



Appendix B – Air Quality, Greenhouse Gas and Energy Assessment

Draft Environmental Impact Report (SCH#2026010287) June 2026



DATE: December 18, 2024
TO: Ms. Sonya Hooker, Ruth Villalobos & Associates, Inc.
FROM: Haseeb Qureshi, Alyssa Barnett
JOB NO: 15559-03 AQ, GHG & EA Assessment

CITY OF CHINO EUCLID AVENUE BRIDGE AIR QUALITY, GREENHOUSE GAS AND ENERGY ASSESSMENT

Ms. Sonya Hooker,

Urban Crossroads, Inc. is pleased to provide the following Air Quality, Greenhouse Gas and Energy Assessment for the City of Chino Euclid Avenue Bridge (Project), which is located along Euclid Avenue (State Route 83) between Pine Avenue and State Route 71 within in the City of Chino.

PROJECT OVERVIEW

It is our understanding that the Project is to consist of a new multi-span bridge and is expected to be approximately 2,500 feet long, in order to elevate the current roadway to prevent flooding and that the Project area footprint passes through habitat which contains nesting site for endangered bird species. The proposed project is anticipated to be constructed by the year 2028.

SUMMARY OF FINDINGS

Results of the assessment indicate that the Project would result in a less than significant impact with respect to air quality, greenhouse gases (GHG) and energy and no mitigation is required.

EXHIBIT 1: LOCATION MAP

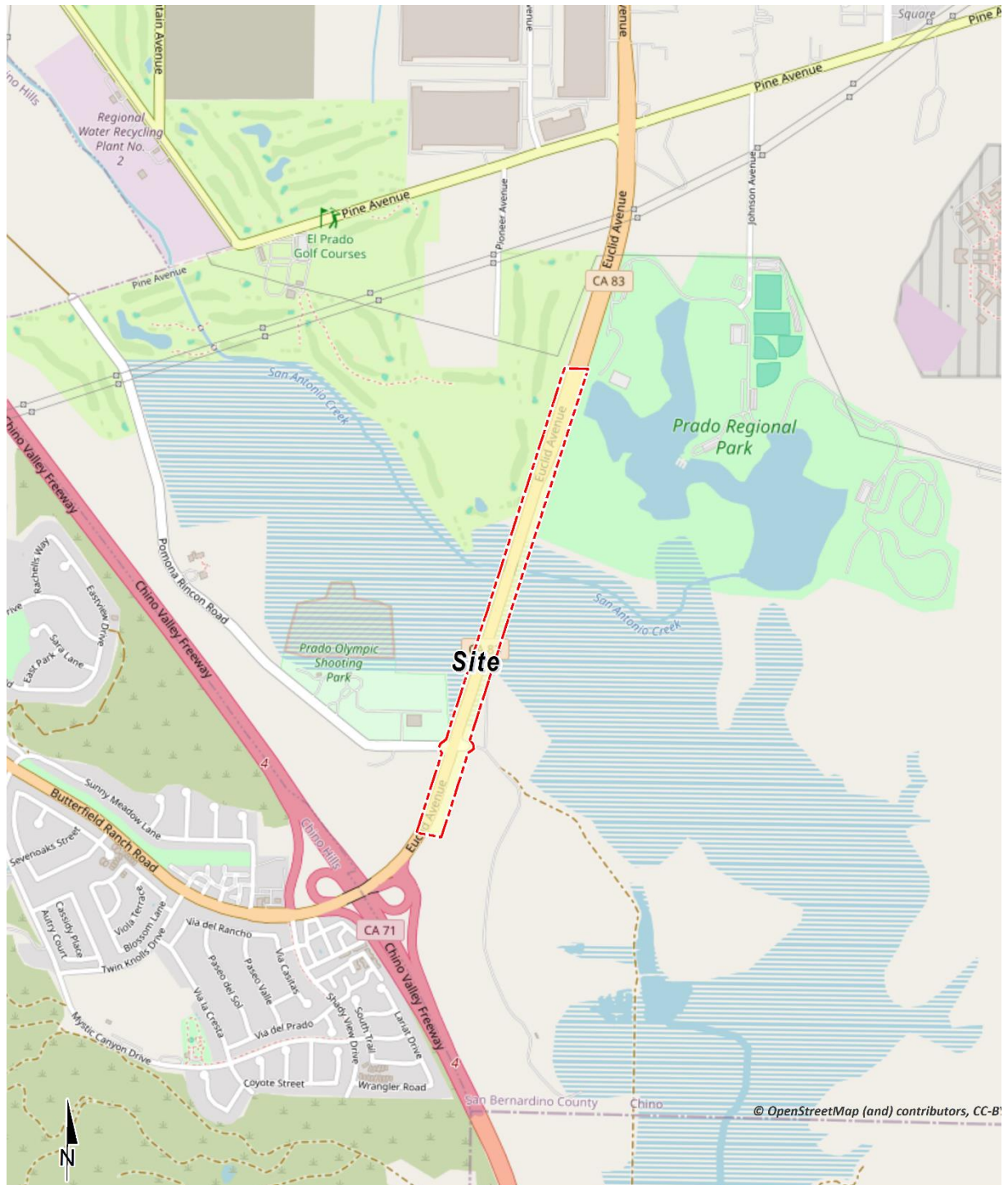


EXHIBIT 2: SITE PLAN



PROJECT AIR QUALITY IMPACTS

AIR QUALITY SETTING

SOUTH COAST AIR BASIN (SCAB)

The Project site is located in the SCAB within the jurisdiction of South Coast Air Quality Management District (SCAQMD) (1). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As previously stated, the Project site is located within the SCAB, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County.

The SCAB 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 Los Angeles County portion of the Mojave Desert Air Basin is bounded by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

Regional Climate

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s degrees Fahrenheit (°F). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide (SO₂) to sulfates (SO₄) is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent (%) along the coast and 59% inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90% of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14½ hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as nitrogen oxides (NO_x) and carbon monoxide (CO) from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

Wind Patterns and Project Location

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The SCAB is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

Criteria Pollutants

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called “criteria” pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O₃) (precursor emissions include NO_x and reactive organic gases (ROG), CO, particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Riverside County portion of the SCAB is designated as a nonattainment area for the federal O₃ and PM_{2.5} standards and is also a nonattainment area for the state standards for O₃, PM₁₀, and PM_{2.5}.

Sensitive Receptor Locations

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as “sensitive receptors”. These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with the LST Methodology, the nearest land use where an individual could remain for 24 hours to the Project site has been used to determine construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5}, since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time.

Receptors in the Project study area are described below. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site. Receptors in the Project study area are shown in Exhibit 3 under the Localized Construction Emissions section later in the report.

- R1 is located at the Pacifica Senior Living Chino Hills, 6500 Butterfield Ranch Road, approximately 1,530 feet southwest of the Project site. Since no outdoor use areas are facing the Project, R1 represents the building façade nearest and facing the Project site.
- R2 is located at a multiple family residential building at 17871 Shady View Drive, approximately 1,319 feet southwest of the Project site. Since no outdoor use areas are facing the Project, R2 represents the building façade nearest and facing the Project site.
- R3 is located at the Prado Golf Course, Hole 6 on the green, approximately 104 feet west of the Project site. R3 represents the nearest location within the golf course to the Project site where someone would stand.
- R4 is located at the Prado Disc Golf Course, near the location of a picnic table, R4 represents bird nesting habitat west of the Project, approximately 339 feet northeast of the Project site. R4 represents the nearest location within the disc golf course to the Project site where someone would stand or rest.

REGULATORY BACKGROUND

FEDERAL REGULATIONS

The EPA is responsible for setting and enforcing the national ambient air quality standards (NAAQS) for O₃, CO, NO_x, SO₂, PM₁₀, and lead (Pb) (2). The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (3). The CAA also mandates that each state submit and implement state implementation plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions) (4) (5). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O₃, NO₂, SO₂, PM₁₀, CO, PM_{2.5}, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O₃ and to adopt a NAAQS for PM_{2.5}.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_x. NO_x is a collective term that includes all forms of NO_x which are emitted as byproducts of the combustion process.

CALIFORNIA REGULATIONS

CARB

The CARB, which became part of the California EPA (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. AB 2595 mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the California ambient air quality standards (CAAQS) for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for SO₄, visibility, hydrogen sulfide (H₂S), and vinyl chloride (C₂H₃Cl). However, at this time, H₂S and C₂H₃Cl are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (6) (7).

Local air quality management districts, such as the SCAQMD, regulate air emissions from stationary sources such as commercial and industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare Air Quality Management Plans (AQMP) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a 5% or more annual reduction in emissions or 15% or more in a period of three years for ROG_s, NO_x, CO and PM₁₀. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than 5% per year under certain circumstances.

AQMP

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMP to meet the state and federal ambient air quality standards (8). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

APPLICABLE REGULATORY REQUIREMENTS

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to Rule 403 (Fugitive Dust) (9).

SCAQMD RULE 403

This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent and reduce fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth moving and grading activities. This rule is intended to reduce PM₁₀ emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM₁₀ suppression techniques are summarized below.

- Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.

- All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
- All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.
- Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the workday to remove soil tracked onto the paved surface.

METHODOLOGY

The California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released CalEEMod 2022 in May 2022. CalEEMod periodically releases updates, as such the latest version available at the time of this report has been utilized in this analysis. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (10). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions.

STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the California Environmental Quality Act Guidelines (CEQA Guidelines) (14 California Code of Regulations (CCR) §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (11):

- **Threshold 1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Threshold 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.
- **Threshold 3:** Expose sensitive receptors to substantial pollutant concentrations.
- **Threshold 4:** Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

AIR QUALITY REGIONAL EMISSIONS THRESHOLDS

The SCAQMD has developed regional significance thresholds for criteria pollutants, as summarized in Table 1 (12). SCAQMD's CEQA Air Quality Significance Thresholds (March 2023) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 1: MAXIMUM DAILY REGIONAL EMISSIONS THRESHOLDS

Pollutant	Construction	Operations
NO _x	100 lbs./day	55 lbs./day
VOC	75 lbs./day	55 lbs./day
PM ₁₀	150 lbs./day	150 lbs./day
PM _{2.5}	55 lbs./day	55 lbs./day
SO _x	150 lbs./day	150 lbs./day
CO	550 lbs./day	550 lbs./day

lbs./day – Pounds Per Day

AIR QUALITY LOCALIZED EMISSIONS THRESHOLDS

For this Project, the appropriate Source Receptor Area (SRA) for the LST analysis is the SCAQMD Southwest San Bernardino Valley area monitoring station (SRA 33). LSTs apply to CO, NO₂, PM₁₀, and PM_{2.5}. The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size.

In order to determine the appropriate methodology for determining localized impacts that could occur as a result of Project-related construction, the following process is undertaken:

- Identify the maximum daily on-site emissions that will occur during construction activity:
 - The maximum daily on-site emissions could be based on information provided by the Project Applicant; or
 - The SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds and CalEEMod User's Guide Appendix A: Calculation Details for CalEEMod can be used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod (13) (14).
- If the total acreage disturbed is less than or equal to 5 acres per day, then the SCAQMD's screening look-up tables are utilized to determine if a Project has the potential to result in a significant impact. The look-up tables establish a maximum daily emissions threshold in lbs/day that can be compared to CalEEMod outputs.
- If the total acreage disturbed is greater than 5 acres per day, then LST impacts may still be conservatively evaluated using the LST look-up tables for a 5-acre disturbance area. Use of the 5-acre disturbance area thresholds can be used to show that even if the daily emissions from all construction activity were emitted within a 5-acre area, and therefore concentrated over a smaller area which would result in greater site adjacent concentrations, the impacts would still be less than significant if the applicable 5-acre thresholds are utilized.
- The LST Methodology presents mass emission rates for each SRA, project sizes of 1, 2, and 5 acres, and nearest receptor distances of 25, 50, 100, 200, and 500 meters. For

project sizes between the values given, or with receptors at distances between the given receptors, the methodology uses linear interpolation to determine the thresholds

As a conservative measure, it is assumed that the entire Project site can be actively disturbed during construction of the site. In CalEEMod, the Total Acres Graded (TAG) field represents the cumulative distance traversed on the property by the grading equipment. To properly grade a piece of land, multiple passes with grading equipment may be required. So even though the lot size is a fixed number of acres, the total acres graded could be an order of magnitude higher than the footprint of the lot. The default area is calculated based on the equipment list (including number of equipment), the number of days needed to complete the default phases listed on this screen, and the maximum number of acres a given piece of equipment can traverse in an 8-hour workday. For Linear land use types, the total acres graded is equal to the user input for lot acreage (15). CalEEMod assumes the entire Project site (20.5 acres) will be disturbed.

As previously stated, the *LST Methodology* provides look-up tables for sites with an area with daily disturbance of 5 acres or less. Project development would limit permanent impacts in non-wetland waters of the United States to less than 0.5 acre and would limit permanent impacts in wetland waters of the United States to less than 0.1 acre. As such, LSTs for a 1-acre site during construction are used as a screening tool to determine if further detailed analysis is required. The thresholds used in for the construction-source LST analysis are presented below in Table 2.

TABLE 2: MAXIMUM DAILY LOCALIZED EMISSIONS THRESHOLDS

Activity	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Land Grubbing	126 lbs/day	988 lbs/day	222 lbs/day	105 lbs/day
Grading				
Foundation Construction				
Substructure Construction				
Superstructure Construction				
Approach Embankment Construction				

CONSTRUCTION ACTIVITIES

Construction activities associated with the Project would result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following construction activities:

- Land Grubbing
- Grading
- Foundation Construction
- Substructure Construction
- Superstructure Construction

- Approach Embankment Construction¹

GRADING ACTIVITIES

Dust is typically a major concern during grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions”. Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). CalEEMod was utilized to calculate fugitive dust emissions resulting from this phase of activity. Project grading activity will require 20,000 cubic yards of cut and 96,000 cubic yards of fill with 76,000 cubic yards net fill/import. The borrow material will come from the Prado Basin, although the specific borrow location has not yet been determined. As a conservative approach, the CalEEMod defaults transport distance of 20 miles was utilized.

ON-ROAD TRIPS

Construction generates on-road vehicle emissions from vehicle usage for workers, vendors, and haul trucks commuting to and from the site. Worker trips are based on information provided by the Project Team while vendor and hauling trips are based on CalEEMod defaults

CONSTRUCTION DURATION

For the purpose of analysis, the construction of the Project is anticipated to begin in April 2027 and last approximately 24 months. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent². The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA Guidelines (16).

CONSTRUCTION EQUIPMENT

Equipment modeled is based on consultation with the Project Applicant. Consistent with industry standards and typical construction practices, each piece of equipment will operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the code.

REGIONAL CONSTRUCTION EMISSIONS SUMMARY

The estimated maximum daily construction emissions without mitigation are summarized in Table 3. Detailed construction model outputs are presented in Attachment A. Under the assumed

¹ In CalEEMod, “Linear Paving” refers to the process of laying concrete or asphalt along a linear path, which aligns with the activities involved in both superstructure and approach embankment construction. However, CalEEMod permits only a single paving phase to be modeled for linear projects. Since both superstructure and approach embankment construction involve concrete and asphalt paving and are expected to occur concurrently, these activities are modeled together within the same phase.

² As shown in the CalEEMod User’s Guide Version 2022.1.1.12, Section 4.3 “Off-Road Equipment” as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

scenarios, emissions resulting from the Project construction will not exceed thresholds established by the SCAQMD for emissions of any criteria pollutant and no mitigation is required.

TABLE 3: REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Summer						
2027	9.21	94.30	93.60	0.48	23.20	8.33
2028	5.11	30.50	45.40	0.13	1.86	1.18
Winter						
2027	6.76	46.10	60.30	0.17	2.72	1.74
2028	6.61	42.90	59.90	0.17	2.58	1.62
Maximum Daily Emissions	9.21	94.30	93.60	0.48	23.20	8.33
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

¹PM₁₀ and PM_{2.5} source emissions reflect 3x daily watering per SCAQMD Rule 403 for fugitive dust.

REGIONAL OPERATIONAL EMISSIONS SUMMARY

The proposed Project primarily involves construction activity. For on-going operations, mobile emissions would be generated by the motor vehicles traveling to and from the Project sites during on-going maintenance. However, the Project would generate a nominal number of traffic trips for periodic maintenance and inspections and would not result in any substantive new long-term emissions sources. As this Project involves the construction of a bridge, heating and consumer products would not be used. As such, the Project would not violate an air quality standard or contribute to an existing violation. Therefore, Project operations would not result in a cumulatively considerable net increase of any criteria pollutant and impacts would be less than significant.

LOCALIZED CONSTRUCTION EMISSIONS

SENSITIVE RECEPTORS

The analysis uses the methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (17). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in response to the

SCAQMD Governing Board's Environmental Justice Initiative I-4³. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

The SCAQMD recommends that the nearest sensitive receptor be considered when determining the Project's potential to cause an individual or cumulatively significant impact. The SCAQMD recommends that the nearest sensitive receptor be considered when determining the Project's potential to cause an individual or cumulatively significant impact. The nearest land use where an individual could remain for 24 hours to the Project site has been used to determine localized construction air quality impacts for emissions of PM₁₀ and PM_{2.5} (since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time). The nearest receptor used for evaluation of localized impacts of PM₁₀ and PM_{2.5} is location Receptor R5 which represents the tent camping area within Prado Regional Park, situated approximately 2,299 feet (701 meters) east of the Project site. It should be noted that the look-up tables only identify thresholds up to a 500-meter distance. As a conservative measure, the 500-meter distance will be used in lieu of the 701-meter distance in order to evaluate localized PM₁₀ and PM_{2.5} emission impacts.

