Appendix B

Air Quality and Greenhouse Gas Emissions Assessment

HELIX Environmental Planning, Inc.
1180 Iron Point Road, Suite 130
Folsom, CA 95630
916.435.1205 tel
619.462.0552 fax
www.helixepi.com

October 11, 2023 05049.00002.001

Ms. Camille Buehler, PE, PLS
Lumos and Associates, Inc.
9222 Prototype Drive
Reno, NV 89521
cbuehler@lumosinc.com

Subject: **East Line Street Bridge Replacement Project Air Quality and Greenhouse Gas Emissions Assessment**

Dear Ms. Buehler:

HELIX Environmental Planning, Inc. (HELIX) has assessed the air quality and greenhouse gas (GHG) emissions associated with the construction and operation of the proposed East Line Street Bridge Replacement Project (project). Analysis within this letter report was prepared to support impact analysis pursuant to the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.), CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

PROJECT LOCATION

The proposed project is located in the City of Bishop (City), Inyo County, California, 93514. The East Line Street Bridge is located on East Line Street, between First Street and Johnston Lane. The bridge is located within Sections 5, 6, 7, & 8, Township 7 South, Range 33 East (U.S. Geological Survey 7.5-minute "Bishop Quadrangle"). Refer to Figure 1, *Site and Vicinity Map* and Figure 2, *Aerial Map* . Figures are contained in Attachment A.

PROJECT DESCRIPTION

The project proposes to replace the existing East Line Street Bridge (bridge) located within the City of Bishop. The bridge crosses the Bishop Creek Canal, operated by the Los Angeles Department of Water and Power (LADWP), between First Street and Johnston Lane. The project would replace the existing bridge with reinforced concrete box (RCB) culvert sections. The bridge would be replaced due to concerns for the City in terms of overall structural stability and pedestrian safety. Refer to Figure 3, *Site Plan*.

EXISTING CONDITIONS

The proposed project is located within the City of Bishop, Inyo County, which is part of the Great Basin Valleys Air Basin (Basin). The Basin is named for its geological formation of valleys surrounded by mountains. Air rises and sinks in the Basin due to the heat in the valleys and height of the mountains that causes the air and its pollutants to settle in the valleys and basins. The variable climate of the Basin is determined by its diverse terrain and geographic location. The climate of the region is influenced by the Sierra Nevada and is generally semi-arid to arid, characterized by low precipitation, abundant sunshine, frequent winds, moderate to low humidity, and high potential for evapotranspiration.

The average minimum winter temperature is in the low- to mid-20 degrees Fahrenheit (°F), while the average maximum summer temperature is in the mid- to high 90°F. Most precipitation occurs between November and February. Spring is the windiest season, with fast-moving northerly weather fronts. During the day, southerly winds result from the strong solar heating of the nearby mountain slopes, causing upslope circulation. Summer winds are northerly at night as a result of cool air draining from higher to lower elevations (WRCC 2016).

Air quality in the Basin is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the State level, by the Great Basin Unified Air Pollution Control District (GBUAPCD) at the regional level, and by the City of Bishop at the local level.

REGULATORY SETTING

Air Quality

Criteria Pollutants

Criteria pollutants are defined and regulated by State and federal law as a risk to the health and welfare of the public and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources, including carbon monoxide (CO); reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs]); [1] nitrogen oxides (NO_X); sulfur dioxide (SO_2); coarse particulate matter (PM_{10}); fine particulate matter ($PM_{2.5}$); and lead. Of these primary pollutants, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead are criteria pollutants. ROGs and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. The principal secondary criteria pollutants are ozone and nitrogen dioxide (NO_2). In addition to being primary pollutants, PM_{10} and $PM_{2.5}$ can be secondary pollutants formed by chemical reactions in the atmosphere.

Ambient air quality is described in terms of compliance with State and national standards, and the levels of air pollutant concentrations considered safe to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs, and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

The USEPA has established national ambient air quality standards (NAAQS) for criteria pollutants. As permitted by the Clean Air Act (CAA), California has adopted the more stringent California ambient air quality standards (CAAQS) and expanded the number of regulated air pollutant constituents.

CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for these standards. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once. The area air quality attainment status of the Basin, including Inyo County, is shown in Table 1, *Great Basin Valleys Air Basin Attainment Status*. The Basin is currently in nonattainment for federal and State PM_{10} standards. The Basin is in State nonattainment for ozone (1-hour and 8-hour) standards. Concentrations of all other pollutants meet State and federal standards.

Table 1
GREAT BASIN VALLEYS AIR BASIN ATTAINMENT STATUS

Pollutant	State of California Attainment Status	Federal Attainment Status
Ozone (1-hour)	Nonattainment	No Federal Standard
Ozone (8-hour)	Nonattainment	Attainment/Unclassified
Suspended Particulate Matter (PM_{10})	Nonattainment	Nonattainment*/Attainment**/Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Attainment/Unclassified
Carbon Monoxide (CO)	Attainment	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Unclassified
Lead	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO_2)	Attainment	Attainment/Unclassified
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Attainment	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

Sources: CARB 2023a
*Nonattainment area is the Owens Valley and Mono Basin PM_{10} Planning Area.
**Attainment in the Coso Junction and Mammoth Lake PM_{10} Planning Area.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term chronic health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe, and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is assumed to be a relatively safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

The Health and Safety Code (§39655[a]) defines TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." All substances that are listed as hazardous air pollutants pursuant to subsection (b) of Section 112 of the CAA (42 United States Code Sec. 7412[b]) are designated as TACs. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel Particulate Matter

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is 2.5 microns or less in diameter (CARB 2023b). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of the total known cancer risk related to air toxins in California is attributable to DPM (CARB 2023b).

