66	1.86	0.19
2023	0.35	2.53	44.3	4.64	2.09	0.26
2024	0.28	2.02	35.2	3.67	1.65	0.21
2025	0.27	2.04	35.4	3.73	1.67	0.21
2026	0.10	0.77	13.3	1.41	0.63	0.08
Off-road Equipment						
2022	5.25	205	41.7	0.65	0.65	0.17
2023	10.1	411	86.7	1.26	1.26	0.33
2024	9.93	415	93.2	1.23	1.23	0.32
2025	10.4	450	**107**	1.28	1.27	0.33
2026	5.54	243	61.6	0.66	0.66	0.17

*Note: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

The total construction emissions including the contribution from employee vehicle trips, pickup/delivery trucks, haul trucks, and off-road equipment are presented. The daily mitigated NO_x construction emissions would potentially exceed the SCAQMD thresholds of significance during 2023 through 2025. However, as presented in **Section 9**, the ambient air concentration impacts due to Project construction would be less than significant at all nearby receptors for all pollutants. Therefore, although the daily emissions for NO_x would potentially exceed the SCAQMD significance thresholds, the resultant air concentrations would not likely exceed the SCAQMD significance thresholds.

The mitigation measures represent a reduction of approximately 23 percent of the NO_x emissions, approximately 36 percent of the PM_{10} emissions, and approximately 48 percent of the $PM_{2.5}$ emissions.

Air Emission Calculation Methodology

Air emission sources include combustion exhaust from on-road vehicles such as construction worker vehicles, pickup/delivery trucks, haul trucks, and construction equipment such as backhoes, loaders, and graders.

On-Road Vehicles

Vehicular emissions were computed using the CARB's emission factor model, EMFAC, to estimate on-road emissions. Construction worker trips were modeled using the light-duty auto/truck classification. Construction worker trips are a composite of gasoline and diesel vehicles. Foreman trucks used on-site were modeled as gasoline and diesel light heavy-duty trucks. Haul trucks were modeled using the diesel combination long-haul truck classification, which is a heavy-heavy duty truck emission factor for public vehicles. Construction worker vehicles usage were assumed to be 12 miles per one way trip per day.[30] Distance traveled is assumed to be 20 miles per one way trip per day for dump trucks, delivery trucks, and concrete trucks.[31] Distance traveled is assumed to be 29 miles per one way trip per day for asphalt removal trucks, asphalt pavement trucks, and soil spoils dump trucks.[32] A conservative estimate of 10 percent of the total truck trips within each phase were assumed to occur on any given day. The usage factor for haul trucks is approximately 25 percent. Paved road dust, brake wear, and tire wear particulate emissions were also accounted for and included in the analysis using EMFAC emission factors and methodologies. For haul trucks, exhaust particulate emissions is approximately 14 percent of the total particulate emissions.

Criteria pollutant emissions associated with on-road vehicles were calculated by combining the activity information with emissions factors, in grams per mile, derived using the EMFAC emissions model. Emissions calculations were based on **Equation 1**. The EMFAC emissions factors are summarized on **Table 6: Emissions Factors (g/mile) for On-Road Vehicles** for employee vehicles, pickup trucks, delivery trucks, and haul trucks for 2022 through 2026.

Equation 1

*Emission Rate (tons/year) = Emission Factor (gram/mile) * trips per day * miles per trip * days/year * (453.59/2000 tons/gram)*

30 California Emissions Estimator Model (CalEEMod) Version 2016.3.2

31 The maximum distance from four supporting facilities: CalPortland, Catalina Pacifica Concrete, Cemex-Inglewood, and Robertson's Read Mix.

32 The distance to Whittier Landfill.

Table 6
Emissions Factors (g/mile) for On-Road Vehicles

Vehicle Type	VOC	CO	NO_x	CO_2	CH_4	N_2O	PM_{10}	$PM_{2.5}$	SO_2
Calendar Year 2022									
Employee	0.03	0.89	0.09	299	0.01	0.01	0.05	0.02	0.003
Pickup Truck	0.02	1.07	0.09	331	0.01	0.01	0.05	0.02	0.003
Delivery Truck	0.05	0.59	0.82	660	0.01	0.04	0.10	0.04	0.01
Haul Truck	0.06	0.22	2.30	973	0.003	0.15	0.17	0.09	0.01
Calendar Year 2023									
Employee	0.03	0.83	0.08	290	0.01	0.01	0.05	0.02	0.003
Pickup Truck	0.02	0.98	0.08	319	0.01	0.01	0.05	0.02	0.003
Delivery Truck	0.05	0.52	0.73	648	0.01	0.04	0.10	0.04	0.01
Haul Truck	0.01	0.08	1.46	928	0.001	0.15	0.15	0.07	0.01
Calendar Year 2024									
Employee	0.03	0.78	0.07	281	0.01	0.01	0.05	0.02	0.003
Pickup Truck	0.02	0.91	0.07	309	0.004	0.01	0.05	0.02	0.003
Delivery Truck	0.04	0.47	0.64	637	0.004	0.04	0.10	0.04	0.01
Haul Truck	0.01	0.08	1.46	919	0.001	0.14	0.15	0.07	0.01
Calendar Year 2025									
Employee	0.02	0.73	0.06	272	0.004	0.01	0.05	0.02	0.003
Pickup Truck	0.02	0.84	0.06	298	0.004	0.01	0.05	0.02	0.003
Delivery Truck	0.04	0.42	0.57	624	0.004	0.04	0.10	0.04	0.01
Haul Truck	0.01	0.08	1.45	909	0.001	0.14	0.15	0.07	0.01
Calendar Year 2026									
Employee	0.02	0.70	0.06	264	0.004	0.01	0.05	0.02	0.003
Pickup Truck	0.01	0.79	0.05	289	0.003	0.01	0.05	0.02	0.003
Delivery Truck	0.04	0.38	0.50	612	0.003	0.04	0.10	0.04	0.01
Haul Truck	0.01	0.08	1.44	901	0.0005	0.14	0.15	0.07	0.01

Source: CARB EMFAC Emissions Model.

Off-Road Equipment

Construction of the proposed Project would require the use of heavy-duty equipment, such as excavators, loaders, forklifts, and off-road haul trucks. This equipment would be used to load and unload material and otherwise sort and handle material. Composite emission factors from the OFFROAD emissions model were used. Emissions from construction activities were estimated based on the projected construction activity schedule, the number of vehicles/pieces of equipment, the types of equipment/type of fuel used, vehicle/equipment utilization rates, equipment horsepower, and the construction year. This data were based on the Inglewood Transit Connector: Construction Scenarios for the Environmental Impact Report

by Pacifica Services (dated June 27, 2020). Emissions from construction activities were also estimated based on load factor (throttle setting)[33] and usage factor.[34] For the daily emission estimates and short-term ambient concentration analysis (1-hour to 24-hour averaging periods), the usage factor of 100 percent was applied (i.e., full-time operation). For the long-term ambient concentration analyses and the health risk assessment, the usage factor of less than 100 percent was applied by equipment type, as not all of the equipment can be used every hour of the day and every day of the year due to safety issues and manpower constraints. That is, the short-term impacts are based on worst-case construction activity but the long-term impacts are based on average construction activity.

This information was applied to criteria pollutant emissions factors, in grams per horsepower-hour, primarily derived using the OFFROAD emissions model. **Equation 2** outlines how off-road construction equipment emissions were computed, and the emissions factors used in this assessment are summarized, by equipment type within **Table 7** through **Table 11: Emissions Factors (g/hp-hour) for Off-Road Equipment** for 2022 through 2026, respectively**.**

Equation 2

*Emission Rate (tons/year) = Emission Factor (gram/hp-hour) * size (hp) * hours of operation * Load Factor * usage factor * (453.59/2000 tons/gram)*

*Emission Rate (pounds/day) = Emission Factor (gram/hp-hour) * size (hp) * hours of operation * Load Factor * (1/453.59 pounds/gram)*

33 Load factor (or throttle setting) are the engine performance demands, as a percent of maximum power; based on values within OFFROAD and typically ranging from 30 to 80 percent depending on equipment type.

34 Activity level (or usage factor) are defined as the percent of operation for a piece of equipment over a given time.

Table 7
Emissions Factors (g/hp-hour) for Off-Road Equipment for 2022

Equipment	HP	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Impact Pile Driver	700	0.04	0.49	0.32	0.002	0.01	0.01	268
Crane	270	0.09	0.52	1.08	0.001	0.04	0.04	152
Backhoe	127	0.07	1.14	0.65	0.002	0.03	0.03	193
Loader	164	0.07	1.14	0.65	0.002	0.03	0.03	193
Auger Drill Rig	600	0.04	0.49	0.32	0.002	0.01	0.01	268
Air Compressor	150	0.03	0.87	0.35	0.001	0.01	0.01	158
Excavator	396	0.05	0.40	0.39	0.002	0.01	0.01	201
Bobcat	72.9	0.16	1.39	1.37	0.002	0.10	0.09	189
Generator	15	0.41	2.16	3.29	0.006	0.14	0.13	421
Drum Mixer	3.5	0.31	1.82	2.35	0.005	0.09	0.08	318
Drill Rig Truck	600	0.04	0.49	0.32	0.002	0.01	0.01	268
Concrete Saw	24	0.41	1.71	3.17	0.005	0.12	0.11	416
Compactor	80	0.11	1.29	1.17	0.002	0.07	0.06	198
Man Lift	45.9	0.45	2.85	3.40	0.007	0.13	0.12	466
Welder	23	0.05	0.96	0.90	0.002	0.01	0.01	181
Street Sweeper	240	0.27	1.28	2.00	0.004	0.09	0.08	256

Source: CARB OFFROAD Emissions Model.

Table 8
Emissions Factors (g/hp-hour) for Off-Road Equipment for 2023

Equipment	HP	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Impact Pile Driver	700	0.04	0.49	0.30	0.002	0.01	0.01	268
Crane	270	0.09	0.52	1.00	0.001	0.04	0.04	152
Backhoe	127	0.07	1.14	0.56	0.002	0.03	0.03	194
Loader	164	0.07	1.14	0.56	0.002	0.03	0.03	194
Auger Drill Rig	600	0.04	0.49	0.30	0.002	0.01	0.01	268
Air Compressor	150	0.03	0.88	0.29	0.001	0.01	0.01	160
Excavator	396	0.05	0.40	0.34	0.002	0.01	0.01	201
Bobcat	72.9	0.15	1.38	1.26	0.002	0.08	0.08	189
Generator	15	0.41	2.14	3.26	0.006	0.14	0.13	421
Drum Mixer	3.5	0.31	1.82	2.35	0.005	0.09	0.08	318
Drill Rig Truck	600	0.04	0.49	0.30	0.002	0.01	0.01	268
Concrete Saw	24	0.42	1.72	3.18	0.005	0.12	0.11	417
Compactor	80	0.10	1.28	1.09	0.002	0.06	0.05	198
Man Lift	45.9	0.45	2.85	3.40	0.007	0.13	0.12	466
Welder	23	0.05	0.96	0.89	0.002	0.01	0.01	181
Street Sweeper	240	0.27	1.28	1.99	0.004	0.09	0.08	256

Source: CARB OFFROAD Emissions Model.