As previously stated, and consistent with LST Methodology, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_x and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assume that an individual could be present at these sites for periods of one to 8 hours. The nearest receptor used for evaluation of localized impacts of NO_x and CO is Receptor R6 which represents the PEC Defense gun shop located at 17501 Pomona Rincon Road, approximately 151 feet (46 meters) west of the Project site. As such, a 46-meter distance will be used for evaluation of localized construction NO_x and CO impacts.

³ The purpose of SCAQMD's Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as "...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

EXHIBIT 3: SENSITIVE RECEPTOR LOCATIONS



Table 4 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Outputs from the model runs for construction LSTs are provided in Attachment A. As shown in Table 4, emissions resulting from the construction will not exceed the numerical thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related construction-source emissions and no mitigation is required.

TABLE 4: PROJECT LOCALIZED CONSTRUCTION IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Land Grubbing				
Maximum Daily Emissions	22.60	33.50	0.89	0.82
SCAQMD Localized Threshold	126	988	222	105
Threshold Exceeded?	NO	NO	NO	NO
Grading				
Maximum Daily Emissions	20.90	20.40	4.57	2.63
SCAQMD Localized Threshold	126	988	222	105
Threshold Exceeded?	NO	NO	NO	NO
Foundation Construction				
Maximum Daily Emissions	21.90	31.00	0.77	0.70
SCAQMD Localized Threshold	126	988	222	105
Threshold Exceeded?	NO	NO	NO	NO
Substructure Construction				
Maximum Daily Emissions	13.10	14.20	0.43	0.40
SCAQMD Localized Threshold	126	988	222	105
Threshold Exceeded?	NO	NO	NO	NO
Superstructure Construction and Approach Embankment Construction				
Maximum Daily Emissions	32.60	41.80	1.18	1.09
SCAQMD Localized Threshold	126	988	222	105
Threshold Exceeded?	NO	NO	NO	NO

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In December 2022, the SCAQMD released the Final 2022 AQMP (2022 AQMP). The 2022 AQMP continues to evaluate current integrated strategies and control measures to meet the CAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (18). Similar to the 2016 AQMP, the 2022 AQMP incorporates scientific and technological information and planning assumptions, including the 2020-2045 RTP/SCS, a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (19). The Project's consistency with the AQMP will be determined using the 2022 AQMP as discussed below. SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (2020-2045 RTP/SCS), a planning document that supports the integration of land use and transportation to help the region meet the federal metropolitan planning organization (MPO) requirements under the Sustainable communities and Climate Protection Act. The proposed Project would be developed in accordance with all applicable rules and regulations contained in those plans. It should be noted that although the 2024-2050 RTP was released after approval of the 2022 AQMP, the 2022 AQMP is reliant in part upon the general plan land use designations. The proposed Project aims to install a new "all-weather" facility rather than introduce a use that is more intensive than the current operations on site. Furthermore, the Project, as evaluated herein would not exceed the regional or localized air quality significance thresholds.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the 1993 CEQA Handbook (20). These indicators are discussed below.

The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations under this criterion refer to the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded.

As evaluated, the Project's regional and localized construction -source emissions would not exceed applicable regional or localized significance thresholds. Additionally, once the Project is completed, the bridge does not include annual maintenance activities and therefore no operational activities will occur. As such, a less than significant impact is expected.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

The 2022 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in City of Chino General Plan is considered to be consistent with the AQMP.

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As such, when considering that no emissions thresholds will be exceeded, a less than significant impact would result.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

The CAAQS designate the region in which the Project site is located as nonattainment for O₃, PM₁₀, and PM_{2.5} while the NAAQS designates the Project site's region as nonattainment for O₃ and PM_{2.5}.

The SCAQMD has published a report on how to address cumulative impacts from air pollution: White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution (21). In this report the SCAQMD clearly states (Page D-3):

“...the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Therefore, this analysis assumes that individual projects that do not generate construction or operational emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

CONSTRUCTION IMPACTS

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that proposed Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, the proposed Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

OPERATIONAL IMPACTS

As previously stated, once the Project is completed, minimal trips will be needed for annual maintenance. As such, the proposed Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 3

Would the Project expose sensitive receptors to substantial pollutant concentrations?

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during Project construction.

Additionally, the Project will not exceed the SCAQMD localized significance thresholds during operational activity. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations as the result of Project operations.

CO "HOT SPOT" ANALYSIS

A CO hotspot is defined as a localized concentration of CO exceeding the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time the most recent CEQA Air Quality Handbook (1993) was published by SCAQMD, the air basin was designated as non-attainment, requiring projects to perform hotspot analyses to ensure they did not worsen the existing conditions. Over the last two decades, background CO concentrations have been significantly reduced due to regulatory controls on tailpipe emissions, which have culminated in the air basin achieving attainment status for CO.

The 2003 AQMP's findings underscore that CO hotspots are highly unlikely due to the reduced background concentrations and the effectiveness of California's air quality management strategies. The substantial reduction in CO levels from the vehicle fleet and the state's attainment status for CO further diminish the need for detailed microscale hotspot analyses, reinforcing that existing monitoring and regulatory frameworks adequately address potential air quality concerns.

In 2003, the SCAQMD as part of its AQMP development process, prepared modeling to determine the potential for CO Hotspots at the four busiest intersections in the air basin. As summarized in the 2003 AQMP, even at one of the busiest intersections at that time, only 0.7 ppm of CO is attributable to vehicular traffic and the remaining 7.7 ppm were due to ambient background conditions. The 2003 AQMP's findings underscore that CO hotspots are highly unlikely due to the reduced background concentrations and the effectiveness of California's air quality management strategies. The substantial reduction in CO levels from the vehicle fleet and the state's attainment status for CO further diminish the need for detailed microscale hotspot analyses, reinforcing that existing monitoring and regulatory frameworks adequately address potential air quality concerns.

AIR QUALITY IMPACTS – CONSISTENCY WITH THRESHOLD NO. 4

Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance

with the solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required (22).

PROJECT GHG ANALYSIS

CITY OF CHINO CLIMATE ACTION PLAN (CAP)

The City of Chino adopted the 2020-2030 CAP Update on November 17, 2020, which went into effect on January 1, 2021. The 2020-2030 CAP Update considers the previous GHG reduction targets identified in the 2013 CAP and proposes new targets that are consistent with updates in State climate change regulations in order to meet the requirements of SB 32.

The 2020-2030 CAP Update establishes a framework under which future projects would be designed for the purposes of reducing GHG emissions. Although the 2020-2030 CAP Update is designed as a stand-alone GHG policy document, it would be utilized to provide a more comprehensive and detailed framework for land-based policy decisions to reduce GHG emissions from existing and future development. Any future projects proposed pursuant to the 2020-2030 CAP Update would be developed in accordance with General Plan Policies for energy conservation while maximizing efficient use of resources, maintaining a high quality of life, enhancing job opportunities, promoting sustainability, and facilitating access to transportation facilities.

The 2020-2030 CAP Update includes an update to the City's GHG inventory for the year 2016 and sets a target to reduce communitywide GHG emissions by 46% by 2030, which would put the City on a path toward the State's long-term goal to achieve statewide carbon neutrality (zero net emissions) by 2045. GHG reduction measures prescribed in the 2020-2030 CAP Update build upon those adopted under the City's 2013 CAP to ensure that the City meets the reduction targets established pursuant to SB 32 (23).

GHG IMPACTS

STANDARDS OF SIGNIFICANCE

According to the CEQA Guidelines Appendix G thresholds, to determine whether impacts from GHG emissions are significant. Would the project:

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

The evaluation of an impact under CEQA requires measuring data from a project against both existing conditions and a "threshold of significance." For establishing significance thresholds, the Office of Planning and Research's amendments to the CEQA Guidelines Section 15064.7(c) state "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by

experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.”

DISCUSSION ON ESTABLISHMENT OF SIGNIFICANCE THRESHOLDS

The SCAQMD screening-level threshold of 3,000 MTCO₂e/yr is employed to determine if additional analysis of GHG emissions impacts and implementation of GHG emissions mitigation measures is warranted. The SCAQMD 3,000 MTCO₂e/yr threshold is a widely accepted conservative metric; and is used by numerous lead agencies. As noted by the SCAQMD:

“...the [3,000 MTCO₂e/yr] screening-level for stationary sources is based on an emission capture rate of 90 percent for all new or modified project. . . the policy objective of [SCAQMD’s] recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that [SCAQMD] staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 [MMTCO₂e/yr.]). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to [Best Available Control Technology] (BACT) for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility (Guidance Document, pp. 3-2, 3-3).”

Based on the above guidance from the SCAQMD, if a project would emit GHGs totaling less than 3,000 MTCO₂e/yr, the project is not considered a substantial GHG emitter and the GHG impact is less-than-significant. SCAQMD guidance indicates no additional analysis is required and no mitigation need be imposed. On the other hand, if a non-industrial project would emit GHGs in excess of 3,000 MTCO₂e/yr, then the project could be considered a potentially significant GHG emitter, requiring additional analysis and potential mitigation.