Great Basin Unified Air Pollution District

Rules and Regulations

The GBUAPCD enforces regulations and administers permits governing stationary sources by limiting emissions of criteria air pollutants and TACs. The GBUAPCD has adopted rules and regulations that regulate visible emissions, nuisance emissions, and fugitive dust emissions (GBUAPCD 2023). The following rules would apply to the project:

- **Rules 200-A and 200-B. Permits Required:** Before any individual builds or operates anything, which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, such person must obtain a written authority to construct and permit to operate from an Air Pollution Control Officer.

- **Rules 401 and 402. Fugitive Dust and Nuisance:** Rule 401 requires that airborne particles remain at their place of origin under normal wind circumstances. Mitigation techniques approved by the GBUAPCD must be implemented to ensure the containment of fugitive dust. Rule 401 does not apply to emissions discharged through a stack (point source). Rule 402 specifies that any discharge from any source in quantities of air contaminants or other materials which may cause injury, detriment, nuisance or annoyance, or damage to any public property or considerable number of people should be regulated.

Regional Comprehensive Plan

The Basin is identified as an Isolated Rural area, which means that its emissions are not part of an emissions analysis of any metropolitan planning area or plan. Thus, there is no regional plan to guide growth and transportation in the area.

City of Bishop General Plan

Air Quality is addressed within the Conservation and Open Space Element of the General Plan. The Conservation and Open Space Element contains: a goal to preserve the existing air quality of the Bishop area; a policy to require that CEQA environmental review processes shall be utilized for all new development projects to identify and mitigate the potentially significant impacts to the City's natural resources; and an action by the City to condition projects to address air quality measures (City of Bishop 1993).

Greenhouse Gases

Global climate change refers to changes in average climatic conditions on Earth, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The GHGs defined under California's Assembly Bill (AB) 32, described below, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Estimates of GHG emissions are commonly presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. GHG emissions quantities in this analysis are presented in metric tons (MT) of CO_2e. For consistency with United Nations Standards, modeling, and reporting of GHGs in California and the U.S. use the GWPs defined in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC 2007): CO_2 – 1; CH_4 – 25; N_2O – 298.

GHG Reduction Regulations and Plans

The primary GHG reduction regulatory legislation and plans (applicable to the project) at the State, regional, and local levels are described below. Implementation of California's GHG reduction mandates are primarily under the authority of CARB at the State level, GBUAPCD at the regional level, and City of Bishop at the local level.

Executive Order S-3-05: On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to State agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006: The California Global Warming Solutions Act of 2006, widely known as AB 32, required that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB was directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15: On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California achieved the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

Senate Bill 32: Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a Statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

Assembly Bill 197: A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Assembly Bill 1493- Vehicular Emissions of Greenhouse Gases: AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2023c).

Executive Order S-01-07: This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010.

Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. Therefore, CARB is continuing to implement the LCFS Statewide.

Senate Bill 350: Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce GHG emissions, and increase the use of clean energy.

Senate Bill 375: SB 375, the Sustainable Communities and Climate Protection Act of 2008, supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Under the Sustainable Communities Act, CARB sets regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established these targets for 2020 and 2035 for each region covered by one of the State's metropolitan planning organizations (MPOs). CARB periodically reviews and updates the targets, as needed.

Each of California's MPOs must prepare a Sustainable Communities Strategy (SCS) as an integral part of its regional transportation plan (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. Once adopted by the MPO, the RTP/SCS guides the transportation policies and investments for the region. CARB must review the adopted SCS to confirm and accept the MPO's determination that the SCS, if implemented, would meet the regional GHG targets. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate alternative planning strategy (APS) to meet the targets. The APS is not a part of the RTP. Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

Senate Bill 100: Approved by Governor Brown on September 10, 2018, SB 100 requires that all retail sales of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Executive Order N-79-20: EO N-79-20, signed by Governor Newsom on September 23, 2020, establishes three goals for the implementation of zero emissions vehicles in California: first, 100 percent of in-State sales of new passenger cars and trucks will be zero-emissions by 2035; second, 100 percent of medium- and heavy-duty vehicles in the State will be zero-emissions vehicles by 2045 for all operations where feasible, and by 2035 for drayage trucks; and third, 100 percent of off-road vehicles and equipment will be zero emissions by 2035 where feasible.

Assembly Bill 1279: Approved by Governor Newsom on September 16, 2022, AB 1279, the California Climate Crisis Act, declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, Statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO_2 from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

Senate Bill 905: Approved by Governor Newsom on September 16, 2022, SB 905, Carbon Sequestration: Carbon Capture, Removal, Utilization, and Storage Program, requires CARB to establish a Carbon Capture, Removal, Utilization, and Storage Program to evaluate the efficacy, safety, and viability of carbon capture, utilization, or storage technologies and CO_2 removal technologies and facilitate the capture and sequestration of CO_2 from those technologies, where appropriate. SB 905 is an integral part of achieving the State policies mandated in AB 1279.