Table 9
Emissions Factors (g/hp-hour) for Off-Road Equipment for 2024

Equipment	HP	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Impact Pile Driver	700	0.04	0.49	0.28	0.002	0.01	0.01	268
Crane	270	0.08	0.49	0.91	0.001	0.04	0.03	152
Backhoe	127	0.06	1.14	0.51	0.002	0.03	0.02	194
Loader	164	0.06	1.14	0.51	0.002	0.03	0.02	194
Auger Drill Rig	600	0.04	0.49	0.28	0.002	0.01	0.01	268
Air Compressor	150	0.03	0.89	0.26	0.001	0.01	0.01	161
Excavator	396	0.05	0.40	0.32	0.002	0.01	0.01	201
Bobcat	72.9	0.14	1.39	1.19	0.002	0.08	0.07	189
Generator	15	0.40	2.13	3.24	0.006	0.13	0.12	421
Drum Mixer	3.5	0.31	1.82	2.35	0.005	0.09	0.08	318
Drill Rig Truck	600	0.04	0.49	0.28	0.002	0.01	0.01	268
Concrete Saw	24	0.42	1.72	3.18	0.005	0.12	0.11	417
Compactor	80	0.10	1.28	1.03	0.002	0.05	0.05	198
Man Lift	45.9	0.45	2.85	3.40	0.007	0.13	0.12	466
Welder	23	0.05	0.96	0.89	0.002	0.01	0.01	181
Street Sweeper	240	0.26	1.27	1.98	0.004	0.08	0.08	256

Source: CARB OFFROAD Emissions Model.

Table 10
Emissions Factors (g/hp-hour) for Off-Road Equipment for 2025

Equipment	HP	ROG	CO	NO_X	SO_2	PM_10	$PM_{2.5}$	CO_2
Impact Pile Driver	700	0.04	0.48	0.21	0.002	0.01	0.01	266
Crane	270	0.08	0.44	0.80	0.001	0.03	0.03	152
Backhoe	127	0.06	1.14	0.44	0.002	0.02	0.02	194
Loader	164	0.06	1.14	0.44	0.002	0.02	0.02	194
Auger Drill Rig	600	0.04	0.48	0.21	0.002	0.01	0.01	266
Air Compressor	150	0.03	0.90	0.21	0.002	0.01	0.01	163
Excavator	396	0.04	0.40	0.27	0.002	0.01	0.01	201
Bobcat	72.9	0.13	1.37	1.07	0.002	0.06	0.06	189
Generator	15	0.40	2.12	3.22	0.006	0.13	0.12	421
Drum Mixer	3.5	0.31	1.82	2.34	0.005	0.09	0.08	318
Drill Rig Truck	600	0.04	0.48	0.21	0.002	0.01	0.01	266
Concrete Saw	24	0.42	1.73	3.20	0.005	0.12	0.11	420
Compactor	80	0.09	1.28	0.98	0.002	0.05	0.04	198
Man Lift	45.9	0.45	2.85	3.40	0.007	0.13	0.12	466
Welder	23	0.05	0.95	0.89	0.002	0.01	0.01	181
Street Sweeper	240	0.26	1.26	1.96	0.004	0.08	0.07	256

Source: CARB OFFROAD Emissions Model.

Table 11
Emissions Factors (g/hp-hour) for Off-Road Equipment for 2026

Equipment	HP	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Impact Pile Driver	700	0.04	0.48	0.21	0.002	0.01	0.01	267
Crane	270	0.07	0.43	0.72	0.001	0.03	0.03	152
Backhoe	127	0.06	1.14	0.40	0.002	0.02	0.02	194
Loader	164	0.06	1.14	0.40	0.002	0.02	0.02	194
Auger Drill Rig	600	0.04	0.48	0.21	0.002	0.01	0.01	267
Air Compressor	150	0.03	0.91	0.19	0.002	0.01	0.01	165
Excavator	396	0.04	0.403	0.26	0.002	0.01	0.01	201
Bobcat	72.9	0.12	1.37	0.98	0.002	0.06	0.05	189
Generator	15	0.40	2.12	3.20	0.006	0.13	0.12	421
Drum Mixer	3.5	0.31	1.82	2.34	0.005	0.09	0.08	318
Drill Rig Truck	600	0.04	0.48	0.21	0.002	0.01	0.01	267
Concrete Saw	24	0.42	1.73	3.19	0.005	0.12	0.11	419
Compactor	80	0.09	1.28	0.93	0.002	0.04	0.04	198
Man Lift	45.9	0.45	2.85	3.40	0.007	0.13	0.12	466
Welder	23	0.05	0.95	0.89	0.002	0.01	0.01	181
Street Sweeper	240	0.26	1.26	1.95	0.004	0.08	0.07	256

Source: CARB OFFROAD Emissions Model.

Fugitive Dust from Project Alignment Activities

Fugitive dust emissions from site preparation, grading equipment passes, soil movement, unloading/loading of materials, and other construction related activities is based on work performed by Midwest Research Institute (MRI).[35] Generally, the emission factor used is 0.11 tons PM_{10} per acre-month of activity. This emission factor is based on MRI's observation of the types, quantity, and duration of operations at eight construction sites (three in Las Vegas and five in California). The bulk of the operations observed were site preparation-related activities. The observed activity data were then combined with operation-specific emission factors provided in USEPA's AP-42 to produce emissions estimates.[36]

The construction emission factor is assumed to include the effects of typical control measures such as routine watering. A dust control effectiveness of 75 percent is assumed from these measures, which is based on the estimated control effectiveness of watering. The MRI also includes an emission factor for worst-case emissions of 0.42 tons PM_{10} per acre-month.[37] This emission factor is appropriate for large-scale construction operations, which involve substantial earthmoving operations. The ratio of $PM_{2.5}$ to PM_{10} was assumed to be 21 percent.

The MRI also includes an emission factor for typical conditions of 0.22-ton PM_{10} per acre-month without control measures. This emission factor is based on MRI's observation of the types, quantity, and duration of operations at eight construction sites (three in Las Vegas and five in California). The bulk of the operations observed were site preparation-related activities. The observed activity data were then combined with operation-specific emission factors provided in USEPA's AP-42 to produce emissions estimates.

The SCAQMD estimated that 25 percent of their construction projects under the jurisdiction of the District involve substantial earthmoving operations (worst case conditions) and applied recommended application of the larger emission factor of 0.42-ton PM_{10} per acre-month for those types of construction projects. For the remainder of the construction projects, the average emission factor of 0.22-ton PM_{10} per acre-month was recommended.

Therefore, given the larger size of the proposed Project, the 0.42 ton PM_{10} per acre-month emission factor was used along with the dust control effectiveness of 75 percent, which is based on the estimated control

35 Midwest Research Institute, Inventory of Agricultural Tilling, Unpaved Roads and Airstrips and Construction Sites, November 1974.

36 Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Section 13.2.3 Heavy Construction Operations, January, 1995, Accessed July 6, 2020 at: https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s02-3.pdf

37 Worst-case refers to construction sites with active large-scale earth moving operations.

effectiveness of watering, reducing vehicle speed on unpaved surface, and other measures.[38]

Mitigated Combustion Emission Factors for Off-road Equipment

Table 12: Emissions Factors for Off-Road Equipment by Engine Tier presents the mitigated emission factors for off-road construction equipment. The CO, NOx, and CO_2 emission factors for the natural gas sweepers would be 4.1, 1.2, and 342 g/hp-hour, respectively.

Table 12
Emissions Factors (g/hp-hour) for Off-Road Equipment by Engine Tier

Tier	Low HP	High HP	CO	NO_X	PM_{10}	$PM_{2.5}$	ROG
Tier 3	25	49	4.1	4.63	0.28	0.28	0.29
	50	74	3.7	2.74	0.192	0.192	0.12
	75	119	3.7	2.74	0.192	0.192	0.12
	120	174	3.7	2.32	0.112	0.112	0.12
	175	299	2.6	2.32	0.088	0.088	0.12
	300	599	2.6	2.32	0.088	0.088	0.12
	600	750	2.6	2.32	0.088	0.088	0.12
	751	2000	2.6	2.32	0.088	0.088	0.12
Tier 4 Final	25	49	4.1	2.75	0.008	0.008	0.12
	50	74	3.7	2.74	0.008	0.008	0.12
	75	119	3.7	0.26	0.008	0.008	0.06
	120	174	3.7	0.26	0.008	0.008	0.06
	175	299	2.2	0.26	0.008	0.008	0.06
	300	599	2.2	0.26	0.008	0.008	0.06
	600	750	2.2	0.26	0.008	0.008	0.06
	751	2000	2.6	2.24	0.016	0.016	0.06

Source: CARB OFFROAD Emissions Model.

9.0 AMBIENT AIR CONCENTRATION IMPACTS

A dispersion modeling analysis was also conducted to assess Project-related impacts to air concentrations of CO, NO_2, PM_{10}, $PM_{2.5}$, and SO_2. Concentrations were compared to SCAQMD's significance thresholds and California/federal ambient air quality standards. The proposed Project would result in a significant construction air quality impact if concentration impacts from the proposed Project exceed the significance

38 SCAQMD Air Quality Management Handbook Mitigation Measures Fugitive Dust, Accessed July 6, 2020 at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

concentration thresholds set forth in **Table 2: Ambient Air Quality Standards for Criteria Pollutants (see Attachment C: Supplemental Health Impact Information** for further information.[39]

Table 15: Estimated Unmitigated Concentration Impacts from Construction Activities provides the unmitigated proposed Project air concentrations from construction activities for nearby receptors.

Table 16: Estimated Mitigated Concentration Impacts from Construction Activities provides the mitigated proposed Project air concentrations from construction activities for nearby receptors.

Ambient Air Quality Concentrations Due To Construction Activities

Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions provides detailed information about the location of air quality receptors used in the dispersion modeling analysis of criteria pollutants (NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$). There are a total of 1,954 air quality receptors.[40] These

39 The recent Sierra Club v. County of Fresno California Supreme Court case held, in part, that the Friant Ranch Specific Plan EIR (Friant Ranch EIR) was deficient in the informational discussion of air quality impacts as they connect to adverse human health effects. The Supreme Court concluded that an EIR's discussion must "make [ ] a reasonable effort to substantively connect a project's air quality impacts to likely health consequences."
For the proposed Project, daily construction emissions of NOx (a precursor to the formation of ozone) would exceed significance thresholds resulting in a significant and unavoidable impact even with mitigation. The proposed Project would contribute to regional ozone contributions but determining potential health impacts caused directly by the construction activities is not feasible.
According to the San Joaquin Valley Air Pollution Control District, it is not possible to determine ozone concentrations or make a direct correlation to human health impacts, because project-focused modeling cannot feasibly predict ozone formation and resulting regional ozone concentrations. SCAQMD has indicated that applicable methods do exist but are not applicable or feasible in most cases. The Court did not rule on whether health impacts of the named pollutants were scientifically feasible to predict, but it did state that: "if it is not scientifically possible to do more than has already been done to connect air quality effects with potential human health impacts, the Friant Ranch EIR itself must explain why, in a manner reasonably calculated to inform the public of the scope of what is and is not yet known about the project's impacts."
The current modeling tools are not equipped to provide meaningful analysis of the correlation between a project's criteria pollutant or pollutant precursor emissions and specific health impacts. Air dispersion modeling is available, such as the American Meteorological Society/ Environmental Protection Agency Regulatory Model (AERMOD), but these models cannot accurately estimate dispersion of ozone. Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, atmospheric stability, and wind patterns. Because of the dynamic nature of ozone formation and the complexities of predicting ground-level ozone concentrations in relation to ambient standards, air districts instead generally develop mass emissions thresholds for NOx that are used to make significance determinations.
In summary, modeling of the proposed Project's ozone emissions is not feasible and would not provide meaningful information given the number of variables that affect ozone formation (e.g., location of activity and weather on that day that results in conversion of precursor emissions into ozone). However, as shown in **Section 9**, the resultant air concentrations for the proposed Project would be below the significance thresholds and thus, the air quality health impacts due to the construction criteria air pollutant emissions would be expected to be less than significant. Nevertheless, the health impacts due to diesel particulate emissions would be potentially above the significance thresholds and would potentially be significant. Lastly, daily operational emissions would potentially exceed the SCAQMD significance thresholds during an NFL event. However, once operational in 2026, the proposed Project will increase transit ridership throughout the region, reduce vehicle miles traveled and criteria air pollutants, GHG emissions, and improve air quality throughout the South Coast Air Basin (see **Section 12**). Therefore, short-term construction-related and operational–related air quality impacts would occur but long-term operational-related air quality benefits would follow.