PROJECT GHG EMISSIONS

The estimated GHG emissions for the Project are summarized in Table 5. The estimated GHG emission include emissions from Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), and Refrigerants (R). Since the project would not include new operational activity, this analysis considers the GHG emissions from construction for informational purposes. As shown on Table 5, the Project would generate a total of approximately 90.93 MTCO₂e/yr. Detailed operation model outputs are presented in Attachment A.

TABLE 5: TOTAL PROJECT GHG EMISSIONS

Source	Emission (metric tons per year)				
	CO ₂	CH ₄	N ₂ O	R	Total CO ₂ e
Annual construction-related emissions amortized over 30 years	90.10	4.33E-03	2.33E-03	0.01	90.93
Total CO ₂ e (All Sources)	90.93				

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project have the potential to generate direct or indirect GHG emissions that would result in a significant impact on the environment?

The Project would generate an estimated 90.93 MTCO₂e/yr, and would not exceed the applicable threshold of 3,000 MTCO₂e/yr. On this basis, the potential for the Project to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment is considered less-than-significant.

GHG IMPACTS – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Pursuant to Section 15604.4 of the CEQA Guidelines, a lead agency may rely on qualitative analysis or performance-based standards to determine the significance of impacts from GHG emissions (24). As such, the Project's consistency with the 2022 Scoping Plan is discussed below. It should be noted that the Project's consistency with the 2022 Scoping Plan also satisfies consistency with AB 32 since the 2022 Scoping Plan is based on the overall targets established by AB 32 and SB 32. Consistency with the 2008 and 2017 Scoping Plan is not necessary since both of these plans have been superseded by the 2022 Scoping Plan. For reasons outlined herein, the proposed Project would result in a less than significant impact with respect to GHG emissions for GHG Impact #2.

2022 SCOPING PLAN CONSISTENCY

The Project would not impede the State's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. Some of the current transportation sector policies the Project will comply with (through vehicle manufacturer compliance) include: Advanced Clean Cars II, Advanced Clean Trucks, Advanced Clean Fleets, Zero Emission Forklifts, Off-Road Zero-Emission Targeted Manufacturer Rule, Clean Off-Road Fleet Recognition Program, Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation, carbon pricing through the Cap-and-Trade Program, and the Low Carbon Fuel Standard. As such, the Project would be consistent with the 2022 Scoping Plan.

CITY OF CHINO CAP CONSISTENCY

The purpose of the Chino CAP Update is to provide guidance on how to analyze GHG emissions and determine significance during the CEQA review of proposed development projects within the City. Because the Chino CAP Update addresses GHG emissions reductions and is consistent with

the requirements of AB 32, SB 32, and international efforts to reduce GHG emissions, compliance with the CAP Update fulfills the description of mitigation found in the State CEQA Guidelines.

The CAP includes CEQA consistency checklists and reduction policies that apply to residential, commercial, and industrial projects; however, none of these directly address new infrastructure projects like the proposed Project. The Project is not expected to exceed the GHG significance thresholds set by the SCAQMD, which were established to support statewide GHG reduction goals in alignment with AB 32. Furthermore, once completed, the proposed Project will not generate operational GHG emissions. As a result, the Project will not impede or conflict with the GHG-reduction objectives outlined in the CAP.

CONSTRUCTION ACTIVITIES

Construction activities associated with the Project would result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following construction activities:

- Land Grubbing
- Grading
- Foundation Construction
- Substructure Construction
- Superstructure Construction
- Approach Embankment Construction⁴

GRADING ACTIVITIES

Dust is typically a major concern during grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions”. Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). CalEEMod was utilized to calculate fugitive dust emissions resulting from this phase of activity. Project grading activity will require 20,000 cubic yards of cut and 96,000 cubic yards of fill with 76,000 cubic yards net fill/import. The Project site will require an estimated 20,000 cubic yards of cut and 96,000 cubic yards of fill. Our analysis will model a total of 76,000 cubic yards of import. The borrow material will come from the Prado Basin, although the specific borrow location has not yet been determined. As a conservative approach, the CalEEMod defaults transport distance of 20 miles was utilized.

⁴ In CalEEMod, “Linear Paving” refers to the process of laying concrete or asphalt along a linear path, which aligns with the activities involved in both superstructure and approach embankment construction. However, CalEEMod permits only a single paving phase to be modeled for linear projects. Since both superstructure and approach embankment construction involve concrete and asphalt paving and are expected to occur concurrently, these activities are modeled together within the same phase.

ON-ROAD TRIPS

Construction generates on-road vehicle emissions from vehicle usage for workers, vendors, and haul trucks commuting to and from the site. Worker trips are based on information provided by the Project Team while vendor and hauling trips are based on CalEEMod defaults.

PROJECT ENERGY ANALYSIS

ENERGY IMPACTS

STANDARDS OF SIGNIFICANCE

Appendix F of the State CEQA Guidelines (25), states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas, and oil; and
- Increasing reliance on renewable energy sources.

According to Appendix F, the analysis should include a description of energy conservation measures included as part of the project and should consider whether a project would result in inefficient, wasteful and unnecessary consumption of energy. In compliance with Appendix F and Appendix G of the State CEQA Guidelines (26), this report analyzes the Project's anticipated energy use during construction and operations to determine if the Project would:

- **Threshold 1:** Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- **Threshold 2:** Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

EMISSION FACTORS MODEL

Vehicle fuel efficiencies for light-duty-auto vehicles (LDA), light-duty-trucks (LDT1), and light-duty-trucks (LDT2) were estimated using information generated within the 2021 version of the EMFAC developed by the California Air Resources Board (CARB). EMFAC2021 is a mathematical model that was developed to calculate emission rates, fuel consumption, and VMT from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources (27). EMFAC2021 was run for the LDA, LDT1, and LDT2 vehicle class within the Riverside South-Coast sub-area for the 2025 calendar year. Data from EMFAC2021 is shown in Attachment B.

CONSTRUCTION ENERGY DEMANDS

CONSTRUCTION EQUIPMENT FUEL ESTIMATES

As presented in Table 6, Project construction activities would consume an estimated 233,934 gallons of diesel fuel. Project construction would represent a "single-event" diesel fuel demand

and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 6: PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTIONS ESTIMATES (1 OF 2)

Activity	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption
Clearing and Grubbing	5	Rubber Tired Loaders	150	4	8	0.36	1,728	467
		Cranes	367	1	8	0.29	851	230
		Off-Highway Trucks	376	6	8	0.38	6,858	1,854
Grading	10	Rubber Tired Dozers	367	2	8	0.40	2,349	1,270
		Graders	148	1	8	0.41	485	262
		Off-Highway Trucks	376	1	8	0.38	1,143	618
		Bore/Drill Rigs	83	1	8	0.50	332	2,046
		Cranes	367	2	8	0.29	1,703	10,493
		Other Construction Equipment	82	1	8	0.42	276	1,698
		Other Material Handling Equipment	93	6	8	0.40	1,786	11,003
Foundation Construction	114	Skid Steer Loaders	71	1	8	0.37	210	1,295
		Forklifts	82	1	8	0.20	131	808
		Aerial Lifts	46	1	8	0.31	114	703
		Generator Sets	14	1	8	0.74	83	511
		Off-Highway Trucks	376	1	8	0.38	1,143	7,044
		Cranes	367	2	8	0.29	1,703	17,489
		Aerial Lifts	46	4	8	0.31	456	4,687
		Forklifts	82	2	8	0.20	262	2,695
		Off-Highway Trucks	376	1	8	0.38	1,143	11,739
Substructure Construction	190							

TABLE 6: PROJECT CONSTRUCTION EQUIPMENT FUEL CONSUMPTIONS ESTIMATES (2 OF 2)

Activity	Duration (Days)	Equipment	HP Rating	Quantity	Usage Hours	Load Factor	HP-hrs/day	Total Fuel Consumption
Superstructure and Approach Embankment Construction	242	Cranes	367	1	8	0.29	851	11,138
		Aerial Lifts	46	4	8	0.31	456	5,969
		Forklifts	82	4	8	0.20	525	6,865
		Off-Highway Trucks	376	8	8	0.38	9,144	119,618
		Rollers	36	1	8	0.38	109	1,432
		Rubber Tired Loaders	150	1	8	0.36	432	5,651
		Graders	148	1	8	0.41	485	6,350
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION								233,934

CONSTRUCTION WORKER FUEL ESTIMATES

With respect to estimated VMT, the construction worker trips would generate an estimated 360,972 VMT. Based on CalEEMod methodology, it is assumed that 50% of all vendor trips are from LDA, 25% are from LDT1, and 25% are from LDT2. Data regarding Project related construction worker trips were based on CalEEMod defaults for the land use type and project location which are also utilized within the air quality assessment and CalEEMod outputs contained herein.

As shown on Table 7, it is estimated that 12,596 gallons of fuel will be consumed related to construction worker trips during full construction of the proposed Project. Project construction worker trips would represent a “single-event” gasoline fuel demand and would not require on-going or permanent commitment of fuel resources for this purpose.