California Air Resources Board Scoping Plan: The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across our society and economy to reduce emissions and reach our climate targets. The current 2022 Scoping Plan is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan also assessed the progress toward achieving the 2020 limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030.

On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022).

Great Basin Unified Air Pollution Control District: The GBUAPCD regulates air quality in the County according to the standards established in the CAA and amendments to those acts. The GBUAPCD regulates air quality through its permitting authority and through air quality-related planning and review activities over most types of stationary emission sources.

City of Bishop General Plan: The City of Bishop's General Plan does not contain any goals or policies related to GHG emissions (City of Bishop 1993). However, the Conservation and Open Space Element of the General Plan contains a goal to preserve the existing air quality of the Bishop area.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015).

Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children and infants are considered more susceptible to health effects of air pollution due to their immature immune systems, developing organs, and higher breathing rates. As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

The closest existing sensitive receptors to the project site are single-family residential homes located approximately 13 feet south of the project site. The closest school to the project site is Bishop Union High School, located approximately 0.7 mile west of the project site.

METHODOLOGY AND ASSUMPTIONS

Criteria pollutant and precursor emissions, and GHG emissions for the project were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.19. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The model calculates emissions of criteria pollutants, ozone precursors, and GHGs, including PM_{10}, $PM_{2.5}$, ROGs, NO_X, and CO_2e. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, C, and D (CAPCOA 2023). The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. The CalEEMod output files are included in Attachment B to this letter.

Construction Assumptions

Construction of the project is anticipated to begin as early as June 2025 and be completed by September 2025. The proposed asphalt paved bridge would total 30,000 square feet, or 0.689 acre, as provided by the project engineer. Construction modeling assumes the longest anticipated schedule reported by the project engineer: site preparation 5 days; demolition 20 days; grading 20 days; building construction 10 days; and paving 5 days. It was assumed underground utilities would be constructed during the grading phase. Construction equipment assumptions were based on estimates from CalEEMod defaults. An estimated 150 cubic yards of vegetation or other cleared material would be exported during site preparation and 400 cubic yards of debris or other cleared material would be exported during demolition. An estimated 200 cubic yards of cut/fill is anticipated as soil movement during grading. Construction vehicle trips were based on estimates from CalEEMod defaults. Construction emissions modeling assumes implementation of dust best management practices (watering exposed areas twice per day) to comply with the requirements of GBUAPCD Rule 401 and 402, *Fugitive Dust and Nuisance*.

Operational Assumptions

Operational emissions were not modeled using CalEEMod as the proposed project would replace an existing bridge. It is assumed operation of the new bridge would produce negligible operational emissions beyond what currently exists.

STANDARDS OF SIGNIFICANCE

Air Quality

The impact analysis provided below is based on the application of the following CEQA Guidelines Appendix G thresholds of significance, which indicate that a project would have a significant air quality impact if it would:

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

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;

3. Expose sensitive receptors to substantial pollutant concentrations; and

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Neither the City of Bishop nor the GBUAPCD have established numerical significance thresholds for quantitatively determining air quality impacts. CEQA, however, allows lead agencies to rely on standards or thresholds promulgated by other agencies. The GBUAPCD has allowed use of the numerical standards of the Mojave Desert Air Quality Management District (MDAQMD) in prior CEQA reviews. Because the air quality and pollutant attainment status in portions of the Mojave Desert Air Basin (MDAB) are similar to those of the Basin, the numerical thresholds set for MDAQMD are considered adequate to serve as significance thresholds for the proposed project.

Project construction will have a significant impact on air quality if emissions exceed any of the threshold levels identified in Table 2, *Air Pollutant Significance Thresholds*. For nonattainment pollutants, if emissions exceed the thresholds shown in the table, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

Table 2
AIR POLLUTANT SIGNIFICANCE THRESHOLDS

Pollutant	Significance Thresholds (pounds per day)	Significance Thresholds (tons per year)
Volatile Organic Compound (VOC)	137	25
Nitrogen Oxides (NO_X)	137	25
Coarse Particulate Matter (PM_{10})	82	15
Fine Particulate Matter ($PM_{2.5}$)	65	12
Carbon Monoxide (CO)	548	100
Sulfur Oxides (SO_X)	137	25

Source: MDAQMD 2016

Greenhouse Gas Emissions

According to Appendix G of the CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

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

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

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the Lead Agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Neither the GBUAPCD nor the City has yet established specific quantitative significance thresholds for GHG emissions evaluated under CEQA.

In the absence of adopted local or Statewide thresholds, the general methodology in this analysis follows the interim guidance provided by the MDAQMD. The MDAQMD's CEQA Guidelines establish an annual GHG threshold of 100,000 per year (MDAQMD 2016). The MDAQMD's threshold was developed to meet the mandate of AB 32 for emissions reduced to 1990 levels by 2020. Because the project implementation period would be post 2020, this analysis uses an adjusted threshold of 60,000 MT CO2e per year, reflecting the SB 32 madidate of 40 percent reductions below 1990 levels by 2030.

AIR QUALITY IMPACT ANALYSIS

(1) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. Consistency with air quality plans is determined by whether the project would:

1. result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards; and

2. result in growth of population or employment that is not accounted for in local and regional planning.

With respect to the first criterion, the analyses presented below demonstrate that the project would not generate emissions that could potentially cause an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards.

