ALBERT A. WEBB ASSOCIATES

Technical Memorandum

To: Juan Raya, City of Indio

From: Eliza Laws, Senior Environmental Analyst
Noemi Avila, Assistant Environmental Analyst

Date: June 25, 2024

Re: Air Quality/Greenhouse Gas Analysis for Avenue 50 Improvements from Jefferson Street to Madison Street and from Madison Street to Botella Place (City Project #ST 2004), City of Indio, County of Riverside, California

The following air quality assessment was prepared to evaluate whether the expected criteria air pollutant emissions generated as a result of construction and operation of the proposed Project would cause exceedances of the South Coast Air Quality Management District (SCAQMD) thresholds for air quality in the Project area. The greenhouse gas (GHG) assessment was prepared to evaluate whether the expected GHG emissions generated as a result of construction and operation of the proposed Project would exceed the screening significance threshold level for small projects identified in the Indio Climate Action Plan (CAP). This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 et seq.). The methodology follows the *CEQA Air Quality Handbook* prepared by the SCAQMD for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD staff, the **Cal**ifornia **E**missions **E**stimator **Mod**el® version 2022.1 (CalEEMod) was used to quantify Project-related emissions.

The Project proposes improvement of Avenue 50 from Jefferson Street to Botella Place, east of the intersection of Jefferson Street and Avenue 50 to approximately 0.45 miles west of the intersection of Jackson Street and Avenue 50. The Project encompasses approximately 37.61 acres, inclusive of temporary construction easements on both sides of the roadway that will extend up to 10 feet beyond the right of way. The Project consists of the widening of Avenue 50 to two-travel lanes in each direction and adding sidewalk, bike lane, curb and gutter and drainage improvements. Intersection improvements on Avenue 50 will include turn lanes, restriping, and Americans with Disabilities Act (ADA)-compliant curb ramps. Project improvements would be constructed in the City of Indio and City of La Quinta between Jefferson Street and Madison Street.

▪ Regional Significance Thresholds

The thresholds contained in the *SCAQMD CEQA Air Quality Handbook*[1] (SCAQMD 1993) and posted in a supplemental table as mass daily thresholds on SCAQMD's website[2] are considered regional thresholds and are shown in **Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds**, below. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

[1] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)
[2] Air Quality Analysis Handbook (aqmd.gov)

Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operation	lbs/day	55	55	550	150	150	55

Air quality impacts can be described in a short- and long-term perspective. Short-term impacts occur during site grading and Project construction and consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Long-term impacts occur once the Project is in operation.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, SCAQMD Rule 403.1 is a supplement to Rule 403 and requires specific measures for reducing fugitive dust in the Coachella Valley. Compliance with this regulation includes having an approved Fugitive Dust Control Plan for activities disturbing more than 5,000 square feet, maintenance of a daily dust control log on-site, installation of construction project signage with contact information for complaints, and the presence of an environmental observer for construction sites larger than 50 acres. Based on the Project's total disturbance area (approximately 37.61 acres), an environmental observer would not be required. The fugitive dust control plan shall be submitted to and approved by the SCAQMD Executive Officer.

Short-Term Analysis

Short-term emissions from Project construction were evaluated using the CalEEMod version 2022.1program. The estimated construction period for the proposed Project is approximately 18 months, beginning no sooner than September 2025. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated emissions. In addition to the default values used, assumptions relevant to model inputs for short-term construction emission estimates used are:

- Construction is anticipated to begin in September 2025 with grading, which will include construction activities such as installation utility trenching and relocation, installation of drainage improvements, roadway improvements, and traffic signal pole relocation and end with paving:

Construction Activity	Start Date	End Date	Total Working Days
Grading	September 1, 2025	January 15, 2027	360
Paving	January 16, 2027	February 28, 2027	30

- The equipment to be used for each activity is shown below and represents program defaults, updated by Project-specific information from the Project engineer. The engine tier for each piece of equipment is calculated using CalEEMod defaults for the statewide fleet average emissions factors. Each piece of equipment is assumed to operate 8 hours per day:

Construction Activity	Off-Road Equipment	Unit Amount
Grading	Excavators	3
	Crawler Tractor	1
	Graders	2
	Rollers	2
	Signal Boards	4
	Tractor/Loader/Backhoe	4
	Rubber Tired Loaders	1
	Scraper	2
	Concrete/Industrial Saw	1
	Air Compressor	1
Paving	Rollers	2
	Paving Equipment	1
	Pavers	1
	Tractor/Loader/Backhoe	3
	Signal Boards	4
	Curb and Gutter r[1])	1
	Scraper	1

Notes: [1]Rubber tired loader was modeled to represent Curb and Gutter Machine

- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the option of watering the Project site three times daily which achieves a control efficiency of 74 percent for PM-10 and PM-2.5 emissions. Two (2) one-way vendor trips per day were added to the grading and paving activity to account for water truck trips.

- Sixteen (16) one-way vendor truck trips per day were included during grading to account for material delivery and/or soil import/export. In total, eighteen (18) one-way vendor trips were analyzed to account for material delivery, soil import/export, and water truck trips.