CONSTRUCTION VENDOR/HAULING FUEL ESTIMATES

With respect to estimated VMT, the construction vendor trips would generate an estimated 190,204 VMT. It is assumed that 50% of all vendor trips are from medium-heavy duty trucks (MHDT), 50% of vendor trips are from heavy-heavy duty trucks (HHDT), and 100% of hauling trips are from HHDTs. As shown on Table 8, it is estimated that 30,339 gallons of fuel will be consumed related to construction vendor trips (medium duty trucks) during full construction of the Project. Project construction vendor trips would represent a “single- event” diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

TABLE 7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (1 OF 2)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2027	LDA						
	Clearing and Grubbing	5	10	18.5	925	31.62	29
	Grading	10	5	18.5	925	31.62	29
	Foundation Construction	114	6	18.5	12,654	31.62	400
	Substructure Construction	152	30	18.5	84,360	31.62	2,668
	Superstructure and Approach Embankment Construction	152	13	18.5	36,556	31.62	1,156
	LDT1						
	Clearing and Grubbing	5	5	18.5	463	25.98	18
	Grading	10	3	18.5	555	25.98	21
	Foundation Construction	114	3	18.5	6,327	25.98	244
	Substructure Construction	152	15	18.5	42,180	25.98	1,623
	Superstructure and Approach Embankment Construction	152	7	18.5	19,684	25.98	758
	LDT2						
	Clearing and Grubbing	5	5	18.5	463	26.11	18
	Grading	10	3	18.5	555	26.11	21
	Foundation Construction	114	3	18.5	6,327	26.11	242
	Substructure Construction	152	15	18.5	42,180	26.11	1,616
	Superstructure and Approach Embankment Construction	152	7	18.5	19,684	26.11	754
2028	LDA						
	Substructure Construction	38	30	18.5	21,090	32.21	655
	Superstructure and Approach Embankment Construction	90	13	18.5	21,645	32.21	672

TABLE 7: CONSTRUCTION WORKER FUEL CONSUMPTION ESTIMATES (2 OF 2)

Year	Construction Activity	Duration (Days)	Worker Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2028	LDT1						
	Substructure Construction	38	15	18.5	10,545	26.47	398
	Superstructure and Approach Embankment Construction	90	7	18.5	11,655	26.47	440
	LDT2						
	Substructure Construction	38	15	18.5	10,545	26.65	396
	Superstructure and Approach Embankment Construction	90	7	18.5	11,655	26.65	437
TOTAL CONSTRUCTION WORKER FUEL CONSUMPTION							12,596

TABLE 8: CONSTRUCTION VENDOR/HAULING FUEL CONSUMPTION ESTIMATES

Year	Construction Activity	Duration (Days)	Vendor/Hauling Trips/Day	Trip Length (miles)	VMT	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
2027	MHDT						
	Grading	10	1	10.2	102	8.47	12
	HHDT (Vendor)						
	Grading	10	1	10.2	102	6.27	16
	HHDT (Hauling)						
	Grading	10	950	20	190,000	6.27	30,311
TOTAL CONSTRUCTION VENDOR/HAULING FUEL CONSUMPTION							30,339

CONSTRUCTION ENERGY DEMANDS SUMMARY

Construction equipment use of fuel would not be atypical for the type of construction proposed because there are no aspects of the Project's proposed construction process that are unusual or energy-intensive, and Project construction equipment would conform to the applicable CARB emissions standards, acting to promote equipment fuel efficiencies.

CCR Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than 5 minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Best Available Control Measures (BACMs) inform construction equipment operators of this requirement.

With regard to construction worker trips, the 2023 Integrative Energy Policy Report (IEPR) released by the California Energy Commission (CEC) has shown that fuel efficiencies are getting better within on and off-road vehicle engines due to more stringent government requirements. As supported by the preceding discussions, Project construction energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

ENERGY IMPACT – CONSISTENCY WITH THRESHOLD NO. 1

Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

A significant impact would occur if the proposed Project would result in the inefficient, wasteful, or unnecessary use of energy.

CONSTRUCTION

Based on CalEEMod estimations within the modeling output files used to estimate GHG emissions associated with the Project, construction-related vehicle trips would result in approximately 551,176 VMT from worker, vendor, and hauling trips and would consume an estimated 42,935 gallons of gasoline and diesel combined. Additionally, on-site construction equipment would consume an estimated 233,934 gallons of diesel fuel. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California Code of Regulations, Title 13, Sections 2449 and 2485, limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. Additionally, given the cost of fuel, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Due to the temporary nature of construction and the financial incentives for developers and contractors to use energy-consuming resources in an efficient manner, the construction phase of the proposed Project would not result in wasteful, inefficient, and unnecessary consumption of energy. Therefore, the construction-related impacts related to electricity and fuel consumption would be less than significant.

OPERATION

As previously stated, once the Project is completed, the channel does not include annual maintenance activities and therefore no operational activities will occur. Therefore, the operational-related impacts related to electricity and fuel consumption would be less than significant.

ENERGY IMPACT – CONSISTENCY WITH THRESHOLD NO. 2

Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

A significant impact would occur if the proposed Project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

CONSTRUCTION

As discussed previously, the proposed project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, construction equipment, and the use of electricity for temporary buildings, lighting, and other sources. California Code of Regulations Title 13, Sections 2449 and 2485, limit idling from both on- road and off-road diesel-powered equipment and are enforced by the ARB. The proposed project would comply with these regulations. There are no policies at the local level applicable to energy conservation specific to the construction phase. Thus, it is anticipated that construction of the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use or increasing the use of renewable energy. Therefore, construction-related energy efficiency and renewable energy standards consistency impacts would be less than significant.

OPERATION

As previously stated, once the Project is completed, minimal trips will be needed for annual maintenance. As such, the operational-related impacts related to electricity and fuel consumption would be less than significant.

CONCLUSION

Results of the assessment indicate that the Project is not anticipated to result in any new impacts associated with air quality, GHG, and energy.

REFERENCES

1. **South Coast Air Quality Management District.** Southern California Air Basins. [Online] <https://www.arb.ca.gov/msprog/onroad/porttruck/maps/scabc7map.pdf>.
2. **United States Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. <https://www.epa.gov/environmental-topics/air-topics>.
3. **Environmental Protection Agency.** Air Pollution and the Clean Air Act. [Online] <http://www.epa.gov/air/caa/>.
4. **United States Environmental Protection Agency.** 1990 Clean Air Act Amendment Summary: Title I. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-i>.
5. —. 1990 Clean Air Act Amendment Summary: Title II. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-ii>.
6. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: April 16, 2018.] <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.
7. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. <https://www.epa.gov/environmental-topics/air-topics>.
8. **Southern California Association of Governments.** 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. [Online] April 2016. <http://scagrtppscs.net/Documents/2016/final/f2016RTPSCS.pdf>.
9. **South Coast Air Quality Management District.** RULE 403. FUGITIVE DUST. [Online] <https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4>.
10. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] May 2023. www.caleemod.com.
11. **State of California.** 2020 CEQA California Environmental Quality Act. 2020.
12. **South Coast Air Quality Management District (SCAQMD).** SCAQMD Air Quality Significance Thresholds. [Online] <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf>.
13. **South Coast Air Quality Management District.** Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. [Online] <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf>.
14. **California Air Pollution Control Officers Association (CAPCOA).** Appendix A: Calculation Details for CalEEMod. *CalEEMod*. [Online] October 2017. http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6.
15. **ICF in collaboration with Sacramento Metropolitan Air Quality Management District, Fehr & .** CalEEMod User Guide Version 2022.1. [Online] https://caleemod.com/documents/user-guide/CalEEMod_User_Guide_v2022.1.pdf.
16. **State of California.** 2020 CEQA California Environmental Quality Act. 2020.

17. **South Coast Air Quality Management District.** *Localized Significance Thresholds Methodology*. s.l. : South Coast Air Quality Management District, 2003.
18. —. Final 2016 Air Quality Management Plan (AQMP). [Online] March 2017.
<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=11>.
19. **Southern California Association of Governments.** 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. [Online] September 2020.
https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176.
20. **South coast Air Quality Management District.** *CEQA Air Quality Handbook (1993)*. 1993.
21. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. http://www.aqmd.gov/rules/ciwg/final_white_paper.pdf.
22. **South Coast Air Quality Management District.** RULE 402 NUISANCE. [Online]
<http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf>.
23. **City of Chino Final Climate Action Plan Update 2020- 2035.** City of Chino Climate Action Plan Update. [Online] 2020. <https://cityofchino.org/206/Climate-Action-Plan-CAP>.
24. **California Natural Resources Agency.** *2023 California Environmental Quality Act (CEQA) Statute and Guidelines*. s.l. : Association of Environmental Professionals, 2023.
25. **State of California.** *California Environmental Quality Act Guideline, California Public Resources Code, Title 14, Division 6, Chapter 3,*.
26. **Association of Environmental Professionals.** *2019 CEQA California Environmental Quality Act*. 2019.
27. **California Department of Transportation.** EMFAC Software. [Online]
<http://www.dot.ca.gov/hq/env/air/pages/emfac.htm>.