With respect to the second criterion, the proposed project is improving an existing bridge and would not result in population or employment increases and, therefore, would not exceed the growth projection assumptions in the General Plan. In addition, the proposed project would be consistent with the City General Plan Mobility Element roadway components. The project would support the City General Plan

Policy 2.4 by improving safety and quality of East Line Street Bridge and would support Policy 6.2 by providing a pedestrian walkway connection along East Line Street between First Street and Johnston Lane.

Because the project is consistent with the City's General Plan and growth assumptions, the proposed project is considered consistent with the region's planning efforts. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be less than significant, and no mitigation is required.

(2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Program region is non-attainment under an applicable federal or State ambient air quality standard?

Less than Significant Impact.

Construction

CalEEMod version 2022.1.1.19 was used to quantify project-generated construction emissions. Assumptions included in the model are described previously and detailed model output sheets are included in Attachment B to this letter. Construction activities were assumed to commence as early as June 2025 and be completed by September 2025. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix than assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

The project's construction period emissions of NO_X, PM_{10}, and $PM_{2.5}$ are compared to the MDAQMD construction thresholds in Table 3, *Construction Criteria Pollutant and Precursor Emissions*. The MDAQMD does not have a recommended threshold for construction-generated ROG. However, quantification and disclosure of ROG emissions is recommended. The model output and calculation sheets are included as Attachment B to this letter.

Table 3
CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Construction Activity/Year(s)	Pollutant Emissions (pounds per day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Site Preparation (2025)	0.5	4.6	0.6	0.3
Demolition (2025)	0.5	4.5	0.6	0.3
Grading (2025)	6.6	55.3	5.5	2.7
Building Construction (2025)	4.5	39.8	4.0	1.8
Paving (2025)	0.7	6.0	0.4	0.3
Maximum Daily Emissions	**6.6**	**55.3**	**5.5**	**2.7**
MDAQMD Thresholds	*None*	*137*	*82*	*65*
Exceed Thresholds?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Attachment B)
ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; MDAQMD= Mojave Desert Air Quality Management District

As shown in Table 3, the proposed project construction period emissions of the ozone precursor of NO_X, PM_{10}, and $PM_{2.5}$ would not exceed the MDAQMD thresholds. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. The impact would be less than significant.

Operation

Operational emissions were not calculated using CalEEMod as the proposed project would replace an existing bridge. It is assumed operation of the new bridge would produce negligible operational emissions beyond what currently exists. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. The impact would be less than significant.

(3) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact.

Toxic Air Contaminants

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has to the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015).

In addition, concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500 feet (CARB 2005). Considering this information, the highly dispersive nature of DPM, and the fact that construction activities would occur at various locations throughout the project site, it is not anticipated that construction of the project would expose sensitive receptors to substantial DPM concentrations.

Carbon Monoxide Hot Spots

Vehicle exhaust is the primary source of CO. In an urban setting, the highest CO concentrations are found near congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. Project-generated traffic has the potential of contributing to localized "hot spots" of CO offsite. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections. Because CO disperses rapidly, hot spots are most likely to occur in areas with high traffic volumes and limited vertical mixing such as tunnels, long underpasses, or below-grade roadways.

The project would not generate trips as it would replace an existing bridge. Therefore, there would be no change to existing traffic patterns/flows that could result in a "hot spot" of CO. Additionally, as noted above, hot spots of CO are most likely to occur from exhaust emissions in tunnels, long underpasses, or below grade roadways, and none of the roadways nearby the proposed project have these characteristics. Therefore, the impact would be less than significant.

(4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. The project could produce odors during construction activities resulting from heavy diesel equipment exhaust and VOC released during application of asphalt. The odor of these emissions is objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not be at a level that would affect a substantial number of people. Any odors emitted during construction activities would be temporary, short-term, and intermittent in nature, and would cease upon the facility maintenance. As a result, impacts associated with temporary odors during construction are not considered significant.

As the proposed project would replace an existing bridge, operation of the project would not result in odors affecting a substantial number of people. No solid waste is anticipated to be generated by the operation of the proposed project. Therefore, the impact would be less than significant.

GHG EMISSIONS IMPACT ANALYSIS

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

Less than Significant Impact.

Construction

GHG emissions would be generated by the project during construction, including vehicle engine exhaust from construction equipment, on-road hauling trucks, vendor trips, and worker commuting trips. GHG emissions were calculated using CalEEMod, as described under *Methodology and Assumptions*. The model output and calculation sheets are included as Attachment B to this letter. The result of GHGs emissions related to the construction of the project would be temporary. As shown in Table 4, *Construction GHG Emissions*, the annual project construction emissions would not exceed the MDAQMD threshold. The impact would be less than significant.

Table 4
CONSTRUCTION GHG EMISSIONS

Year of Emissions	Emissions ($MT CO_2e$)
2025	189
Maximum	189
MDAQMD Threshold	60,000
Exceed Threshold?	**No**

Source: CalEEMod (output data is provided in Attachment B)
MT = metric tons; CO_2e = carbon dioxide equivalents

Operation

Operational emissions were not calculated using CalEEMod as the proposed project would replace an existing bridge. It is assumed operation of the new bridge would produce negligible operational emissions beyond what currently exists. Therefore, the project's operational emissions would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant.

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Less than Significant Impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The original overall State plan and policy was AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 was to reduce GHG emissions to 1990 levels by 2020. SB 32 extended the requirements of AB 32 by requiring further reductions of 40 percent below 1990 levels by 2030. AB 1279, the California Climate Crisis Act, was approved on September 16, 2022, and declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, Statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels.