40 There are a total of 669 air quality criteria pollutant receptors plus the 1,285 sensitive receptors.

receptors are designed to represent off-site locations where a person has access and can be situated for an hour or longer at a time (which is different from the HRA receptors which are designed to represent specific residences, schools, daycares, off-site worker locations). The ambient air quality standards analysis results are presented for both the Morning/Evening and Morning/Night construction scenarios.

Morning/Evening Construction Activities

As shown in **Table 13: Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario**, for the air quality receptors during Project construction, the incremental 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be a maximum of 0.16 ppm (see **Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions**), which is below the State threshold of 0.18 ppm. The maximum incremental 98th percentile 1-hour NO_2 impacts to a sensitive receptor, including background concentrations, would be 0.12 ppm, which is potentially above the federal threshold of 0.10 ppm. The maximum Project construction incremental annual NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.01 ppm, which is below the thresholds of 0.03 ppm (State) and below the threshold of 0.0534 ppm (federal). Therefore, unmitigated construction activities would potentially exceed the 1-hour and would result in a *potentially significant air quality impact of 1-hour NO_2 on nearby receptors due to construction activities* but would not exceed the annual NO_2 thresholds and would result in a *less than significant air quality impact of annual NO_2 on nearby receptors due to construction activities.*

As shown in **Table 13: Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario**, for the air quality receptors during Project construction, the maximum incremental 24-hour and annual PM_{10} impacts to a sensitive receptor would be 3.02 µg/m^3 and 0.23 µg/m^3, respectively; impacts would be below the 24-hour PM_{10} threshold of 10.4 µg/m^3 and below the annual PM_{10} threshold of 1.0 µg/m^3. The Project construction maximum incremental 24-hour $PM_{2.5}$ impacts to a sensitive receptor would be 2.78 µg/m^3, which would be below the 24-hour $PM_{2.5}$ threshold of 10.4 µg/m^3. Therefore, unmitigated construction activities would result in a *less than significant air quality impact of PM_{10} and $PM_{2.5}$ on nearby receptors due to construction activities*.

As shown in **Table 14: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario**, for the air quality receptors during Project construction, the maximum incremental 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.14 ppm, which is below the State threshold of 0.18 ppm. The maximum incremental 98th percentile 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.10 ppm, which is within the federal threshold of 0.10 ppm. The maximum Project construction incremental annual NO_2 impacts including background

concentrations would be 0.01 ppm, which is below the thresholds of 0.03 ppm (state) and below the threshold of 0.0534 ppm (federal). Therefore, mitigated construction activities would not exceed the 1-hour and annual NO_2 thresholds and would be a *less than significant air quality impact of NO_2 on nearby receptors due to construction activities*.

As shown in **Table 14: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario**, for the air quality receptors during Project construction, the maximum incremental 24-hour and annual PM_{10} impacts would be 0.65 µg/m^3 and 0.06 µg/m^3, respectively. Impacts would be below the 24-hour PM_{10} threshold of 10.4 µg/m^3 and the annual PM_{10} threshold of 1.0 µg/m^3. The Project construction maximum incremental 24-hour $PM_{2.5}$ impacts would be 0.65 µg/m^3, which would be below the 24-hour $PM_{2.5}$ threshold of 10.4 µg/m^3. Therefore, mitigated construction activities would result in a *less than significant air quality impact of PM_{10} and $PM_{2.5}$ on nearby receptors due to construction activities*.

Additionally, as shown in **Table 14: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario**, for the air quality receptors during Project construction, the maximum incremental SO_2 and CO impacts including background concentrations and Adjusted Baseline would be well below the significance thresholds and would be a *less than significant air quality impact of SO_2 and CO on all nearby receptors due to construction activities*.

Table 13
Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario
(Approximately 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM)

Criteria	Maximum 1-Hour NO_2 (ppm)	98% 1-Hour NO_2 (ppm)	CAAQS Annual NO_2 (ppm)	NAAQS Annual NO_2 (ppm)	24-Hour PM_{10} ($\mu g/m^3$)	Annual PM_{10} ($\mu g/m^3$)	24-Hour $PM_{2.5}$ ($\mu g/m^3$)	CAAQS 1-Hour SO_2 (ppm)	NAAQS 1-Hour SO_2 (ppm)	24-Hour SO_2 (ppm)	1-Hour CO (ppm)	8-Hour CO (ppm)
Off-site Receptor (Project Increment)	0.06	0.05	<0.01	<0.01	3.02	0.23	2.78	<0.01	<0.01	<0.01	0.29	0.03
Background Concentration	0.07	0.05	0.01	0.01				0.01	0.01	<0.01	2.10	1.60
Adjusted Baseline Concentrations	0.03	0.02	<0.01	<0.01				<0.01	<0.01	<0.01	1.80	0.80
Total Concentration	**0.16**	**0.12**	**0.01**	**0.01**	**3.02**	**0.23**	**2.78**	**0.01**	**0.01**	**<0.01**	**4.19**	**2.43**
Significance Threshold	0.18	0.10	0.03	0.0534	10.4	1.00	10.4	0.25	0.075	0.04	20.0	9.00
Potentially Significant (Yes or No)?	No	**Yes**	No	No	No	No	No	No	No	No	No	No

Source: RCH Group, 2020

Total concentrations reflect rounding of values (Project Increment plus background concentration plus Adjusted Baseline). Per SCAQMD guidance, PM_{10} and $PM_{2.5}$ impacts do not include background concentrations.

Table 14
Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Evening Scenario
(Approximately 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM)

Criteria	Maximum 1-Hour NO_2 (ppm)	98% 1-Hour NO_2 (ppm)	CAAQS Annual NO_2 (ppm)	NAAQS Annual NO_2 (ppm)	24-Hour PM_{10} ($\mu g/m^3$)	Annual PM_{10} ($\mu g/m^3$)	24-Hour $PM_{2.5}$ ($\mu g/m^3$)	CAAQS 1-Hour SO_2 (ppm)	NAAQS 1-Hour SO_2 (ppm)	24-Hour SO_2 (ppm)	1-Hour CO (ppm)	8-Hour CO (ppm)
Off-site Receptor (Project Increment)	0.04	0.03	<0.01	<0.01	0.65	0.06	0.65	<0.01	<0.01	<0.01	0.68	0.08
Background Concentration	0.07	0.05	0.01	0.01				0.01	0.01	<0.01	2.10	1.60
Adjusted Baseline Concentrations	0.03	0.02	<0.01	<0.01				<0.01	<0.01	<0.01	1.80	0.80
Total Concentration	**0.14**	**0.10**	**0.01**	**0.01**	**0.65**	**0.06**	**0.65**	**0.01**	**0.01**	**<0.01**	**4.58**	**2.48**
Significance Threshold	0.18	0.10	0.03	0.0534	10.4	1.00	10.4	0.25	0.075	0.04	20.0	9.00
Potentially Significant (Yes or No)?	No	No	No	No	No	No	No	No	No	No	No	No

Source: RCH Group, 2020

Total concentrations reflect rounding of values (Project Increment plus background concentration plus Adjusted Baseline). Per SCAQMD guidance, PM_{10} and $PM_{2.5}$ impacts do not include background concentrations.

As previously noted, construction activities are expected to commence in the end of 2021 and be completed in mid-2026. Construction activity would primarily occur over a 24 hour per day schedule with three shifts as follows:

- a morning shift from approximately 7:00 AM to 3:00 PM (Morning Shift), and
- an evening shift from approximately 3:00 PM to 11:00 PM (Evening Shift), or
- a night shift from approximately 11:00 PM to 7:00 AM (Night Shift).

Combinations of these shifts would be referred to "Morning/Night" or "Night/Morning."

Morning/Night Construction Activities

As shown in **Table 15: Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Night Scenario**, for the air quality receptors, the maximum Project construction incremental 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.16 ppm (see **Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions**), which is below the State threshold of 0.18 ppm. The maximum incremental 98th percentile 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.12 ppm, which is potentially above the federal threshold of 0.10 ppm. The maximum Project construction incremental annual NO_2 impacts including background concentrations and Adjusted Baseline would be 0.01 ppm, which is below the thresholds of 0.03 ppm (State) and 0.0534 ppm (federal). Therefore, unmitigated construction activities would potentially exceed the 1-hour and would result in a *potentially significant air quality impact of 1-hour NO_2 on nearby receptors due to construction activities* but would not exceed the annual NO_2 thresholds and would result in a *less than significant air quality impact of annual NO_2 on nearby receptors due to construction activities.*

As shown in **Table 15: Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Night Scenario**, for the air quality receptors, the Project construction maximum incremental 24-hour and annual PM_{10} impacts to a sensitive receptor would be 2.79 µg/m^3 and 0.22 µg/m^3, respectively. Impacts would be below the 24-hour PM_{10} threshold of 10.4 µg/m^3 and below the annual PM_{10} threshold of 1.0 µg/m^3. The Project construction maximum incremental 24-hour $PM_{2.5}$ impacts would be 2.56 µg/m^3, which would be below the 24-hour $PM_{2.5}$ threshold of 10.4 µg/m^3. Therefore, unmitigated construction activities would result in a *less than significant air quality impact of PM_{10} and $PM_{2.5}$ on nearby receptors due to construction activities*.

As shown in **Table 16: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Night Scenario**, for the air quality receptors, the maximum Project construction incremental 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.13 ppm, which is below the State threshold of 0.18 ppm. The maximum incremental 98th

percentile 1-hour NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.10 ppm, which is within the federal threshold of 0.10 ppm. The maximum Project construction incremental annual NO_2 impacts to a sensitive receptor, including background concentrations and Adjusted Baseline, would be 0.01 ppm, which is below the thresholds of 0.03 ppm (State) and 0.0534 ppm (federal). Therefore, mitigated construction activities would not the 1-hour and annual NO_2 thresholds and would be a *less than significant air quality impact of NO_2 on nearby receptors due to construction activities*.

As shown in **Table 16: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Night Scenario**, for the air quality receptors, the Project construction maximum incremental 24-hour and annual PM_{10} impacts to a sensitive receptor would be 0.62 µg/m^3 and 0.06 µg/m^3, respectively. Impacts would be below the 24-hour PM_{10} threshold of 10.4 µg/m^3 and the annual PM_{10} threshold of 1.0 µg/m^3. The Project construction maximum incremental 24-hour $PM_{2.5}$ impacts would be 0.60 µg/m^3, which would be below the 24-hour $PM_{2.5}$ threshold of 10.4 µg/m^3. Therefore, mitigated construction activities would result in a *less than significant air quality impact of PM_{10} and $PM_{2.5}$ on nearby receptors due to construction activities*.

Additionally, as shown in **Table 16: Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Night Scenario**, for the air quality receptors, the proposed Project construction incremental SO_2 and CO impacts, including background concentrations and Adjusted Baseline, would be well below the significance thresholds and would be a *less than significant air quality impact of SO_2 and CO on all nearby receptors due to construction activities*.