ATTACHMENT A

CALEEMOD PROPOSED PROJECT EMISSIONS MODEL OUTPUTS

Chino Euclid Bridge Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Clearing and Grubbing (2027) - Unmitigated
 - 3.3. Grading (2027) - Unmitigated
 - 3.5. Foundation Construction (2027) - Unmitigated
 - 3.7. Substructure Construction (2027) - Unmitigated
 - 3.9. Substructure Construction (2028) - Unmitigated
 - 3.11. Superstructure Construction and Approach Embankment Construction (2027) - Unmitigated
 - 3.13. Superstructure Construction and Approach Embankment Construction (2028) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Chino Euclid Bridge
Construction Start Date	4/5/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	18.8
Location	33.939688172485006, -117.65461947198762
County	San Bernardino-South Coast
City	Chino
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5206
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Bridge/Overpass Construction	0.45	Mile	20.5	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.9	9.21	94.3	93.6	0.48	2.38	21.4	23.2	2.19	6.64	8.33	—	68,005	68,005	6.62	10.4	121	71,383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.03	6.76	46.1	60.3	0.17	1.61	1.11	2.72	1.48	0.26	1.74	—	19,330	19,330	0.76	0.19	0.09	19,405
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.58	3.71	29.0	37.2	0.10	0.97	1.09	2.06	0.89	0.30	1.19	—	12,197	12,197	0.59	0.38	2.15	12,328
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.84	0.68	5.29	6.79	0.02	0.18	0.20	0.38	0.16	0.05	0.22	—	2,019	2,019	0.10	0.06	0.36	2,041

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	10.9	9.21	94.3	93.6	0.48	2.38	21.4	23.2	2.19	6.64	8.33	—	68,005	68,005	6.62	10.4	121	71,383

2028	6.04	5.11	30.5	45.4	0.13	1.08	0.78	1.86	0.99	0.18	1.18	—	14,870	14,870	0.58	0.14	2.29	14,929
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	8.03	6.76	46.1	60.3	0.17	1.61	1.11	2.72	1.48	0.26	1.74	—	19,330	19,330	0.76	0.19	0.09	19,405
2028	7.82	6.61	42.9	59.9	0.17	1.47	1.11	2.58	1.35	0.26	1.62	—	19,319	19,319	0.76	0.19	0.08	19,394
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	4.58	3.71	29.0	37.2	0.10	0.97	1.09	2.06	0.89	0.30	1.19	—	12,197	12,197	0.59	0.38	2.15	12,328
2028	1.67	1.42	8.84	12.6	0.04	0.31	0.23	0.53	0.28	0.05	0.34	—	4,130	4,130	0.16	0.04	0.29	4,147
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.84	0.68	5.29	6.79	0.02	0.18	0.20	0.38	0.16	0.05	0.22	—	2,019	2,019	0.10	0.06	0.36	2,041
2028	0.31	0.26	1.61	2.31	0.01	0.06	0.04	0.10	0.05	0.01	0.06	—	684	684	0.03	0.01	0.05	687

3. Construction Emissions Details

3.1. Clearing and Grubbing (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.52	3.80	22.6	33.5	0.10	0.89	—	0.89	0.82	—	0.82	—	10,995	10,995	0.45	0.09	—	11,033
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.06	0.05	0.31	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	151	151	0.01	< 0.005	—	151
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.9	24.9	< 0.005	< 0.005	—	25.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.07	1.34	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	< 0.005	0.01	0.85	274
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	0.01	3.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.02	2.54	20.9	20.4	0.04	0.92	—	0.92	0.85	—	0.85	—	4,659	4,659	0.19	0.04	—	4,675
Dust From Material Movement	—	—	—	—	—	—	3.65	3.65	—	1.78	1.78	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.57	0.56	< 0.005	0.03	—	0.03	0.02	—	0.02	—	128	128	0.01	< 0.005	—	128
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.1	21.1	< 0.005	< 0.005	—	21.2
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.67	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	< 0.005	< 0.005	0.43	137
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.8	29.8	< 0.005	< 0.005	0.07	31.2
Hauling	7.46	0.98	73.4	41.6	0.44	0.84	17.6	18.5	0.84	4.82	5.66	—	63,181	63,181	6.43	10.3	120	66,539
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	0.01	3.49

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	0.20	0.03	2.11	1.14	0.01	0.02	0.48	0.50	0.02	0.13	0.15	—	1,731	1,731	0.18	0.28	1.43	1,821
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.58
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	0.04	< 0.005	0.38	0.21	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	287	287	0.03	0.05	0.24	302

3.5. Foundation Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.83	2.38	21.9	31.0	0.06	0.77	—	0.77	0.70	—	0.70	—	6,747	6,747	0.27	0.05	—	6,770
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.84	9.70	0.02	0.24	—	0.24	0.22	—	0.22	—	2,107	2,107	0.09	0.02	—	2,115

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.25	1.77	< 0.005	0.04	—	0.04	0.04	—	0.04	—	349	349	0.01	< 0.005	—	350
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.80	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.51	165
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	47.2	47.2	< 0.005	< 0.005	0.07	47.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.81	7.81	< 0.005	< 0.005	0.01	7.91

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Substructure Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.46	13.1	14.2	0.04	0.43	—	0.43	0.40	—	0.40	—	4,209	4,209	0.17	0.03	—	4,223
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.46	13.1	14.2	0.04	0.43	—	0.43	0.40	—	0.40	—	4,209	4,209	0.17	0.03	—	4,223
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.72	0.61	5.45	5.91	0.02	0.18	—	0.18	0.16	—	0.16	—	1,746	1,746	0.07	0.01	—	1,752
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.99	1.08	< 0.005	0.03	—	0.03	0.03	—	0.03	—	289	289	0.01	< 0.005	—	290
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.09	1.68	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	338	338	< 0.005	0.01	1.06	343
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.26	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	310	310	< 0.005	0.01	0.03	314
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.55	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	130	130	< 0.005	< 0.005	0.19	132

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.6	21.6	< 0.005	< 0.005	0.03	21.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Substructure Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.69	1.42	12.3	14.2	0.04	0.39	—	0.39	0.36	—	0.36	—	4,210	4,210	0.17	0.03	—	4,225
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.30	1.50	< 0.005	0.04	—	0.04	0.04	—	0.04	—	445	445	0.02	< 0.005	—	446

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.24	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	73.7	73.7	< 0.005	< 0.005	—	73.9
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.17	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	304	304	< 0.005	0.01	0.02	308
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.6	32.6	< 0.005	< 0.005	0.04	33.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.40	5.40	< 0.005	< 0.005	0.01	5.47

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Superstructure Construction and Approach Embankment Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.92	4.97	32.6	41.8	0.13	1.18	—	1.18	1.09	—	1.09	—	14,067	14,067	0.57	0.11	—	14,115
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.92	4.97	32.6	41.8	0.13	1.18	—	1.18	1.09	—	1.09	—	14,067	14,067	0.57	0.11	—	14,115
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.46	2.06	13.5	17.3	0.05	0.49	—	0.49	0.45	—	0.45	—	5,836	5,836	0.24	0.05	—	5,856
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.45	0.38	2.47	3.17	0.01	0.09	—	0.09	0.08	—	0.08	—	966	966	0.04	0.01	—	970
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.25	0.21	4.02	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	812	812	0.01	0.03	2.55	823
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.23	0.24	3.03	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	744	744	0.01	0.03	0.07	753
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.11	1.32	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	313	313	< 0.005	0.01	0.46	317
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	51.8	51.8	< 0.005	< 0.005	0.08	52.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Superstructure Construction and Approach Embankment Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	5.80	4.87	30.3	41.7	0.13	1.08	—	1.08	0.99	—	0.99	—	14,074	14,074	0.57	0.11	—	14,122
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	5.80	4.87	30.3	41.7	0.13	1.08	—	1.08	0.99	—	0.99	—	14,074	14,074	0.57	0.11	—	14,122
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	1.43	1.20	7.47	10.3	0.03	0.27	—	0.27	0.24	—	0.24	—	3,470	3,470	0.14	0.03	—	3,482
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.26	0.22	1.36	1.88	0.01	0.05	—	0.05	0.04	—	0.04	—	575	575	0.02	< 0.005	—	577
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.24	0.24	0.21	3.72	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	796	796	0.01	0.03	2.29	807
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.21	2.80	0.00	0.00	0.78	0.78	0.00	0.18	0.18	—	730	730	0.01	0.03	0.06	739
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.73	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	183	183	< 0.005	0.01	0.24	185
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.2	30.2	< 0.005	< 0.005	0.04	30.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetati on	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Clearing and Grubbing	Linear, Grubbing & Land Clearing	4/5/2027	4/9/2027	5.00	5.00	—
Grading	Linear, Grading & Excavation	4/12/2027	4/23/2027	5.00	10.0	—
Foundation Construction	Linear, Drainage, Utilities, & Sub-Grade	4/26/2027	9/30/2027	5.00	114	—
Substructure Construction	Linear, Drainage, Utilities, & Sub-Grade	6/3/2027	2/23/2028	5.00	190	—
Superstructure Construction and Approach Embankment Construction	Linear, Paving	6/3/2027	5/5/2028	5.00	242	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Clearing and Grubbing	Rubber Tired Loaders	Diesel	Average	4.00	8.00	150	0.36
Clearing and Grubbing	Cranes	Diesel	Average	1.00	8.00	367	0.29
Clearing and Grubbing	Off-Highway Trucks	Diesel	Average	6.00	8.00	376	0.38
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Foundation Construction	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Foundation Construction	Cranes	Diesel	Average	2.00	8.00	367	0.29
Foundation Construction	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42