The 2022 CARB Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

The City does not currently have a climate action plan or other GHG reduction plan. Additionally, the City of Bishop's General Plan does not contain any goals or policies related to GHG emissions (City of Bishop 1993). Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, and the impact would be less than significant.

SUMMARY

As described above, emissions of criteria pollutants would be below MDAQMD thresholds, and the project would not conflict with or obstruct implementation of the applicable air quality plan. Sensitive receptors would not be exposed to substantial concentrations of TACs or odors. Impacts to air quality would be less than significant and no mitigation measures would be required.

Emissions of GHGs would be below MDAQMD thresholds. The City does not currently have a climate action plan or other GHG reduction plan, and the City of Bishop's General Plan does not contain any goals or policies related to GHG emissions. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Therefore, impacts related to GHG emissions would be less than significant and no mitigation measures would be required.

Sincerely,

Victor Ortiz
Senior Air Quality Specialist

Julia Pano
Environmental Planner

Attachments:

Attachment A: Figures
Attachment B: CalEEMod Output

REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2023. User's Guide for CalEEMod Version 2022.1.1.19. Available at: http://www.caleemod.com/.

California Air Resources Board (CARB). 2023a. Maps of State and Federal Area Designations. Available at: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

2023b. Overview: Diesel Exhaust and Health. Available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

2023c. Clean Car Standards – Pavley, Assembly Bill 1493. Accessed December. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm.

2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf.

City of Bishop (City). 1993. General Plan. Available at: https://www.cityofbishop.com/departments/planning/general_plan.php.

Great Basin Unified Air Pollution Control District (GBUACPD). 2023. Rules and Regulations. Available at: https://www.gbuapcd.org/PermittingAndRules/RulesAndRegulations/.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Summary for Policymakers. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. February. Available at: https://www.ipcc.ch/report/ar4/wg1/.

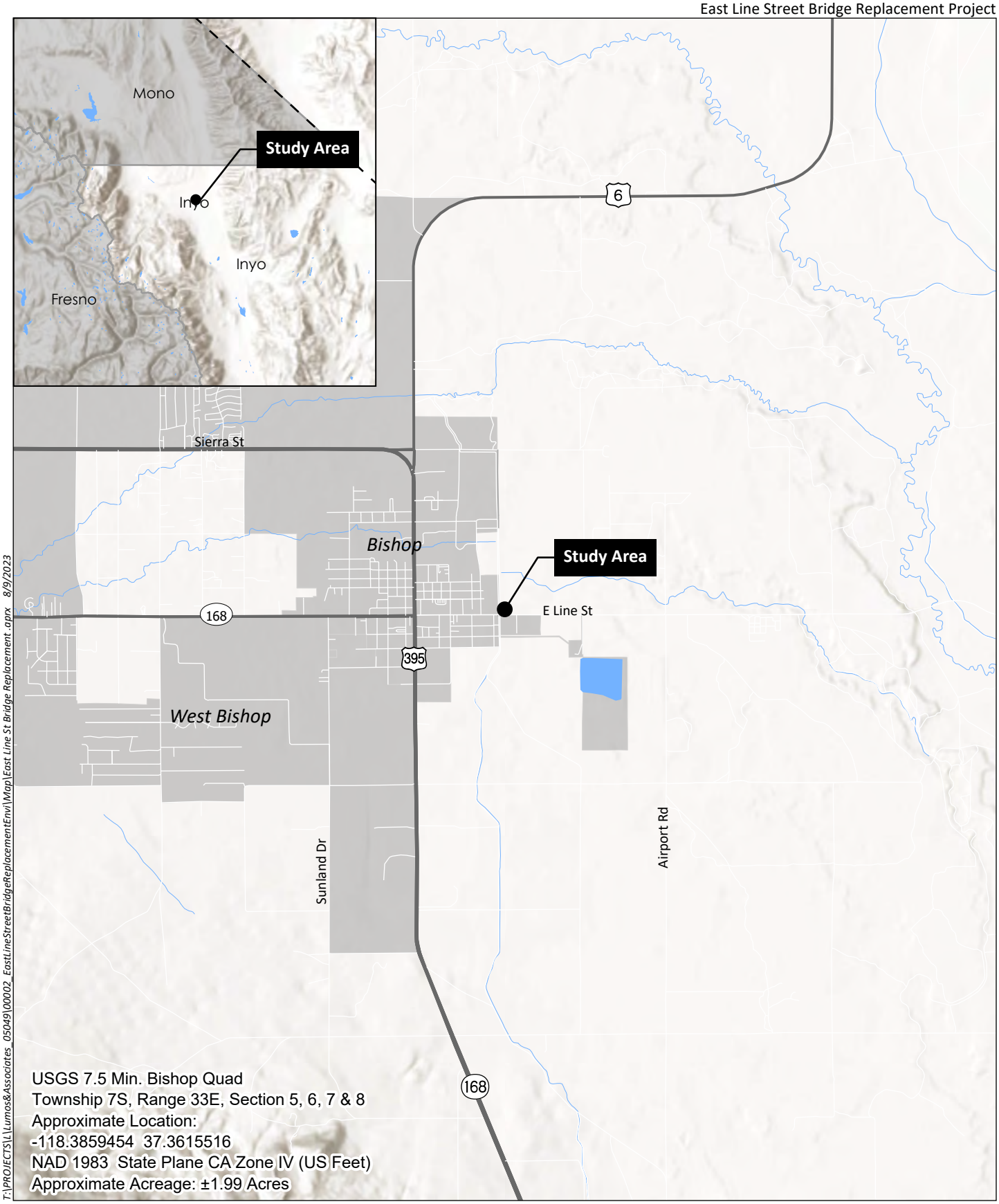
Mojave Desert Air Quality Management District (MDAQMD). 2016. California Environmental Quality Act and Federal Conformity Guidelines. Available at: https://www.mdaqmd.ca.gov/home/showdocument?id=192.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Available at: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