Table 15
Estimated Unmitigated Concentration Impacts from Construction Activities for Morning/Night Scenario
(Approximately 7:00 AM to 3:00 PM and 11:00 PM to 7:00 AM)

Criteria	Maximum 1-Hour NO_2 (ppm)	98% 1-Hour NO_2 (ppm)	CAAQS Annual NO_2 (ppm)	NAAQS Annual NO_2 (ppm)	24-Hour PM_{10} ($\mu g/m^3$)	Annual PM_{10} ($\mu g/m^3$)	24-Hour $PM_{2.5}$ ($\mu g/m^3$)	CAAQS 1-Hour SO_2 (ppm)	NAAQS 1-Hour SO_2 (ppm)	24-Hour SO_2 (ppm)	1-Hour CO (ppm)	8-Hour CO (ppm)
Off-site Receptor (Project Increment)	0.06	0.05	<0.01	<0.01	2.79	0.22	2.56	<0.01	<0.01	<0.01	0.29	0.03
Background Concentration	0.07	0.05	0.01	0.01				0.01	0.01	<0.01	2.10	1.60
Adjusted Baseline Concentrations	0.03	0.02	<0.01	<0.01				<0.01	<0.01	<0.01	1.80	0.80
Total Concentration	**0.16**	**0.12**	**0.01**	**0.01**	**2.79**	**0.22**	**2.56**	**0.02**	**0.02**	**<0.01**	**4.19**	**2.43**
Significance Threshold	0.18	0.10	0.03	0.0534	10.4	1.00	10.4	0.25	0.075	0.04	20.0	9.00
Potentially Significant (Yes or No)?	No	**Yes**	No	No	No	No	No	No	No	No	No	No

Source: RCH Group, 2020
Total concentrations reflect rounding of values (Project Increment plus background concentration plus Adjusted Baseline). Per SCAQMD guidance, PM_{10} and $PM_{2.5}$ impacts do not include background concentrations.

Table 16
Estimated Mitigated Concentration Impacts from Construction Activities for Morning/Night Scenario
(Approximately 7:00 AM to 3:00 PM and 11:00 PM to 7:00 AM)

Criteria	Maximum 1-Hour NO_2 (ppm)	98% 1-Hour NO_2 (ppm)	CAAQS Annual NO_2 (ppm)	NAAQS Annual NO_2 (ppm)	24-Hour PM_{10} ($\mu g/m^3$)	Annual PM_{10} ($\mu g/m^3$)	24-Hour $PM_{2.5}$ ($\mu g/m^3$)	CAAQS 1-Hour SO_2 (ppm)	NAAQS 1-Hour SO_2 (ppm)	24-Hour SO_2 (ppm)	1-Hour CO (ppm)	8-Hour CO (ppm)
Off-site Receptor (Project Increment)	0.04	0.03	<0.01	<0.01	0.62	0.06	0.60	<0.01	<0.01	<0.01	0.67	0.07
Background Concentration	0.07	0.05	0.01	0.01				0.01	0.01	<0.01	2.10	1.60
Adjusted Baseline Concentrations	0.03	0.02	<0.01	<0.01				<0.01	<0.01	<0.01	1.80	0.80
Total Concentration	**0.13**	**0.10**	**0.01**	**0.01**	**0.62**	**0.06**	**0.60**	**0.02**	**0.02**	**<0.01**	**4.57**	**2.47**
Significance Threshold	0.18	0.10	0.03	0.0534	10.4	1.00	10.4	0.25	0.075	0.04	20.0	9.00
Potentially Significant (Yes or No)?	No	No	No	No	No	No	No	No	No	No	No	No

Source: RCH Group, 2020
Total concentrations reflect rounding of values (Project Increment plus background concentration plus Adjusted Baseline). Per SCAQMD guidance, PM_{10} and $PM_{2.5}$ impacts do not include background concentrations.

Summary of Air Quality Concentration Assessment Results

The following concluding statements can be made about the ambient air quality analysis results:

- The maximum concentrations of the 1-hour NO_2 impacts would not exceed the significance threshold and would be a *less than significant impact for all off-site receptors due to construction activities with mitigation*.
- The maximum concentrations of the annual NO_2 impacts would not exceed the significance threshold for the CAAQS and the NAAQS and would be a *less than significant impact for all off-site receptors due to construction activities*.
- The maximum concentrations of 24-hour and annual PM_{10} and 24-hour $PM_{2.5}$ would not exceed the significance threshold and would be *less than significant impact for all off-site receptors due to construction activities with mitigation*.
- The maximum concentrations of SO_2 and CO including background concentrations would be well below the significance thresholds and would be a *less than significant air quality impact of SO_2 and CO on all nearby receptors due to construction activities*.
- Generally (it depends on receptor location and averaging period), the concentrations due to construction activities would be potentially greater for the morning/evening scenario compared to the morning/night scenario. This may have something to do with the morning/evening scenario having a greater intensity than the morning/night especially during overnight hours which tend to exhibit calm, stagnant air flow conditions and thus, higher pollutant concentrations.

10.0 HEALTH RISK ASSESSMENT

The HRA was conducted following methodologies in OEHHA's Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments[41] and SCAQMD's Risk Assessment Procedures for Rule 1401, 1401.1 and 212.[42] This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for noncancer health effects.

Recent OEHHA's revisions to its Guidance Manual were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in the HRA. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without

41 Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015, Accessed July 6, 2020 at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

42 South Coast Air Quality Management District, Risk Assessment Procedures for Rule 1401, 1401.1 and 212, September 1, 2017, Accessed July 6, 2020 at: http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12.

distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into an HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the Guidance Manual revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the Guidance Manual, this assumption is lessened to 30 years.

Attachment B: Health Risk Assessment Methodology and Assumptions provides additional methodologies and assumptions used within the health risk assessment. **Attachment C: Supplemental Health Impact Information** provides additional information on health impacts.

Health Impacts

The proposed Project would constitute a new emission source of DPM due to its construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health impact. Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to air toxic concentrations over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology and a 30-year exposure duration. The maximally exposed individual (MEI) represents the worst–case risk estimate, based on a theoretical person exposed for a period of 30 years at the highest concentration. This is a highly conservative assumption since most people do not remain in place all day and on average residents change residences every 11 to 12 years and do not stay in the same place of work for 25 years. In addition, this assumes that individuals are experiencing outdoor concentrations for the entire exposure period (even when indoors). A school child exposure duration is between ages 2 and 16 years old, which again, is conservative because the elementary, middle, and high school are not often located at the same location.

This HRA analyzes the incremental cancer risks to sensitive receptors in the vicinity of the proposed Project, using emission rates (in pounds per hour) derived from CARB's OFFROAD emission model. A further description of the sensitive receptors included in the dispersion modeling analysis and HRA is provided in **Attachment A: Air Quality Dispersion Modeling Methodology and Assumptions**.

Notably, peak daily emission estimates were used to estimate short-term air concentrations (1-hour, 8-hour, and 24-hour) while annual emission estimates were used to estimate annual air concentrations. DPM (reported as exhaust emissions of $PM_{2.5}$) and other air toxics emission rates were utilized along with derived concentrations from USEPA's AERMOD atmospheric dispersion model (using a unit emission rate of 1) to calculate air concentrations at receptors in the Project vicinity. This HRA is intended to provide a

worst–case estimate of the increased exposure by employing a standard emission estimation program, an accepted pollutant dispersion model, approved toxicity factors, and conservative exposure parameters.

In accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,* this HRA was accomplished by applying the highest estimated concentrations of specific air toxics at the receptors analyzed to the established cancer potency factors and acceptable reference concentrations for noncancer health effects. Increased cancer risks were calculated using the modeled concentrations and OEHHA-recommended methodologies for both a child exposure (3rd trimester through two years of age and ages two through 16 years) and adult exposure (16 to 30 years). The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as the fraction of time at home (100 percent for child and 73 percent for adult), and an exposure duration of 30 years, to the concentration exposures; over a 70-year lifetime. As a conservative assumption, children are assumed to attend a daycare or school in close proximity to their home and no discount should be taken for time spent outside of the area (i.e., 100 percent fraction of time) affected by the Project's emissions. For worker exposures, it is assumed that the working age begins at 16 years, and that exposures to Project emissions occur during the work shift which is typically up to eight hours per day during workdays. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants.

Per Education Code Section 17213 (School Site Selection And Approval Guide), a school shall only be located where, "the health risks from the facilities or other pollution sources do not and will not constitute an actual or potential endangerment of public health to persons who would attend or be employed at the school." Proposed projects located within ¼ mile of a school that involve the construction or alteration of a facility that might reasonably be anticipated to emit hazardous air emissions, or the handling of an extremely hazardous substance or mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified in subdivision (j) of HSC Section §25532, and that may impose a health or safety hazard to persons who would attend or would be employed at the school, must meet all requirements per CEQA Guidelines §15186 (b)(1)(2). Therefore, the HRA included nearby schools as sensitive receptors. **Section 7.0** of this document describes recommendations (such as Indoor air filtration systems with MERV 13 or higher and **MM AQ-1** through **MM AQ-11**) to reduce the health impacts at certain schools/daycare centers.

These conservative methodologies overestimate both noncarcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. Therefore, for carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the HRA methodology. The extrapolation of toxicity data in animals to humans, the estimation of concentration prediction methods within dispersion models; and the variability

in lifestyles, fitness and other confounding factors of the human population also contribute to the overestimation of health impacts. Therefore, the results of this HRA, although conducted in accordance with all regulatory agency protocols, are highly overstated.

SCAQMD currently does not require the evaluation of long-term cancer risk or chronic health impacts for a short-term project.[43] The proposed Project's construction activities would occur over a six-year period (2022 into 2026). The relatively short duration when compared to the 30-year exposure duration would limit exposures to off-site receptors. Secondly, exhaust emissions associated with the construction activities would not exceed the air concentrations significance thresholds (see **Section 9**) and thus, it is anticipated that construction emissions would not pose a threat to health impacts at nearby receptors.

The SCAQMD thresholds of significance applied to assess project-level health impacts are the exposure of persons to substantial levels of air toxics resulting in (a) a cancer risk level greater than 10 per one million persons or (b) a noncancerous risk (chronic or acute) hazard index greater than 1 or (c) a cancer burden of greater than 0.5 excess cancer cases.[44] For this threshold, sensitive receptors include residential uses, schools, daycare centers, nursing homes, medical centers, and off-site workers. A total of 1,285 sensitive receptors were analyzed.

Construction Activities

Morning/Evening Construction Activities

Table 17: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Evening Scenario provides the proposed Project's unmitigated health impacts from construction activities for existing residences, schools, daycares, and off-site workers receptors. A large majority of the health impacts are due to off-road construction equipment operating within the Project alignment with a minimal contribution from off-site construction truck travel along nearby roadways.

Table 18: Estimated Mitigated Health Impacts from Construction Activities for Morning/Evening Scenario provides the mitigated proposed Project health impacts from construction activities for existing residences, schools, daycares, and off-site workers receptors. A large majority of the health impacts are due to off-road construction equipment operating within the Project alignment with a minimal contribution from off-site construction truck travel along nearby roadways.

43 SCAQMD is currently reviewing and developing guidance for the health risk assessment of construction activities.
44 Cancer burden is the total cancer risk for all receptors divided by the estimated population within the modeling domain.

Table 17
Estimated Unmitigated Health Impacts from Construction Activities for Morning/Evening Scenario (Approximately 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM)

Criteria	Cancer Risk	Chronic Impact
Existing Residence	27.6	0.02
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	**Yes**	No
Off-site School/Daycare	2.20	0.02
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site Worker	0.76	0.03
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No

*Note: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

Table 18
Estimated Mitigated Health Impacts from Construction Activities for Morning/Evening Scenario (Approximately 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM)

Criteria	Cancer Risk	Chronic Impact
Existing Residence	7.63	<0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site School/Daycare	0.60	0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site Worker	0.20	0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No

*NOTES: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

Health Impacts at Existing Residences Due To Construction Activities

As shown in **Table 17: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for a residential receptor would be 27.6 per one million persons. The maximum cancer risks

would occur at a residential receptor (also known as the maximum exposed individual or MEI). Thus, the cancer risk for residential receptors due to construction activities would be potentially above the SCAQMD threshold of 10 per one million persons and would be *potentially significant for residential receptors due to construction activities*. The cancer burden due to construction activities would be 0.03 and below the SCAQMD threshold of 0.5 excess cancer cases and would therefore be *less than significant for all residential receptors due to construction activities*.