- The Project's improvements requires approximately 24.06 of asphalt pavement.

The results of this analysis are summarized below.

Table 2 – Estimated Maximum Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
2025	**4.35**	**36.20**	**45.50**	**0.08**	**3.35**	**1.73**
2026	4.09	33.50	44.80	0.08	3.19	1.58
2027	3.87	31.30	42.50	0.08	3.05	1.45
Maximum[1]	**4.35**	**36.20**	**45.50**	**0.08**	**3.35**	**1.73**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Note: [1] See the detailed model output reports attached herewith. Numbers are the maximum of summer or winter emissions in a given year and may not match due to rounding within the model.

As shown in the table above, the emissions from construction of the Project are below the SCAQMD daily construction thresholds for all the criteria pollutants.

Long-Term Analysis

Long-term emissions are evaluated at build-out of a project. The proposed Project would not result in a change in land use or introduce new vehicle trips and would be consistent with the roadway classifications for Avenue 50 in the City of Indio General Plan (a Boulevard) and City of La Quinta General Plan (a Primary Arterial from the intersection of Jefferson Avenue to Madison Street).

Based on the traffic data provided by Translutions, Inc.,[3] the proposed Project would add roadway capacity and decreases automobile travel due to added capacity in the area. In addition, because the Project also improves the bicycle and pedestrian network in the area, it also further reduces automobile travel and results in a net reduction of vehicle miles traveled (VMT) in the influence area (a 10-mile radius). Therefore, the Project would not result in long-term increases in emissions. Operational emissions would also include infrequent visits by vehicles driven by existing maintenance personnel and are considered negligible.

▪ Localized Significance Threshold Analysis

Background

As part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology[4] that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short- and long-term) to sensitive receptors. SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). The Project is located in SRA 30.

Short-Term Analysis

According to the LST methodology, only on-site emissions need to be analyzed. Emissions associated with vendor and worker trips are mobile source emissions that occur off site. The emissions analyzed under the LST methodology are NO_2, CO, PM-10, and PM-2.5. SCAQMD has provided LST lookup tables[5] to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project disturbs approximately 37.61 acres, the Project is linear and will progress in a linear fashion and disturb a smaller area per day. To be conservative, the one-acre LST lookup tables were utilized to estimate the construction emissions. Therefore, the one-acre LST Look-Up Table was compared with the on-site emissions estimated by CalEEMod to provide a conservative analysis.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). The closest sensitive receptors are residential houses and a church along Avenue 50, adjacent to the Project boundary. The closest receptor distance on the LST look-up tables is 25 meters. According to LST methodology, projects with boundaries closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters. Therefore, a receptor distance of 25 meters (82 feet) was used to ensure a conservative analysis. The results are summarized below.

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[3] Translutions, Inc., *Avenue 50 Widening between Jefferson Street to Botella Place in the Cities of Indio and La Quinta – VMT Analysis*, June 18, 2024.

[4] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. (Available at http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds, accessed April 5, 2024.)

[5] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

Table 3 – LST Results for Daily Construction Emissions

Pollutant	Peak Daily Emissions (lb/day)			
	NO_X	CO	PM-10	PM-2.5
LST Threshold for 1 acre at 25 meters	**132**	**878**	**4**	**3**
Grading 2025	**35.30**	**40.20**	**2.51**	**1.52**
Grading 2026	32.60	39.90	2.34	1.36
Grading 2027	30.50	39.80	2.21	1.24
Paving 2027	14.30	20.30	0.56	0.52
Maximum[1]	**35.30**	**40.20**	**2.51**	**1.52**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Note: [1] Maximum emissions are either the greater of grading in 2025, grading in 2026, grading in 2027, or paving in 2027 as these activities do not overlap. Maximum emissions are shown in bold.

Emissions from construction of the Project will be below the LST established by SCAQMD for the Project.

Long-Term Analysis

This Project involves the construction of roadway and drainage improvements, including utility relocation. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources (e.g. flares and turbines) and/or on-site mobile equipment or attracts mobile sources that may spend long periods of time idling at the site, such as warehouse/transfer facilities. The proposed Project does not include such uses. Therefore, due to the lack of stationary source emissions or on-site mobile equipment, no long-term LST analysis is needed.

CO Hot Spots Analysis

A carbon monoxide (CO) "hot spot" is a localized concentration of CO that is above the state or federal 1-hour or 8-hour ambient air quality standards (AAQS). Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles.

Based on the information presented below, a CO "hot spot" analysis is not needed to determine whether the addition of Project related traffic will contribute to an exceedance of either the state or federal AAQS for CO emissions in the Project area.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP)[6] and the Revised 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). [7] As discussed in the 2003 AQMP, peak carbon monoxide concentrations reported in the 1992 CO Plan in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections (2003 AQMP Appendix V, p. V-4-32). Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of the 1992 CO Plan and subsequent plan updates and air quality management plans.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Blvd. and Imperial Highway (Lynwood); Wilshire Blvd. and Veteran Ave. (Westwood); Sunset Blvd. and

[6] SCAQMD, *2003 Air Quality Management Plan, August 1, 2003.* (Available at http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2003-aqmp , accessed April 2, 2024.)