Western Regional Climate Center (WRCC). 2016. Cooperative Climatological Data Summaries – Bishop WSO Airport (040822). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0822.

Attachment A

Figures



T:\PROJECTS\L\Lumos&Associates_05049\00002_EastLineStreetBridgeReplacementEnv\Map\East Line St Bridge Replacement .aprx 8/9/2023

Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

Site and Vicinity Map

Figure 1

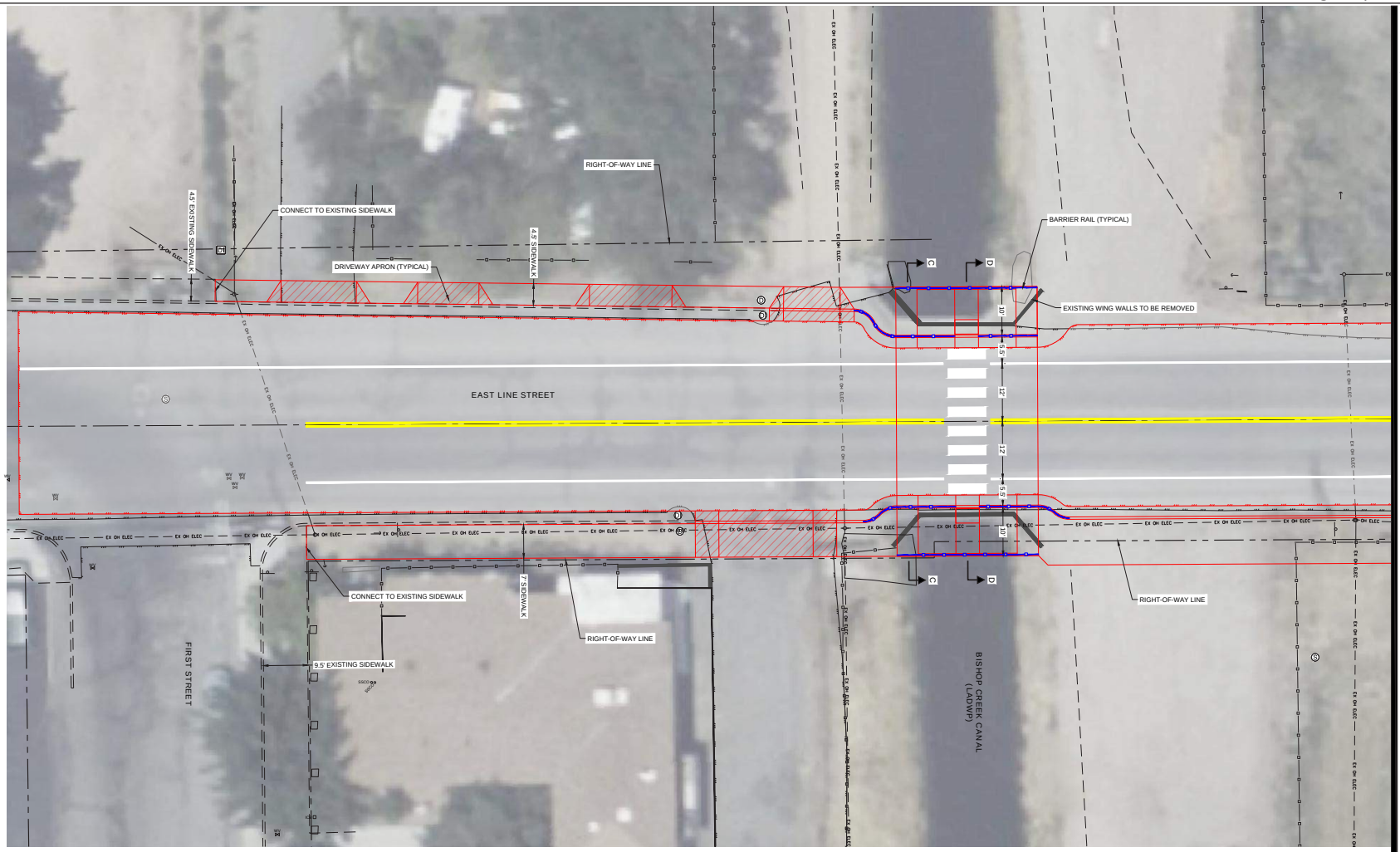
T:\PROJECTS\L\Lumos&Associates 05049\00002 EastLineStreetBridgeReplacementEnv\Map\East Line St Bridge Replacement.aprx 8/25/2023

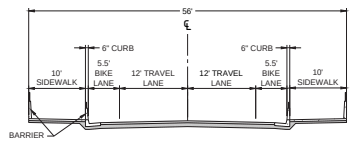
Source: Aerial (NearMap, 7/1/2023)