The unmitigated chronic health impact would be 0.02, based on a proposed Project-related maximum annual diesel concentration of 0.08 $\mu g/m^3$ (per dispersion modeling analysis) or 0.08 $\mu g/m^3$/5.0 μ g/m^3, which is 0.02. The chronic health impact due to construction activities would be below the Project-level threshold of 1 and would therefore be *less than significant for all residential receptors due to construction activities*.

As shown in **Table 18: Estimated Mitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions (see **Section 7**) for a residential receptor would be 7.6 per one million persons. The maximum cancer risks would occur at a residential receptor. Thus, the cancer risk for residential receptors due to construction activities would be *less than significant for all residential receptors due to construction activities*. The cancer burden due to construction activities would be 0.01 and below the SCAQMD threshold of 0.5 excess cancer cases and would therefore be *less than significant for all residential receptors due to construction activities*.

The mitigated chronic health impact would be less than 0.01, based on a proposed Project-related maximum annual diesel concentration of 0.02 $\mu g/m^3$ (per dispersion modeling analysis) or 0.02 $\mu g/m^3$/5.0 μ g/m^3, which is 0.01. The chronic health impact due to construction activities would be below the Project-level threshold of 1 and would therefore be *less than significant for all residential receptors due to construction activities*.

Health Impacts at Off-site School/Daycare Due To Construction Activities

As shown in **Table 17: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for a school/daycare receptor would be 2.2 per one million persons. Thus, the cancer risk for school/daycare receptors due to construction activities would be potentially above the SCAQMD threshold of 10 per one million persons and would be *less than significant for all off-site school/daycare receptors due to construction activities*.

The maximum unmitigated chronic health impact for an off-site school/daycare receptors would be 0.02 Thus, the chronic health impact due to construction activities for all off-site school/daycare receptors would be below the Project-level threshold of 1 and the chronic health impact would be *less than significant for all off-site school/daycare receptors due to construction activities*.

As shown in **Table 18: Estimated Mitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions (see **Section 7**) for a school/daycare receptor would be 0.6 per one million persons (using **Mitigation Measures AQ-1 through AQ-12**).[45] In addition to the identified off-road equipment mitigation measures, additional measures for ventilation systems at certain schools and daycare facilities is provided to assist in maintaining adequate air quality. Thus, the cancer risk for school/daycare receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all school/daycare receptors due to construction activities*.

The maximum mitigated chronic health impact for a school/daycare receptor would be 0.01. Thus, the chronic health impact due to construction activities for all school/daycare receptors would be below the Project-level threshold of 1 and the chronic health impact would be *less than significant for all school/daycare receptors due to construction activities*.

Health Impacts at Off-site Workers Due To Construction Activities

As shown in **Table 17: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for an off-site worker receptor (such as office buildings, retail centers, hotels, hospitals) would be 0.8 per one million persons. Thus, the cancer risk for off-site worker receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all off-site worker receptors due to construction activities*.

The maximum unmitigated chronic health impact modeled to occur at an off-site worker receptor would be 0.03. Thus, the chronic health impact due to construction activities at all off-site worker receptors would be below the Project-level threshold of 1 and would be *less than significant for all off-site worker receptors due to construction activities*.

As shown **in Table 18: Estimated Mitigated Health Impacts from Construction Activities for Morning/Evening Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions (see **Section 7**) for an off-site worker receptor would be 0.2 per one million persons. Thus, the

45 Primarily due to construction activities during year 3 and 4 associated with Phase 2 and 3.

cancer risk for off-site worker receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all off-site worker receptors due to construction activities*.

The maximum mitigated chronic health impact modeled to occur at an off-site worker receptor would be 0.01. Thus, the chronic health impact due to construction activities at all off-site worker receptors would be below the Project-level threshold of 1 and would be *less than significant for all off-site worker receptors due to construction activities*.

Morning/Night Construction Activities

Table 19: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Night Scenario provides the proposed Project's unmitigated health impacts from construction activities for existing residences, schools, daycares, and off-site workers receptors. A large majority of the health impacts are due to off-road construction equipment operating within the Project alignment with a minimal contribution from off-site construction truck travel along nearby roadways.

Table 20: Estimated Mitigated Health Impacts from Construction Activities for Morning/Night Scenario provides the mitigated proposed Project health impacts (see **Section 7**) from construction activities for existing residences, schools, daycares, and off-site workers receptors. A large majority of the health impacts are due to off-road construction equipment operating within the Project alignment with a minimal contribution from off-site construction truck travel along nearby roadways.

Health Impacts at Existing Residences Due To Construction Activities

As shown in **Table 19: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for a residential receptor would be 33.8 per one million persons. Thus, the cancer risk for residential receptors due to construction activities would be potentially above the SCAQMD threshold of 10 per one million persons and would be *potentially significant for residential receptors due to construction activities*. The cancer burden due to construction activities would be 0.03 and below the SCAQMD threshold of 0.5 excess cancer cases and would therefore be *less than significant for all residential receptors due to construction activities*.

The unmitigated chronic health impact would be 0.02, based on a proposed Project-related maximum annual diesel concentration of 0.10 $\mu g/m^3$ (per dispersion modeling analysis) or 0.10 $\mu g/m^3$/5.0 μ g/m^3, which is 0.02. The chronic health impact due to construction activities would be below the Project-level threshold of 1 and would therefore be *less than significant for all residential receptors due to construction activities*.

Table 19
Estimated Unmitigated Health Impacts from Construction Activities for Morning/Night Scenario (Approximately 7:00 AM to 3:00 PM and 11:00 PM to 7:00 AM)

Criteria	Cancer Risk	Chronic Impact
Existing Residence	**33.8**	0.02
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	**Yes**	No
Off-site School/Daycare	2.45	0.02
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site Worker	0.64	0.02
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No

*Note: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

Table 20
Estimated Mitigated Health Impacts from Construction Activities for Morning/Night Scenario (Approximately 7:00 AM to 3:00 PM and 11:00 PM to 7:00 AM)

Criteria	Cancer Risk	Chronic Impact
Existing Residence	9.43	0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site School/Daycare	0.67	0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No
Off-site Worker	0.18	0.01
Significance Threshold	10	1.0
Potentially Significant (Yes or No)?	No	No

*Note: Values in **bold** are in excess of applicable standard.*
Source: RCH Group, 2020

As shown in **Table 20: Estimated Mitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions for a residential receptor would be 9.4 per one million persons. Thus, the cancer risk for residential receptors due to construction activities would be *less than significant for all residential receptors due to construction activities*. The cancer burden due to construction activities would be 0.01 and below the SCAQMD threshold of 0.5 excess cancer cases and would therefore be *less than significant for all residential receptors due to construction activities*.

The mitigated chronic health impact would be 0.01, based on a proposed Project-related maximum annual diesel concentration of 0.03 µg/m^3 (per dispersion modeling analysis) or 0.03 µg/m^3/5.0 µ g/m^3, which is 0.01. The chronic health impact due to construction activities would be below the Project-level threshold of 1 and would therefore be *less than significant for all residential receptors due to construction activities*.

Health Impacts at Off-site School/Daycare Due To Construction Activities

As shown in **Table 19: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for a school/daycare receptor would be 2.5 per one million persons. Thus, the cancer risk for school/daycare receptors due to construction activities would be potentially above the SCAQMD threshold of 10 per one million persons and would be *less than significant for all off-site school/daycare receptors due to construction activities*.

The maximum unmitigated chronic health impact for an off-site school/daycare receptors would be 0.01. Thus, the chronic health impact due to construction activities for all off-site school/daycare receptors would be below the Project-level threshold of 1 and the chronic health impact would be *less than significant for all off-site school/daycare receptors due to construction activities*.

As shown in **Table 20: Estimated Mitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions (see **Section 7**) for a school/daycare receptor would be 0.7 per one million persons (using **Mitigation Measures AQ-1 through AQ-13**).[46] In addition to the identified off-road equipment mitigation measures, additional measures for ventilation systems at certain schools and daycare facilities is provided to assist in maintaining adequate air quality. Thus, the cancer risk for school/daycare receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all school/daycare receptors due to construction activities*.

The maximum mitigated chronic health impact for all school/daycare receptors would be 0.01. Thus, the chronic health impact due to construction activities for all school/daycare receptors would be below the Project-level threshold of 1 and the chronic health impact would be *less than significant for all school/daycare receptors due to construction activities*.

46 Primarily due to construction activities during year 3 and 4 associated with Phase 2 and 3.

Health Impacts at Off-site Workers Due To Construction Activities

As shown in **Table 19: Estimated Unmitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from unmitigated proposed Project construction emissions for an off-site worker receptor (such as office buildings, retail centers, hotels, hospitals) would be 0.6 per one million persons. Thus, the cancer risk for off-site worker receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all off-site worker receptors due to construction activities*.

The maximum unmitigated chronic health impact modeled to occur at an off-site worker receptor would be 0.01. Thus, the chronic health impact due to construction activities at all off-site worker receptors would be below the Project-level threshold of 1 and would be *less than significant for all off-site worker receptors due to construction activities*.

As shown in **Table 20: Estimated Mitigated Health Impacts from Construction Activities for Morning/Night Scenario**, the maximum cancer risk from mitigated proposed Project construction emissions for an off-site worker receptor would be 0.2 per one million persons. Thus, the cancer risk for off-site worker receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant health impacts for all off-site worker receptors due to construction activities*.

The maximum mitigated chronic health impact modeled to occur at an off-site worker receptor would be 0.01. Thus, the chronic health impact due to construction activities at all off-site worker receptors would be below the Project-level threshold of 1 and would be *less than significant for all off-site worker receptors due to construction activities*.

Summary of Health Risk Assessment Results

The following concluding statements can be made about the health risk assessment results:

- The cancer risk for residential receptors due to construction activities would be potentially above the SCAQMD threshold of 10 per one million persons and would be *less than significant for residential receptors due to construction activities with mitigation*.
- The cancer risk for all school/daycare receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be *less than significant for school/daycare receptors due to construction activities*.
- The cancer risk for off-site worker receptors due to construction activities would be below the SCAQMD threshold of 10 per one million persons and would be l*ess than significant health impacts for all off-site worker receptors due to construction activities*.

- Generally (it depends on receptor location), the cancer risk due to construction activities would be potentially greater for the morning/night scenario compared to the morning/evening scenario and those adverse impacts would extend over a larger area near the Project alignment. This may have something to do with the morning/night scenario having a greater intensity than the morning/evening especially during overnight hours which tend to exhibit calm, stagnant air flow conditions and thus, higher pollutant concentrations.

11.0 GREENHOUSE GAS EMISSIONS

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007), with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHG naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHG occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's

atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO_2e).[47]

There is international scientific consensus that human-caused increases in GHG have and will continue to contribute to global warming. Potential global warming impacts may include, but are not limited to, loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Transit and Intercity Rail Capital Program (TIRCP)

The Transit and Intercity Rail Capital Program (TIRCP) was created by Senate Bill (SB) 862 (Chapter 36, Statutes of 2014) and modified by Senate Bill 9 (Chapter 710, Statutes of 2015) to provide grants from the Greenhouse Gas Reduction Fund to fund transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems to reduce emissions of greenhouse gases by reducing congestion and vehicle miles traveled throughout California. The goal of the TIRCP is to provide monies to fund transformative capital improvements that modernize California's intercity rail, bus, ferry and rail transit systems to achieve the following objectives:

- Reduction in greenhouse gas emissions;
- Expand and improve rail service to increase ridership;
- Integrate the rail service of the State's various rail operations, including integration with the high-speed rail system; and
- Improve safety

City of Inglewood Energy Efficiency Climate Action Plan

An Energy Efficiency Climate Action Plan (EECAP) has been developed by the City of Inglewood (City).[48] The Inglewood EECAP serves as the roadmap for the City to reduce GHG emissions, create jobs, and prepare for the impacts of climate change on public health, infrastructure, the economy, ecosystems, and public spaces in the City. The EECAP builds on the goals and policies in the City's General Plan to further

47 Because of the differential heat absorption potential of various GHG, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

48 City of Inglewood, Climate Action Plan, December 2015, Accessed July 6, 2020 at: http://www.southbaycities.org/sites/default/files/EECAP_Inglewood_Final_20151218.pdf and https://www.cityofinglewood.org/225/Sustainability.

the City's efforts to build health equity through the reduction of local GHG emissions, and to simultaneously ensure that the community is well prepared for the impacts of climate change.