Foundation Construction	Other Material Handling Equipment	Diesel	Average	6.00	8.00	93.0	0.40
Foundation Construction	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Foundation Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Foundation Construction	Aerial Lifts	Diesel	Average	1.00	8.00	46.0	0.31
Foundation Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Foundation Construction	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Substructure Construction	Cranes	Diesel	Average	2.00	8.00	367	0.29
Substructure Construction	Aerial Lifts	Diesel	Average	4.00	8.00	46.0	0.31
Substructure Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Substructure Construction	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Superstructure Construction and Approach Embankment Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Superstructure Construction and Approach Embankment Construction	Aerial Lifts	Diesel	Average	4.00	8.00	46.0	0.31
Superstructure Construction and Approach Embankment Construction	Forklifts	Diesel	Average	4.00	8.00	82.0	0.20

Superstructure Construction and Approach Embankment Construction	Off-Highway Trucks	Diesel	Average	8.00	8.00	376	0.38
Superstructure Construction and Approach Embankment Construction	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Superstructure Construction and Approach Embankment Construction	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Superstructure Construction and Approach Embankment Construction	Graders	Diesel	Average	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and Grubbing	—	—	—	—
Clearing and Grubbing	Worker	20.0	18.5	LDA,LDT1,LDT2
Clearing and Grubbing	Vendor	0.00	10.2	HHDT,MHDT
Clearing and Grubbing	Hauling	0.00	20.0	HHDT
Clearing and Grubbing	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	950	20.0	HHDT

Grading	Onsite truck	—	—	HHDT
Foundation Construction	—	—	—	—
Foundation Construction	Worker	12.0	18.5	LDA,LDT1,LDT2
Foundation Construction	Vendor	0.00	10.2	HHDT,MHDT
Foundation Construction	Hauling	0.00	20.0	HHDT
Foundation Construction	Onsite truck	—	—	HHDT
Superstructure Construction and Approach Embankment Construction	—	—	—	—
Superstructure Construction and Approach Embankment Construction	Worker	60.0	18.5	LDA,LDT1,LDT2
Superstructure Construction and Approach Embankment Construction	Vendor	0.00	10.2	HHDT,MHDT
Superstructure Construction and Approach Embankment Construction	Hauling	0.00	20.0	HHDT
Superstructure Construction and Approach Embankment Construction	Onsite truck	—	—	HHDT
Substructure Construction	—	—	—	—
Substructure Construction	Worker	25.0	18.5	LDA,LDT1,LDT2
Substructure Construction	Vendor	0.00	10.2	HHDT,MHDT
Substructure Construction	Hauling	0.00	20.0	HHDT
Substructure Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Clearing and Grubbing	—	—	20.5	0.00	—
Grading	76,000	—	20.5	0.00	—
Foundation Construction	—	—	20.5	0.00	—
Substructure Construction	—	—	20.5	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Bridge/Overpass Construction	20.5	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	532	0.03	< 0.005
2028	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
-----------	--------	------------------------------	------------------------------

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	17.8	annual days of extreme heat
Extreme Precipitation	3.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	9.13	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	72.8
AQ-PM	91.2
AQ-DPM	74.4
Drinking Water	99.2
Lead Risk Housing	7.81
Pesticides	79.6
Toxic Releases	64.9
Traffic	71.3
Effect Indicators	—
CleanUp Sites	53.4
Groundwater	44.8
Haz Waste Facilities/Generators	90.3
Impaired Water Bodies	58.7
Solid Waste	80.1
Sensitive Population	—
Asthma	16.3

Cardio-vascular	40.9
Low Birth Weights	49.9
Socioeconomic Factor Indicators	—
Education	23.7
Housing	14.2
Linguistic	58.6
Poverty	28.4
Unemployment	0.47

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	80.70062877
Employed	93.12203259
Median HI	90.26049018
Education	—
Bachelor's or higher	84.51174131
High school enrollment	10.47093545
Preschool enrollment	26.78044399
Transportation	—
Auto Access	59.70742974
Active commuting	1.039394328
Social	—
2-parent households	63.51854228
Voting	68.83100218
Neighborhood	—
Alcohol availability	67.98408828

Park access	81.35506224
Retail density	29.462338
Supermarket access	29.26985756
Tree canopy	17.3232388
Housing	—
Homeownership	87.19363531
Housing habitability	48.54356474
Low-inc homeowner severe housing cost burden	92.10830232
Low-inc renter severe housing cost burden	13.83292699
Uncrowded housing	85.268831
Health Outcomes	—
Insured adults	50.62235339
Arthritis	97.3
Asthma ER Admissions	90.5
High Blood Pressure	97.3
Cancer (excluding skin)	77.2
Asthma	97.7
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	99.1
Diagnosed Diabetes	95.7
Life Expectancy at Birth	47.1
Cognitively Disabled	52.2
Physically Disabled	50.9
Heart Attack ER Admissions	72.6
Mental Health Not Good	93.4
Chronic Kidney Disease	97.1
Obesity	92.0
Pedestrian Injuries	19.6

Physical Health Not Good	98.2
Stroke	96.9
Health Risk Behaviors	—
Binge Drinking	4.0
Current Smoker	91.5
No Leisure Time for Physical Activity	95.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	36.4
Elderly	91.2
English Speaking	63.3
Foreign-born	59.8
Outdoor Workers	91.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	72.3
Traffic Density	51.4
Traffic Access	23.0
Other Indices	—
Hardship	8.8
Other Decision Support	—
2016 Voting	82.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	52.0
Healthy Places Index Score for Project Location (b)	71.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction schedule based on information provided by the Team
Construction: Off-Road Equipment	Construction equipment based on information provided by the Team
Construction: Trips and VMT	Trips are based on information provided by the Team