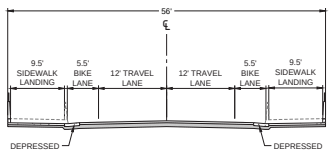
HELIX Environmental Planning

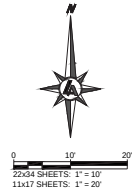
Aerial Map

Figure 2









LUMOS & ASSOCIATES
650 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

© LUMOS & ASSOCIATES, INC.: THIS DRAWING IS THE PROPERTY OF LUMOS & ASSOCIATES, INC. USE OR REPRODUCTION OF THIS DRAWING, IN WHOLE OR IN PART, WITHOUT THE WRITTEN PERMISSION OF LUMOS & ASSOCIATES, INC. IS STRICTLY PROHIBITED. THIS DRAWING IS NOT TO BE USED FOR ANY PROJECT OTHER THAN THE PROJECT FOR WHICH IT WAS PREPARED.

CITY OF BISHOP

EAST LINE STREET BRIDGE REPLACEMENT
ALTERNATIVES ANALYSIS
WEST SIDEWALK & BRIDGE OPTION 2

CALIFORNIA
INYO
BISHOP

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

EX 2

DRAWN BY:	JTK
DESIGNED BY:	JTK
CHECKED BY:	CAB
JOB NO.:	10568.000

T:\PROJECTS\L\Lumos&Associates_05049\00002_EastLineStreetBridgeReplacementEnv\Map\SitePlan_20230929.indd

Source: Lumos & Associates, 2023

HELIX Environmental Planning

Site Plan

Figure 3

Attachment B

CalEEMod Output

East Line Street Bridge Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	East Line Street Bridge
Construction Start Date	6/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.70
Precipitation (days)	1.20
Location	520 E Line St, Bishop, CA 93514, USA
County	Inyo
City	Bishop
Air District	Great Basin UAPCD
Air Basin	Great Basin Valleys
TAZ	3017
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	—
App Version	2022.1.1.19

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	< 0.005	Mile	0.69	0.00	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.	7.77	6.55	55.3	61.7	0.12	2.47	3.01	5.48	2.27	0.39	2.66	—	14,105	14,105	0.57	0.13	2.33	14,161
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.53	4.51	4.94	0.01	0.20	0.26	0.45	0.18	0.03	0.22	—	1,138	1,138	0.05	0.01	0.09	1,143
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.10	0.82	0.90	< 0.005	0.04	0.05	0.08	0.03	0.01	0.04	—	188	188	0.01	< 0.005	0.02	189

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	7.77	6.55	55.3	61.7	0.12	2.47	3.01	5.48	2.27	0.39	2.66	—	14,105	14,105	0.57	0.13	2.33	14,161
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.63	0.53	4.51	4.94	0.01	0.20	0.26	0.45	0.18	0.03	0.22	—	1,138	1,138	0.05	0.01	0.09	1,143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.11	0.10	0.82	0.90	< 0.005	0.04	0.05	0.08	0.03	0.01	0.04	—	188	188	0.01	< 0.005	0.02	189

3. Construction Emissions Details

3.1. Site Preparation (2025) - 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	0.58	0.49	4.22	4.50	0.01	0.24	—	0.24	0.22	—	0.22	—	632	632	0.03	0.01	—	634
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
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	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.66	8.66	< 0.005	< 0.005	—	8.69

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.50	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	84.5	84.5	< 0.005	< 0.005	0.32	85.8
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	0.01	0.01	0.36	0.06	< 0.005	0.01	0.07	0.08	0.01	0.02	0.02	—	265	265	< 0.005	0.04	0.45	277
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.63	3.63	< 0.005	< 0.005	< 0.005	3.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63

3.3. Demolition (2025) - 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	0.58	0.49	4.22	4.50	0.01	0.24	—	0.24	0.22	—	0.22	—	632	632	0.03	0.01	—	634
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
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	0.03	0.03	0.23	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.6	34.6	< 0.005	< 0.005	—	34.7
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.73	5.73	< 0.005	< 0.005	—	5.75

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.04	0.04	0.03	0.50	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	84.5	84.5	< 0.005	< 0.005	0.32	85.8
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	0.01	< 0.005	0.24	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	174	174	< 0.005	0.03	0.30	182
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.36	4.36	< 0.005	< 0.005	0.01	4.42
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.54	9.54	< 0.005	< 0.005	0.01	9.99
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.72	0.72	< 0.005	< 0.005	< 0.005	0.73
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.65

3.5. Grading (2025) - 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	7.47	6.27	55.0	58.2	0.12	2.47	—	2.47	2.27	—	2.27	—	13,477	13,477	0.55	0.11	—	13,523
Dust From Material Movement	—	—	—	—	—	—	2.48	2.48	—	0.27	0.27	—	—	—	—	—	—	—
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	0.41	0.34	3.01	3.19	0.01	0.14	—	0.14	0.12	—	0.12	—	738	738	0.03	0.01	—	741
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.55	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	122	122	< 0.005	< 0.005	—	123
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.30	0.28	0.22	3.51	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	592	592	0.03	0.02	2.23	601
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.1	36.1	< 0.005	< 0.005	0.09	37.6
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	0.01	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.5	30.5	< 0.005	< 0.005	0.05	30.9
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.06
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.05	5.05	< 0.005	< 0.005	0.01	5.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
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. Building Construction (2025) - 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	5.17	4.34	39.7	38.6	0.09	1.61	—	1.61	1.48	—	1.48	—	10,050	10,050	0.41	0.08	—	10,085

Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	0.22	0.22	—	—	—	—	—	—	—
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	0.14	0.12	1.09	1.06	< 0.005	0.04	—	0.04	0.04	—	0.04	—	275	275	0.01	< 0.005	—	276
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.6	45.6	< 0.005	< 0.005	—	45.7
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.19	0.17	0.14	2.17	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	366	366	0.02	0.01	1.38	372
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	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.44	9.44	< 0.005	< 0.005	0.02	9.57
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	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.56	1.56	< 0.005	< 0.005	< 0.005	1.59
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. Paving (2025) - 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	0.73	0.61	5.93	8.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,337	1,337	0.05	0.01	—	1,341
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	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.3	18.3	< 0.005	< 0.005	—	18.4

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	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.03	3.03	< 0.005	< 0.005	—	3.04
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	0.07	0.07	0.05	0.84	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.53	143
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	—	1.82	1.82	< 0.005	< 0.005	< 0.005	1.84
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	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.30
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)

Vegetation																		
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	
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Site Preparation	Linear, Grubbing & Land Clearing	6/1/2025	6/7/2025	5.00	5.00	—
Demolition	Linear, Grubbing & Land Clearing	6/8/2025	7/5/2025	5.00	20.0	—
Grading	Linear, Grading & Excavation	7/6/2025	8/2/2025	5.00	20.0	—
Building Construction	Linear, Drainage, Utilities, & Sub-Grade	8/3/2025	8/16/2025	5.00	10.0	—
Paving	Linear, Paving	8/17/2025	8/23/2025	5.00	5.00	—

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
Site Preparation	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Site Preparation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Demolition	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82

Demolition	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Demolition	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Cranes	Diesel	Average	1.00	8.00	367	0.29
Grading	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Grading	Rubber Tired Loaders	Diesel	Average	3.00	8.00	150	0.36
Grading	Scrapers	Diesel	Average	4.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Building Construction	Scrapers	Diesel	Average	4.00	8.00	423	0.48
Building Construction	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Building Construction	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Building Construction	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Building Construction	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Building Construction	Graders	Diesel	Average	2.00	8.00	148	0.41
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	14.1	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	11.0	HHDT,MHDT
Site Preparation	Hauling	3.80	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	52.5	14.1	LDA,LDT1,LDT2
Grading	Vendor	1.00	11.0	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	32.5	14.1	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	11.0	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Demolition	—	—	—	—
Demolition	Worker	7.50	14.1	LDA,LDT1,LDT2
Demolition	Vendor	0.00	11.0	HHDT,MHDT
Demolition	Hauling	2.50	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	14.1	LDA,LDT1,LDT2
Paving	Vendor	0.00	11.0	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	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 (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	150	0.90	0.00	—
Demolition	—	400	0.90	0.00	—
Grading	—	—	0.90	0.00	—
Building Construction	—	—	0.69	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

Bridge/Overpass Construction	0.69	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	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	34.1	annual days of extreme heat
Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	2.99	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	0	0	0	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	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	1	1	1	2
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	17.7
AQ-PM	1.08
AQ-DPM	18.6

Drinking Water	39.6
Lead Risk Housing	58.0
Pesticides	36.0
Toxic Releases	0.00
Traffic	22.9
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	26.2
Haz Waste Facilities/Generators	50.1
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	74.3
Cardio-vascular	60.8
Low Birth Weights	90.4
Socioeconomic Factor Indicators	—
Education	33.5
Housing	36.7
Linguistic	0.51
Poverty	50.5
Unemployment	49.9

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	33.50442705

Employed	94.98267676
Median HI	20.56974208
Education	—
Bachelor's or higher	41.92223791
High school enrollment	100
Preschool enrollment	48.90286154
Transportation	—
Auto Access	12.28025151
Active commuting	87.09097908
Social	—
2-parent households	3.297831387
Voting	69.61375593
Neighborhood	—
Alcohol availability	52.35467727
Park access	81.35506224
Retail density	57.88528166
Supermarket access	62.24817144
Tree canopy	1.219042731
Housing	—
Homeownership	34.89028615
Housing habitability	31.0278455
Low-inc homeowner severe housing cost burden	45.28422944
Low-inc renter severe housing cost burden	34.58231746
Uncrowded housing	87.19363531
Health Outcomes	—
Insured adults	58.50121904
Arthritis	0.0

Asthma ER Admissions	41.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	21.0
Cognitively Disabled	38.1
Physically Disabled	10.0
Heart Attack ER Admissions	39.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	90.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	40.5
Elderly	18.9
English Speaking	82.5

Foreign-born	22.7
Outdoor Workers	30.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	89.6
Traffic Density	29.1
Traffic Access	0.0
Other Indices	—
Hardship	47.1
Other Decision Support	—
2016 Voting	66.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	26.0
Healthy Places Index Score for Project Location (b)	48.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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 provided by project engineer. Underground Utilities were assumed to be included in the Grading phase.
Construction: Paving	Square footage of asphalt and concrete were provided by the project engineer.
Construction: Dust From Material Movement	Total cubic yards of export during Site Preparation and Demolition provided by the Project Engineer.