The EECAP includes an inventory of the City's emissions, establish an emissions reduction target, and identifies City and community actions to reduce emissions. The City revised its existing 2005 GHG emissions inventory (baseline) with better transportation and solid waste data and compiled a 2012 inventory updates that allows the City to start assessing emissions trends over time while the interim years (2007 and 2010) provide context and may help identify trends or anomalies.

From 2005 to 2010, emissions decreased by over 2 percent. This reduction trend continued into the most recent 2012 inventory update year, with total emissions having decreased an additional 2 percent between 2010 and 2012. The Transportation sector was the largest contributor to emissions in both 2005 (48 percent) and 2012 (52 percent) by producing 287,372 MT CO_2e in 2005 and 294,376 MT CO_2e in 2012. This change represents a 2.4 percent increase in emissions from 2005 to 2012. Commercial/Industrial energy is the second-largest contributor to emissions, adding 23 percent in 2005 and 20 percent in 2012. While the proportion of emissions did not change significantly over time, the total emissions decreased by about 14 percent from 2005 to 2012, from 133,521 MT CO_2e to 114,719 MT CO_2e. The proportion of emissions from the Residential sector was also steady, at 21 percent in 2005 and 22 percent in 2012, with total emissions increased by less than 1 percent, from 124,844 MT CO_2e in 2005 to 125,250 MT CO_2e in 2012. Solid waste comprised 4 percent of the total (26,385 MT CO_2e) in 2005, but was reduced to 3 percent of the total (17,889 MT CO_2e) in 2012. Water, Wastewater, and Off-road sources made up the remaining emissions in each year. Water, Wastewater, and Off-Road Sources emissions declined from 2005 to 2012. Off-road sources comprise a very small percentage of overall emissions but are variable primarily due to construction-related emissions, which are based on the level of development estimated in the City each year. Other metrics used in the ECAP to evaluate emissions progress include emissions per resident and per service population (residents + jobs); both metrics also show a declining emissions trend over time, of about 3 percent between 2005 and 2012.

California Green Building Standards Code

The California Green Building Standards Code or CALGreen is a regulatory code for all residential, commercial, and school buildings to meet uniform standards in building design intended to minimize impacts on climate change.

CALGreen does not prevent a local jurisdiction from adopting a more stringent code, as State law provides methods for local enhancements. CALGreen recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. CALGreen also provides exemptions for areas not served

by construction and demolition recycling infrastructure. State building code provides the minimum standard, which buildings need to meet in order to be certified for occupancy. Enforcement is generally done by the local building official.

The development of CALGreen is intended to cause a reduction in GHG emissions from buildings; promote environmentally responsible, cost-effective, healthier places to live and work; reduce energy and water consumption; and respond to directives issued by the Governor, such as Assembly Bill 32, calling for the reduction of Statewide GHG emissions to 1990 levels by 2020. In short, CALGreen was established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impacts during and after project construction.

CALGreen contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. CALGreen provides for design options allowing a project designer to determine how best to achieve compliance for a given site or building condition. CALGreen also requires building commissioning, which is a process for verifying that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

California Environmental Quality Act and Climate Change

Under CEQA, lead agencies are required to disclose the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to affect the environment because they contribute to global climate change. In turn, global climate change has the potential to cause sea level rise, alter rainfall and snowfall patterns, and affect habitat.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which Statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the CalEPA to coordinate a multiagency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global

climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a Statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce Statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the State reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce Statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms,

monetary and nonmonetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program. On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board, along with the finalized environmental documents. The 2017 Scoping Plan, approved on December 14, 2017, outlines options to meet California's aggressive goals to reduce GHGs by 40 percent below 1990 levels by 2030.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders "All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets." The Executive Order also states that "CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent." The CARB is currently moving forward with a second update to the Climate Change Scoping Plan to reflect the 2030 reduction target. The updated Scoping Plan will provide a framework for achieving the 2030 target. In September of 2016, the AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

Greenhouse Gas Regional Emission Estimates

In 2018, the United States emitted about 6,677 million metric tons of CO_2. Emissions increased from 2017 to 2018 by 3.1 percent. Greenhouse gas emissions in 2018 (after accounting for sequestration from the

land sector) were 10.2 percent below 2005 levels. This increase was largely driven by an increase in emissions from fossil fuel combustion, which was a result of multiple factors, including more electricity use greater due to greater heating and cooling needs due to a colder winter and hotter summer in 2018 in comparison to 2017.[49]

In 2017, California emitted approximately 424 million metric tons of CO_2e, five million metric tons of CO_2e lower than 2016 levels and seven million metric tons of CO_2e below the 2020 GHG Limit of 431 million metric tons of CO_2e. Consistent with recent years, these reductions have occurred while California's economy has continued to grow and generate jobs. Compared to 2016, California's GDP grew 3.6 percent while the carbon intensity of its economy declined by 4.5 percent.

The transportation sector remains the largest source of GHG emissions in the State, but saw a one percent increase in emissions in 2017, the lowest growth rate over the past four years.[50]

The composition of GHG emissions in California (expressed as CO_2e) were as follows:

- CO_2 accounted for 83 percent;
- CH_4 accounted for nine percent;
- N_2O accounted for three percent; and
- Fluorinated gases (hydrofluorocarbons (HFCs), perfluorinated compounds (PFCs), and sulfur hexafluoride (SF_6)) accounted for five percent.

Of these gases, the transportation is the source of approximately 40 percent of the State's GHG emissions. The annual increase in transportation emissions in 2017 has slowed down slightly compared to the previous three years. Emissions from the electricity sector account for 15 percent of the inventory and show another large drop in 2017 due to a large increase in renewable energy. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources (for the purpose of the GHG inventory, these include hydro, solar, wind, and nuclear energy) than from GHG-emitting sources for both in-state generation and total (in-state plus imports) generation in 2017. The industrial sector has seen a slight emissions decrease in the past few years, and remains at 21 percent of the inventory.[51]

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49 United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks,* Accessed July 6, 2020 at https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.

50 California Air Resources Board, *Emissions Trends Report 2000-2017*, July 11, 2018, Accessed July 6, 2020 at:https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

51 California Air Resources Board, *Emissions Trends Report 2000-2017*, July 11, 2018, Accessed July 6, 2020 at:https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

Thresholds of Significance

The standards of significance applied to the analysis of potential GHG impacts are based on Appendix G of the *CEQA Guidelines.* According to Appendix G evaluation thresholds, the proposed Project would be considered to have significant air quality impacts if it were to:

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

For the proposed Project, the City is using the SCAQMD, 10,000 MT CO_2e per year industrial project screening threshold as the significance threshold in addition to the qualitative thresholds of significance from *Section VII of Appendix G to the CEQA Guidelines*. However, this threshold has not been adopted by the SCAQMD for use in CEQA documents.

The estimated construction GHG emissions for the proposed Project are 14,348 metric tons of CO_2e, which corresponds to 1,413,632 gallons of diesel fuel.[52] Given the five year construction period, the annual construction GHG emissions for the proposed Project are 2,870 metric tons of CO_2e, which corresponds to 282,726 gallons of diesel fuel per year. As indicated, 50-year amortized construction related GHG emissions would be approximately 287 metric tons of CO_2e per year. The results of the comparison are presented in **Table 21: Estimated Construction Greenhouse Gas Emissions for the Proposed Project**.

Table 21
Estimated Construction Greenhouse Gas Emissions for the Proposed Project

Construction Year	CO_2e Metric Tons
2022	4,698
2023	4,328
2024	3,521
2025	1,361
2026	440
Total Construction Emissions	**14,348**
Total 50-Year Amortized Construction Emissions	**287**

Source: RCH Group, 2020

52 Fuel usage is estimated using the output for CO2 and a 10.15 kg-CO2/gallon conversion factor, as cited in the *U.S. Energy Information Administration Voluntary Reporting of Greenhouse Gases Program*, https://www.eia.gov/environment/pdfpages/0608s(2009)index.php.

An Energy Efficiency Climate Action Plan, as discussed previously, has been developed by the City regarding the reduction of GHG emissions.[53] The City EECAP is designed to achieve the goal for GHG emissions reductions by 40 percent before 2030 and thus, adhere to the AB 32 goals. The proposed Project would result in a significant impact if it would be in conflict with AB 32 State goals.

The proposed Project would be subject to all applicable permit and planning requirements in place or adopted by the City, the County, and the State of California at the time that building permits are issued. The proposed Project would be consistent with City and County plans, policies, and regulations for reduction of GHGs, and would therefore also be consistent with AB 32 and other Statewide goals for GHG reduction. Thus, the proposed Project would have a *less-than-significant impact* related to a conflict with a GHG reduction plan.

12.0 OPERATIONAL EMISSIONS INVENTORY

The proposed Project would consist of an automated people mover (APM) on an elevated guideway that runs approximately 1.6 miles along Market Street between Florence Avenue and Manchester Boulevard, where it transitions east along Manchester Boulevard for approximately half a mile to Prairie Avenue for approximately one mile. The proposed Project will increase transit ridership throughout the region, reduce vehicle miles traveled (VMT), criteria air pollutants, and GHG emissions, and improve air quality throughout the South Coast Air Basin. The proposed Project would also include a MSF to provide regular and preventive maintenance for the APM trains and well as for vehicle storage, and an operations control center. The MSF building will be approximately 78,000 square feet (SF) and will be elevated (to match the track elevation). Up to 300 vehicular parking spaces at-grade for public use will be available. Each of the three stations will be 8,000 square feet. Components of the proposed Project (such as APM Propulsion and Control Systems and Stations and parking facilities) would utilize electrical energy for a whole range of function.

The air quality analysis of operations includes a review of criteria pollutant emissions such as CO, NO_x, SO_2, VOC as ROG, coarse particulate or PM_{10}, fine particulate or $PM_{2.5}$, as well as GHG emissions.

Regulatory models used to estimate air quality impacts and GHG emissions include:

- CARB's EMFAC[54]emissions inventory model. EMFAC is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in

53 *City of Inglewood, Climate Action Plan,* December 2015, Accessed July 6, 2020 at: http://www.southbaycities.org/sites/default/files/EECAP_Inglewood_Final_20151218.pdf and https://www.cityofinglewood.org/225/Sustainability.

54 California Air Resources Board, EMFAC2017 User's Guide, March 1, 2018, Accessed July 23, 2020 at: https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf and https://www.arb.ca.gov/emfac/2017/.

California. This model reflects CARB's current understanding of how vehicles travel and how much they emit. EMFAC can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future.

- CalEEMod (California Emissions Estimator Model Version 2016.3.2)[55] land use emissions model estimates construction emissions due to demolition and construction activities and operational emissions.

Operations are expected to commence in 2026. Regulatory models used to estimate air quality emissions from proposed Project operations include the CARB EMFAC[56] emissions inventory model. Six operational scenarios were analyzed to evaluate the proposed Project operational emissions, as follows:

1. Adjusted Baseline (2016) Non-event Weekday without ITC Project
2. Adjusted Baseline (2016) Non-event Weekday with ITC Project
3. Year 2026 with Event Weekday without ITC Project
4. Year 2026 with Event Weekday with ITC Project
5. Year 2045 with Event Weekday without ITC Project
6. Year 2045 with Event Weekday with ITC Project

An Adjusted Baseline (2016) No Event and Existing Condition (2020) were also analyzed.