ATTACHMENT B
EMFAC2021

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: San Bernardino (SC)
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
San Bernardino (SC)	2027	HHDT	Aggregate	Aggregate	Gasoline	2.031197481	51811.4182	11.59279434	11592.79434	101256447.3	51811.4182	634716604	6.27	HHDT
San Bernardino (SC)	2027	HHDT	Aggregate	Aggregate	Diesel	15410.14317	580722688.6	92913.71423	92913714.23		580722688.6			HHDT
San Bernardino (SC)	2027	HHDT	Aggregate	Aggregate	Natural Gas	2715.575882	53942103.91	8331.140274	8331140.274		53942103.91			HHDT
San Bernardino (SC)	2027	LDA	Aggregate	Aggregate	Gasoline	455364.3713	6866310364	217260.2123	217260212.3	217488987.5	6866310364	6876476861	31.62	LDA
San Bernardino (SC)	2027	LDA	Aggregate	Aggregate	Diesel	838.6675897	10166496.33	228.7752292	228775.2292		10166496.33			LDA
San Bernardino (SC)	2027	LDT1	Aggregate	Aggregate	Gasoline	38336.73013	464423847	17875.16354	17875163.54	17876056.96	464423847	464446463.7	25.98	LDT1
San Bernardino (SC)	2027	LDT1	Aggregate	Aggregate	Diesel	4.439852634	22616.67065	0.893424783	893.4247829		22616.67065			LDT1
San Bernardino (SC)	2027	LDT2	Aggregate	Aggregate	Gasoline	207676.4312	2962954848	113596.7444	113596744.4	113868369.2	2962954848	2972554355	26.11	LDT2
San Bernardino (SC)	2027	LDT2	Aggregate	Aggregate	Diesel	630.9551959	9599506.565	271.624772	271624.772		9599506.565			LDT2
San Bernardino (SC)	2027	LHDT1	Aggregate	Aggregate	Gasoline	16631.76323	204149161.8	14058.00996	14058009.96	20787965.15	204149161.8	344015080.9	16.55	LHDT1
San Bernardino (SC)	2027	LHDT1	Aggregate	Aggregate	Diesel	11353.59669	139865919	6729.955191	6729955.191		139865919			LHDT1
San Bernardino (SC)	2027	LHDT2	Aggregate	Aggregate	Gasoline	2701.097559	30903906.04	2446.203313	2446203.313	5951570.308	30903906.04	92194745.51	15.49	LHDT2
San Bernardino (SC)	2027	LHDT2	Aggregate	Aggregate	Diesel	4973.210606	61290839.47	3505.366995	3505366.995		61290839.47			LHDT2
San Bernardino (SC)	2027	MCY	Aggregate	Aggregate	Gasoline	20938.59567	42574983.86	1003.016524	1003016.524	1003016.524	42574983.86	42574983.86	42.45	MCY
San Bernardino (SC)	2027	MDV	Aggregate	Aggregate	Gasoline	147488.8393	2028956468	96179.26132	96179261.32	97201674.54	2028956468	2054696307	21.14	MDV
San Bernardino (SC)	2027	MDV	Aggregate	Aggregate	Diesel	1888.455182	25739839.48	1022.413211	1022413.211		25739839.48			MDV
San Bernardino (SC)	2027	MH	Aggregate	Aggregate	Gasoline	2916.368599	8416091.807	1723.355295	1723355.295	2091888.211	8416091.807	12173869.05	5.82	MH
San Bernardino (SC)	2027	MH	Aggregate	Aggregate	Diesel	1309.206187	3757777.239	368.5329159	368532.9159		3757777.239			MH
San Bernardino (SC)	2027	MHDT	Aggregate	Aggregate	Gasoline	1363.931373	24100029.71	4479.228797	4479228.797	27942653.13	24100029.71	236742915.1	8.47	MHDT
San Bernardino (SC)	2027	MHDT	Aggregate	Aggregate	Diesel	16024.85269	209353541.2	23082.26798	23082267.98		209353541.2			MHDT
San Bernardino (SC)	2027	MHDT	Aggregate	Aggregate	Natural Gas	231.558042	3289344.235	381.1563585	381156.3585		3289344.235			MHDT
San Bernardino (SC)	2027	OBUS	Aggregate	Aggregate	Gasoline	338.4979609	4473073.378	852.3105851	852310.5851	1512409.391	4473073.378	9597062.014	6.35	OBUS
San Bernardino (SC)	2027	OBUS	Aggregate	Aggregate	Diesel	224.28968	4468269.526	587.8012418	587801.2418		4468269.526			OBUS
San Bernardino (SC)	2027	OBUS	Aggregate	Aggregate	Natural Gas	38.43104481	655719.1104	72.29756434	72297.56434		655719.1104			OBUS
San Bernardino (SC)	2027	SBUS	Aggregate	Aggregate	Gasoline	305.3091837	4680209.166	517.9916576	517991.6576	1623052.039	4680209.166	10417425.01	6.42	SBUS
San Bernardino (SC)	2027	SBUS	Aggregate	Aggregate	Diesel	342.2196973	2276621.74	306.601114	306601.114		2276621.74			SBUS
San Bernardino (SC)	2027	SBUS	Aggregate	Aggregate	Natural Gas	435.6655597	3460594.1	798.4592676	798459.2676		3460594.1			SBUS
San Bernardino (SC)	2027	UBUS	Aggregate	Aggregate	Gasoline	55.04919487	1728357.044	133.9970605	133997.0605	2377797.585	1728357.044	11709064.07	4.92	UBUS
San Bernardino (SC)	2027	UBUS	Aggregate	Aggregate	Diesel	4.529432466	146321.6342	14.20938779	14209.38779		146321.6342			UBUS
San Bernardino (SC)	2027	UBUS	Aggregate	Aggregate	Natural Gas	223.133143	9834385.387	2229.591136	2229591.136		9834385.387			UBUS

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: San Bernardino (SC)
Calendar Year: 2028
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Fuel_Consumption	Total Fuel	VMT	Total VMT	Miles per Gallon	Vehicle Class
San Bernardino (SC)	2028	HHDT	Aggregate	Aggregate	Gasoline	1.780647909	52285.45474	11.40352958	11403.52958	101193310.1	52285.45474	644106774.3	6.37	HHDT
San Bernardino (SC)	2028	HHDT	Aggregate	Aggregate	Diesel	15679.98359	589308269.2	92815.25713	92815257.13		589308269.2			HHDT
San Bernardino (SC)	2028	HHDT	Aggregate	Aggregate	Natural Gas	2769.619615	54746219.65	8366.649401	8366649.401		54746219.65			HHDT
San Bernardino (SC)	2028	LDA	Aggregate	Aggregate	Gasoline	454722.5927	6839662252	212397.5176	212397517.6	212603931.4	6839662252	6848967167	32.21	LDA
San Bernardino (SC)	2028	LDA	Aggregate	Aggregate	Diesel	767.4467464	9304914.472	206.4138219	206413.8219		9304914.472			LDA
San Bernardino (SC)	2028	LDT1	Aggregate	Aggregate	Gasoline	37700.23318	457929310.4	17298.47768	17298477.68	17299047.75	457929310.4	457944245.6	26.47	LDT1
San Bernardino (SC)	2028	LDT1	Aggregate	Aggregate	Diesel	2.821964723	14935.24769	0.570070987	570.0709867		14935.24769			LDT1
San Bernardino (SC)	2028	LDT2	Aggregate	Aggregate	Gasoline	212758.1402	3027028127	113687.0703	113687070.3	113966593.4	3027028127	3037071813	26.65	LDT2
San Bernardino (SC)	2028	LDT2	Aggregate	Aggregate	Diesel	665.8961422	10043685.43	279.5230556	279523.0556		10043685.43			LDT2
San Bernardino (SC)	2028	LHDT1	Aggregate	Aggregate	Gasoline	16459.97705	201823486.1	13638.09896	13638098.96	20256944.33	201823486.1	339855299.4	16.78	LHDT1
San Bernardino (SC)	2028	LHDT1	Aggregate	Aggregate	Diesel	11288.52429	138031813.3	6618.845378	6618845.378		138031813.3			LHDT1
San Bernardino (SC)	2028	LHDT2	Aggregate	Aggregate	Gasoline	2638.326704	29986642.3	2338.206686	2338206.686	5802847.766	29986642.3	90892766.59	15.66	LHDT2
San Bernardino (SC)	2028	LHDT2	Aggregate	Aggregate	Diesel	4995.292971	60906124.29	3464.64108	3464641.08		60906124.29			LHDT2
San Bernardino (SC)	2028	MCY	Aggregate	Aggregate	Gasoline	20989.54353	42483277.39	997.407436	997407.436	997407.436	42483277.39	42483277.39	42.59	MCY
San Bernardino (SC)	2028	MDV	Aggregate	Aggregate	Gasoline	147888.3135	2033812913	94369.32701	94369327.01	95358819.81	2033812913	2059204622	21.59	MDV
San Bernardino (SC)	2028	MDV	Aggregate	Aggregate	Diesel	1872.670495	25391709.41	989.4928019	989492.8019		25391709.41			MDV
San Bernardino (SC)	2028	MH	Aggregate	Aggregate	Gasoline	2774.490262	8021116.857	1642.232555	1642232.555	2004936.203	8021116.857	11718035.32	5.84	MH
San Bernardino (SC)	2028	MH	Aggregate	Aggregate	Diesel	1296.752484	3696918.462	362.7036477	362703.6477		3696918.462			MH
San Bernardino (SC)	2028	MHDT	Aggregate	Aggregate	Gasoline	1329.379307	23462453.15	4316.864179	4316864.179	27723715.53	23462453.15	236605046.1	8.53	MHDT
San Bernardino (SC)	2028	MHDT	Aggregate	Aggregate	Diesel	16255.69397	209782000.9	23017.43604	23017436.04		209782000.9			MHDT
San Bernardino (SC)	2028	MHDT	Aggregate	Aggregate	Natural Gas	241.4362378	3360592.119	389.4153093	389415.3093		3360592.119			MHDT
San Bernardino (SC)	2028	OBUS	Aggregate	Aggregate	Gasoline	328.7028414	4255767.265	803.7256821	803725.6821	1460997.271	4255767.265	9413656.104	6.44	OBUS
San Bernardino (SC)	2028	OBUS	Aggregate	Aggregate	Diesel	227.7457123	4486862.227	584.1187279	584118.7279		4486862.227			OBUS
San Bernardino (SC)	2028	OBUS	Aggregate	Aggregate	Natural Gas	39.81877934	671026.6119	73.15286073	73152.86073		671026.6119			OBUS
San Bernardino (SC)	2028	SBUS	Aggregate	Aggregate	Gasoline	307.1039273	4698397.701	518.8930379	518893.0379	1618703.391	4698397.701	10388613.48	6.42	SBUS
San Bernardino (SC)	2028	SBUS	Aggregate	Aggregate	Diesel	328.9689478	2183641.387	293.0482349	293048.2349		2183641.387			SBUS
San Bernardino (SC)	2028	SBUS	Aggregate	Aggregate	Natural Gas	446.675507	3506574.393	806.7621177	806762.1177		3506574.393			SBUS
San Bernardino (SC)	2028	UBUS	Aggregate	Aggregate	Gasoline	55.15736847	1731768.55	134.2428107	134242.8107	2370894.889	1731768.55	11725821.61	4.95	UBUS
San Bernardino (SC)	2028	UBUS	Aggregate	Aggregate	Diesel	4.529432466	146321.6342	14.20938779	14209.38779		146321.6342			UBUS
San Bernardino (SC)	2028	UBUS	Aggregate	Aggregate	Natural Gas	223.4605562	9847731.429	2222.442691	2222442.691		9847731.429			UBUS