Supporting information for the operational emissions inventory are found in **Attachment E: Operational Air Emissions Inventory**. Emission sources associated with the Adjusted Baseline and Existing Condition include area sources (consumer products and landscaping), energy usage (natural gas), energy (electrical), and motor vehicles. Emission sources associated with the proposed project include area sources (consumer products and landscaping), energy usage (natural gas), energy (electrical for GHG only), standby generators, and motor vehicles (employee trips, deliveries and general public).

Adjusted Baseline

The Hollywood Park Specific Plan (HPSP) Adjusted Baseline projects would emit air pollutants associated with vehicle trips, maintenance operations, energy consumption, etc., from all of its operational land uses. Specifically, vehicle trips associated with activities at the HPSP would begin taking place during mid-2020 when the NFL Stadium begins operations and uses are operating on the HPSP site, which would have an impact on local and regional air quality. Accordingly, the air pollutant emissions associated with this

55 California Air Resources Board, *California Emissions Estimator Model User's Guide,* November 9, 2017, Accessed August 25, 2020 at: http://www.caleemod.com/.

56 California Air Resources Board, *EMFAC2017 User's Guide*, March 1, 2018, Accessed July 6, 2020 at: https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf and https://www.arb.ca.gov/emfac/2017/.

development within the HPSP area are considered as part of the Adjusted Baseline. **Table 22: Adjusted Baseline Projects Characteristics** presents the characteristics of the Adjusted Baseline.

Table 22
Adjusted Baseline Projects Characteristics

Land Use	Adjusted Baseline Projects	ADT	Daily VMT
Retail	518,077 SF	18,400	362,480
General Office	466,000 SF	4,721	93,004
Multifamily Residential	314 units	1,708	33,648
NFL Stadium	70,240 seats (2,772,304 SF)	NA	NA
Perform. Venue	6,000 seats (40,800 SF)	NA	NA
Open Space	11.89 acre	NA	NA
Civic Use	4 acre	NA	NA

Source: Hollywood Park Specific Plan and Raju Associates, Inc., 2020
Based on trip distance of 19.7 miles; average within South Coast Air Basin

Table 23: Estimated Daily Emissions (pounds) for Adjusted Baseline Land Uses presents the daily criteria pollutant emissions for the Adjusted Baseline.

Table 23
Estimated Daily Emissions (pounds) for Adjusted Baseline Land Uses

Source	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2
Area (Consumer Products, Landscaping)	112	186	6.82	24.1	24.1	0.41
Energy (Natural Gas)	0.26	1.58	2.33	0.18	0.18	0.01
Motor Vehicles	36.9	1,258	134	52.9	22.4	3.58
Total	**149**	**1,445**	**143**	**77.2**	**46.7**	**4.00**

Source: RCH Group, 2020
Notes: Area sources and energy (natural gas) values based on CalEEMod and data within Table 22. Motor vehicle values based EMFAC and data within Table 22.

Table 24: Estimated Annual GHG Emissions (metric tons) for Adjusted Baseline Land Uses presents the annual GHG emissions for the Adjusted Baseline. The Adjusted Baseline emits 67,589 MT of CO_2e annually.

Table 24
Estimated Annual GHG Emissions (metric tons) for Adjusted Baseline Land Uses

Source	CO_2e
Area (Consumer Products, Landscaping)	106
Energy (Natural Gas)	477
Energy (Electrical)	4,379
Solid Waste	564
Water and Waste Water	1,092
Motor Vehicles	60,971
Total	**67,589**

Source: RCH Group, 2020
Notes: Area sources, water, waste, and energy (natural gas and electrical) values based on CalEEMod and data within Table 22. Motor vehicle values based EMFAC and data within Table 22.

Existing Condition

For the proposed Project, the first phase of construction would be the demolition of the commercial property for the Market Street Station, for the Vons Supermarket and gas station on Manchester, and for the commercial building on the southeast corner of Manchester and Market Street. **Table 25: Existing Condition Land Uses Characteristics** presents the characteristics of the Existing Condition.

Operation of these existing on-site businesses result in the emission of air pollutants associated with vehicle trips to and from the proposed Project, on-site combustion of natural gas for heating and cooking, and fugitive emissions of VOC from the use of aerosol products and coatings and landscaping. However, data with respect to the exact activity level (i.e., utility consumptions) at each business may not be obtainable, so existing emissions were based on land use characteristics and default values.

Table 25
Existing Condition Land Uses Characteristics

Property Address	Use Type	Quantity	ADT	Daily VMT
310 East Florence Ave	Restaurant	1,200 SF	101	1,990
300 East Florence Ave	Restaurant	4,762 SF	399	7,860
254 North Market St	Restaurant	4,608 SF	386	7,604
250 North Market St	Auto Service	44,000 SF	2,435	47,970
240 North Market St	Shopping Center	12,300 SF	492	9,692
230 North Market St	Store	22,194 SF	1,474	29,038
224 North Market St	Store	5,000 SF	3,811	75,077
222 North Market St	Shopping Center	25,500 SF	2,297	45,251
210 North Market St	Shopping Center	7,348 SF	294	5,792
150 South Market St	Store	16,575 SF	1,101	21,690
500 East Manchester Blvd	Supermarket	76,402 SF	8,158	160,713
510 East Manchester Blvd	Gas Station	202 SF	1,376	27,107

Source: Meridian Consultants, 2020

Table 26: Estimated Daily Emissions (pounds) for Existing Condition Land Uses presents the daily criteria pollutant emissions for the Existing Condition, which will be eliminated as a result of the proposed Project.

Table 26
Estimated Daily Emissions (pounds) for Existing Condition Land Uses

Source	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2
Area (Consumer Products, Landscaping)	4.92	0.02	<0.01	<0.01	<0.01	<0.01
Energy (Natural Gas)	0.16	1.22	1.45	0.11	0.11	0.01
Motor Vehicles	33.2	1,131	120	47.6	20.1	3.22
Total	**38.3**	**1,132**	**122**	**47.7**	**20.2**	**3.23**

Source: RCH Group, 2020

Notes: Area sources and energy (natural gas and electrical) values based on CalEEMod and data within Table 25. Motor vehicle values based EMFAC and data within Table 25.

Table 27: Estimated Annual GHG Emissions (metric tons) for Existing Condition Land Uses presents the annual GHG emissions for the Existing Condition, which will be eliminated as a result of the proposed Project. The Existing Condition emits 57,262 MT of CO_2e annually.

Table 27
Estimated Annual GHG Emissions (metric tons) for Existing Condition Land Uses

Source	CO_2e
Area (Consumer Products, Landscaping)	<1
Energy (Natural Gas)	291
Energy (Electrical)	1,511
Solid Waste	485
Water and Waste Water	155
Motor Vehicles	54,819
Total	**57,262**

Source: RCH Group, 2020

Notes: Area sources, water, waste, and energy (natural gas and electrical) values based on CalEEMod and data within Table 25. Motor vehicle values based EMFAC and data within Table 25.

Proposed Project

Table 28: Daily and Annual VMT for the Six Operational Scenarios presents the daily and annual VMT for the six operational scenarios with and without the proposed Project. As shown, the proposed Project daily and annual VMT are less than the daily and annual VMT without the proposed Project.

Table 28
Daily and Annual VMT for the Six Operational Scenarios

Scenario	Daily VMT	Annual VMT
Adjusted Baseline (2016) Non-event Weekday without ITC Project	3,159,055	1,007,356,937
Adjusted Baseline (2016) Non-event Weekday with ITC Project	3,138,289	1,000,735,086
Year 2026 with Event Weekday without ITC Project	5,275,088	1,346,432,106
Year 2026 with Event Weekday with ITC Project	5,047,349	1,316,518,609
Year 2045 with Event Weekday without ITC Project	5,662,297	1,469,905,139
Year 2045 with Event Weekday with ITC Project	5,365,217	1,433,075,931

Source: Raju Associates, Inc., 2020

Table 29: Estimated Daily Operational Emissions (pounds) for Proposed Project for Motor Vehicles presents the daily criteria air pollutant emissions for the six operational scenarios with and without the proposed Project. As shown, the proposed Project daily criteria air pollutant emissions are less than the daily criteria air pollutant emissions without the proposed Project.

Table 29
Estimated Daily Operational Emissions (pounds) for Proposed Project for Motor Vehicles

Scenario	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2
Adjusted Baseline (2016) Non-event Weekday without ITC Project	477	12,420	3,114	407	195	28.6
Adjusted Baseline (2016) Non-event Weekday with ITC Project	474	12,339	3,094	404	194	28.4
Year 2026 with Event Weekday without ITC Project	252	8,738	1,748	610	256	36.4
Year 2026 with Event Weekday with ITC Project	241	8,361	1,672	584	245	34.9
Year 2045 with Event Weekday without ITC Project	185	6,728	1,532	653	269	31.5
Year 2045 with Event Weekday with ITC Project	175	6,375	1,452	618	255	29.8
Incremental Change	**VOC**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Adjusted Baseline Non-event Weekday with ITC Project vs Adjusted Baseline Non-event Weekday without ITC Project	(3.14)	(81.6)	(20.5)	(2.67)	(1.28)	(0.19)
Year 2026 with Event Weekday with ITC Project vs Year 2026 with Event Weekday without ITC Project	(10.9)	(377)	(75.5)	(26.3)	(11.1)	(1.57)
Year 2045 with Event Weekday with ITC Project vs Year 2045 with Event Weekday without ITC Project	(9.71)	(353)	(80.4)	(34.2)	(14.1)	(1.65)
Significance Threshold	55	550	55	150	55	150

Source: RCH Group, 2020
Note: Based on EMFAC and data within Table 28

Table 30: Estimated Daily Emissions (pounds) for Proposed Project presents the daily criteria air pollutant operational emissions under normal operations including the standby generators, employee trips, deliveries, area sources, energy sources (natural gas), motor vehicle, while accounting for the reduction in motor vehicle as a result of the proposed Project and elimination of Existing sources. **Table 30** presents the typical daily emissions associated with the proposed Project operations (e.g., 1.53 pounds of NOx). **Table 30** also presents the typical daily emissions plus O&M for the standby generators (one generator

tested per day for 2 hours) associated with the proposed Project operations (e.g., 126 pounds of NOx). **Table 30** also presents the daily emissions plus O&M while accounting for the reduction in air emissions due to the reduction in motor vehicle (see **Table 29: Estimated Daily Operational Emissions (pounds) for Proposed Project for Motor Vehicles**) resulting from the proposed Project (e.g., 50.7 pounds of NOx). Lastly, **Table 30** presents the daily emissions plus O&M while accounting for the reduction in air emissions due to the reduction in motor vehicle and the elimination of existing emission sources (see **Table 26: Estimated Daily Emissions (pounds) for Existing Condition Land Uses**) resulting from the proposed Project (e.g., a reduction of 71.1 pounds of NOx). Therefore, the proposed Project operations would have a *less than significant (and beneficial) impact on air quality*.

Table 30
Estimated Daily Emissions (pounds) for Proposed Project

Source	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2
Employee Trips	0.29	9.23	0.52	0.60	0.25	0.03
Deliveries	0.03	0.33	0.43	0.08	0.04	0.01
Area (Consumer Products, Landscaping)	2.33	0.04	<0.01	<0.01	<0.01	<0.01
Energy Source (Natural Gas)	0.06	0.48	0.57	0.04	0.04	<0.01
Subtotal Project (Typical Operations)	**2.72**	**10.1**	**1.53**	**0.73**	**0.33**	**0.04**
Emergency Generators	4.26	11.8	125	0.95	0.95	8.68
Subtotal Project (Typical Operations + O&M)	**6.98**	**21.9**	**126**	**1.67**	**1.28**	**8.72**
Motor Vehicles	-10.9	-377	-75.5	-26.3	-11.1	-1.57
Subtotal (Project with Motor Vehicle Reductions)	**-3.89**	**-355**	**50.7**	**-24.7**	**-9.79**	**7.15**
Existing Condition	-38.3	-1,132	-122	-47.7	-20.1	-3.23
Grand Total (Project)	**-42.1**	**-1,488**	**-71.1**	**-72.3**	**-29.9**	**3.92**
Significance Threshold	55	550	55	150	55	150
Exceeds Threshold?	No	No	No	No	No	No

Source: RCH Group, 2020

Notes: Standby generator values based on vender specifications. Employee trips and deliveries values based on EMFAC. Area sources and energy (natural gas) values based on CalEEMod. Motor vehicle values based on Table 29. Existing Condition values based on Table 26.

Table 31: Estimated Annual Operational GHG Emissions (metric tons) for Proposed Project for Motor Vehicles presents the annual GHG emissions for the six operational scenarios with and without the proposed Project. As shown, the proposed Project annual GHG emissions are less than the daily criteria air pollutant emissions without the proposed Project.

Table 31
Estimated Daily Operational Emissions (pounds) for Proposed Project for Motor Vehicles

Scenario	CO_2
Adjusted Baseline (2016) Non-event Weekday without ITC Project	430,621
Adjusted Baseline (2016) Non-event Weekday with ITC Project	427,791
Year 2026 with Event Weekday without ITC Project	441,490
Year 2026 with Event Weekday with ITC Project	431,682
Year 2045 with Event Weekday without ITC Project	390,262
Year 2045 with Event Weekday with ITC Project	380,484
Incremental Change	**CO_2**
Adjusted Baseline Non-event Weekday with ITC Project vs Adjusted Baseline Non-event Weekday without ITC Project	-2,831
Year 2026 with Event Weekday with ITC Project vs Year 2026 with Event Weekday without ITC Project	-9,809
Year 2045 with Event Weekday with ITC Project vs Year 2045 with Event Weekday without ITC Project	-9,778

Source: RCH Group, 2020
Note: Based on EMFAC and data within Table 28

Table 32: Estimated Annual GHG Emissions (metric tons) for Proposed Project presents the annual GHG emissions. The proposed Project operations would have a *less than significant (and beneficial) impact on GHG emissions*. The proposed project would result in a reduction of 59,016 MT of CO_2e annually during operations.

Table 32
Estimated Annual GHG Emissions (metric tons) for Proposed Project

Source	Annual GHG
Employee Trips	559
Deliveries	90
Area (Consumer Products, Landscaping)	0
Energy (Natural Gas)	114
Energy Source (Electrical)	6,800
Solid Waste	49
Water and Waste Water	130
Subtotal Project (Typical Operations)	**7,743**
Emergency Generators	311
Subtotal Project (Typical Operations + O&M)	**8,054**
Motor Vehicles	-9,809
Subtotal (Project with Motor Vehicle Reductions)	**-1,755**
Existing Condition	-57,262
Grand Total (Project)	**-59,016**

Source: RCH Group, 2020
Notes: Standby generator values based on vender specifications. Employee trips and deliveries values based on EMFAC. Area sources and energy (Natural Gas) values based on CalEEMod. Motor vehicle values based on Table 31. Existing Condition value based on Table 27. Energy (Electrical) is based on CalEEMod for MSF plus APM usage of 27,114,390 kWh along with an SCE emission factor of 535 pounds per MWh.

The City has developed a set of broad sustainability strategies included as part of the Design Guidelines to be incorporated into the design, construction, and operations of each proposed Project component. These guidelines align with Inglewood's commitment to sustainability City-wide, as outlined in the City's Energy and Climate Action Plan and Energy Efficiency Climate Action Plan. These sustainability guidelines serve as a mechanism to promote the City's commitment to reduce its environmental footprint and promote energy efficient design requirements, water conservation and water quality improvement projects, natural resource protection efforts, waste reduction and recycling, and numerous air quality emissions reduction policies and programs.

For operational impacts, the proposed Project would comply with the requirements of California Green Building Standards Code (CALGreen) and be consistent with the City of Inglewood Energy Efficiency Climate Action Plan involving policies and programs related to sustainability, energy efficiency, and reduction in GHG emissions. The City has committed to taking an active role in promoting energy conservation and environmentally-friendly initiatives to improve the environment and realize the co-benefits, which include energy independence, cost savings for energy not used, water saved, improved air quality, and public health benefits from improved air quality.

The City has an ongoing commitment to increasing energy efficiency and implementing energy conservation measures to reduce wasteful, inefficient, and unnecessary consumption. The proposed Project would incorporate a number of sustainability features as listed in **Proposed Sustainability Guidelines** within the Project Description. These guidelines are intended to integrate the design of new and existing facilities and to create a passenger experience that reflects the City's history and architecture, while providing design guidance for new construction or modernization of the proposed Project. The City has committed to implementing, if feasible, various sustainability measures for different proposed Project elements that meet or exceed CALGreen requirements, including energy and water conservation measures, for each of the follow proposed Project components: an elevated guideway and stations and the MSF. The sustainability strategies relate to planning and design; energy efficiency and renewable energy; water efficiency and conservation; materials conservation and resource efficiency; and environmental quality.

Standby Generators

Additionally, the proposed Project would include up to two stationary standby generators with an estimated total capacity rated at approximately 4,000 kilowatts (kW) to provide emergency power primarily for lighting and other emergency building systems. Emergency generator emissions were calculated based on compliance with applicable federal emissions standards and compliance with SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) mandated emission limits and operating hour constraints. This analysis also assumed that the standby generators would operate up to two hours per day and a total of 50 hours per

year for testing and maintenance (per SCAQMD Rule 1470 limit). SCAQMD requires that all internal combustion engines (ICE) greater than 50 brake horsepower (bhp) and gas turbines greater than 2,975,000 Btu per hour obtain a permit to construct prior to installation of the engines at a site.

SCAQMD defines a standby ICE or turbine for non-utility power generation as one that does not operate more than 200 hours a year and is only operated in the event of an emergency power failure or for routine testing and maintenance is considered a standby backup generator for power generation. Operators should petition the SCAQMD's Hearing Board for a variance to operate in excess of the allowed 200 hours before it is anticipated that the hours may be exceeded.

- The internal combustion engines must meet SCAQMD's Best Available Control Technology (BACT) requirements.
- It is advisable before purchasing any equipment to consult with the SCAQMD and apply for approval of a Permit to Construct from the SCAQMD prior to installation of the engine. Typically, the SCAQMD either issues a Permit to Construct or a Permit to Construct/Operate.

The Project Applicant will implement the following operational equipment requirements and operation protocols for equipment operating at the proposed Project. These features would be included in applicable bid documents, and successful contractor(s) must demonstrate the ability to supply such equipment and comply with such protocols. Operational features would include the following:

- All standby generators used for proposed Project operations shall be selected from the SCAQMD certified generators list and meet applicable federal standards for diesel emissions. For after-treatment of engine exhaust air, a diesel particulate filter shall be provided to meet the emission level requirements of SCAQMD. The proposed Project would have two standby generators, each could operate up to two hours per day and a total of 50 hours per year for testing and maintenance (per SCAQMD Rule 1470 limit) to ensure reliability in the case of a power outage.
- The Applicant shall conduct maintenance and/or testing on the two standby generators on separate days.

Therefore, each standby generators would operates for 2 hours per day during 25 days per year for a total of 50 hours per year. Each standby generator shall be tested during different days. For emergency operation both generators would operate up to 2 hours each and could occur simultaneously.

Vender specifications were used to determine air pollutants emission factors for the standby generators. Emission factors are 5.27 g/hp-hour for NOx, 0.5 g/hp-hour for CO, 0.18 g/hp-hour for VOC, and 0.4 g/hp-hour for $PM_{10}/PM_{2.5}$. The estimated annual fuel usage assuming each generator operates of 50 hours per year (2 hours per day) is 27,440 gallons of diesel fuel.[57]

57 Vender Specifications for Standby Generator, Accessed August 25, 2020 at: https://www.cat.com/en_US/products/new/power-systems/electric-power.html

Electrical Usage

Components of the proposed Project would utilize electrical energy for a whole range of function. During normal operation of the proposed TPSS at the MSF Site (TPSS 1) is estimated to have a peak power load flow of 2,008 kilowatts (kW) and normal operation of the proposed TPSS at the Transit Center TPSS (TPSS 2) is estimated to have a peak power load flow of 2,119 kW for a total of 4,127 kW. The proposed Project would operate for 18 hours per day which would generate a total electricity demand of 74,286 kWh per day or 27,114,390 kWh (27,114 Megawatts-hour or MWh) per year.[58] In the event TPSS 1 is unable to operate, TPSS 2 is estimated to have a peak power load of 4,152 kW which would generate a total electricity demand of 74,736 kWh per day or 27,278,640 kWh (27,279 MWh) per year. Similarly, in the event TPSS 2 is unable to operate, TPSS 1 is estimated to have a peak power load of 4,353 kW which would generate a total electricity demand of 78,354 kWh per day or 28,599,210 kWh (28,599 MWh) per year.

The electrical demand from the existing (but to be removed as part of the proposed Project) commercial, restaurant, and retail uses at the current commercial plaza at Florence and Market Street (proposed Market Street/Florence Avenue Station site) and the commercial plaza at 500 East Manchester Boulevard (proposed MSF site) is 5,110,987 kWh per year. Therefore, during normal operation, the electricity demand for the proposed Project results in a net increase of 22,003,403 kWh (22,003 MWh) per year. In the event TPSS-1 is unable to operate, the electricity demand for the proposed Project results in a net increase of 22,167,653 kWh (22,168 MWh) per year. In the event TPSS-1 is unable to operate, the electricity demand for the proposed Project results in a net increase of 23,488,223 kWh (23,488 MWh) per year. The electrical demand associated with the Adjusted Baseline is 16,507,545 kWh (16,508 MWh) per year.

Southern California Edison average CO_2e intensity factors for its total electricity mix is projected to be 0.173 $MTCO_2e$/MWh (or 535 pounds per MWh) and was used to determine the GHG emissions from the APM. Estimated GHG emissions from APM operations are the average CO_2e intensity factor (535 pounds per MWh) times the electrical usage (for example, 27,114 MWh for the proposed Project), which equals 6,580 metric tons.

13.0 SUMMARY

In summary, daily mitigated construction emissions would exceed the SCAQMD significance thresholds for NO_x during 2023 through 2025, as described in **Section 8**. These impacts are largely due to off-road construction equipment and to a much lesser degree due to off-site construction haul trucks. However,

58 Lea+Elliott, *Inc. Inglewood Transit Connector EIR Operating Systems Conceptual Planning EIR Project Definition DRAFT - June 2020 (See Appendix 3.0.1).*

during mitigated construction activities as presented in **Section 9**, the ambient air concentration impacts due to Project construction would be less than significant at all nearby receptors for all pollutants. Therefore, although the daily construction emissions for NO_x would potentially exceed the SCAQMD significance thresholds, but the resultant air concentrations would not likely exceed the SCAQMD significance thresholds. As shown in **Section 10**, during mitigated construction activities, incremental cancer risks would not exceed significance thresholds at existing residence, existing daycare/school and off-site worker locations. As shown in **Section 11**, the GHG emissions associated with construction activities would not likely exceed the SCAQMD significance thresholds. Daily operational emissions would less than significant compared to the SCAQMD significance thresholds. Once operational, the proposed Project will increase transit ridership throughout the region, reduce vehicle miles traveled and criteria air pollutants, GHG emissions, and improve air quality throughout the South Coast Air Basin (see **Section 12**). Therefore, short-term construction-related air quality impacts would occur but long-term operational-related air quality benefits would follow.