[7] SCAQMD, *Revision to the 1992 Carbon Monoxide Attainment Plan*, September 1994. (Available at SCAQMD.)

Highland Ave. (Hollywood); and La Cienega Blvd. and Century Blvd. (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated in the 1992 CO Plan and subsequent 2003 AQMP was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day (2003 AQMP Appendix V, Table 4-7). The Los Angeles County Metropolitan Transportation Authority (MTA)[8] evaluated the LOS in the vicinity of the Wilshire Blvd./Veteran Ave. intersection and found it to be level E at peak morning traffic and Level F at peak afternoon traffic (MTA, Exhibit 2-5 and 2-6). This hot spot analysis was conducted at intersections subject to extremes in vehicle volumes and vehicle congestion, and did not predict any violation of CO standards. The highest average daily traffic volumes on Avenue 50 are projected to occur in 2040 between Monroe Street and Jackson Street and would be approximately 22,000 trips, which is lower than the values studied by SCAQMD.[9] Therefore, it can reasonably be concluded that traffic on the Project roadway segments would not have daily traffic volumes exceeding those at the intersections modeled in the 2003 AQMP, nor would there be any reason unique to the meteorology to conclude that intersections or segments affected by the Project would yield higher CO concentrations if modeled in detail. Thus, the Project would not result in CO hot spots.

▪ Greenhouse Gas Analysis

Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. The City of Indio adopted the City of Indio Climate Action Plan (CAP)[10] on September 19, 2019, to support the GHG reduction goals of the statewide policies, which outlines a review process for evaluating GHG impacts and determining significance for CEQA purposes by either: (1) applying an emissions level that is determined to be less than significant for small projects, or (2) utilizing the Climate-Ready Development Review Checklist as evaluation of the new project effectiveness at reducing GHG emissions and how well the projects comply with the City's GHG emissions reduction targets. The City of Indio CAP followed the California Air Pollution Control Officers Association (CAPCOA) guidance for quantifying greenhouse gas emissions and reduction measures. The report references 900 $MTCO_2E$ as a conservative threshold for determining when further analysis is required. This threshold is intended as a bright-line test that would exempt projects that are too small to have significant impacts from further analysis. (CAP, p. 40)

Therefore, if Project-related emissions are below the 900 $MTCO_2E$ threshold, a project can be considered to have less than significant GHG impacts and no further analysis is required. The following analysis summarizes the CalEEMod output results for construction-related GHG emissions and present the GHG emissions estimates for the Project for CO_2, methane (CH_4), nitrous oxide (N_2O), Refrigerants (R), and CO_2E.[11]

Short-Term Analysis

Construction-Related Emissions

The CalEEMod model calculates GHG emissions from fuel usage by construction equipment and construction-related activities, like construction worker trips, for the Project. The CalEEMod estimate does not analyze emissions from construction-related electricity or natural gas. Construction-related electricity and natural gas emissions vary based on the amount of electric power used during construction and other unknown factors which make them too speculative to quantify.

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[8] Metropolitan Transportation Authority, *2004 Congestion Management Plan for Los Angeles County*, Adopted July 22, 2004. (Available at https://planning.lacity.gov/eir/CrossroadsHwd/deir/files/references/B12.pdf, accessed April 2, 2024.)

[9] City of Indio, *Final Environmental Impact Report for the City of Indio General Plan Update Indio, California*, June 2019. (Available at https://www.indio.org/home/showpublisheddocument/924/637874293008870000, accessed April 2, 2024.)

[10] City of Indio, City of Indio Climate Action Plan, September 2019. (Available at https://www.indio.org/home/showpublisheddocument/892/637874291154670000, accessed April 2, 2024.).

[11] CO_2E is the sum of CO_2 emissions estimated plus the sum of CH_4, R, and N_2O emissions estimated multiplied by their respective global warming potential (GWP).

Table 4 – Project Construction Equipment GHG Emissions

Year	Metric Tons per year (MT/yr)				
	Total CO_2	Total CH_4	Total N_2O	R	Total CO_2E
2025	369	0.01	0.01	0.07	372
2026	1,102	0.04	0.02	0.20	1,109
2027	115	0.00	0.00	0.02	116
Total	**1,586**	**0.05**	**0.03**	**0.29**	**1,597**
				Amortized[1]	**53.23**

Note: [1] Construction emissions were amortized over a 30-year period, as recommended by SCAQMD.

Evaluation of the table above indicates that an estimated 1,597 $MTCO_2E$ will occur from Project construction equipment over the course of the estimated construction period. The draft SCAQMD GHG threshold guidance document released in October 2008[12] recommends that construction emissions be amortized for a project lifetime of 30 years to ensure that GHG reduction measures address construction GHG emissions as part of the operational reduction strategies.

Long-Term Analysis

As stated above, the proposed Project would not result in a change in land use or introduce new vehicle trips and would be consistent with the roadway classifications in the City of Indio General Plan (a Boulevard) and the City of La Quinta General Plan (as a Primary Arterial from the intersection of Jefferson Avenue to Madison Street).

Because the Project improves the bicycle and pedestrian network in the area, it also reduces automobile travel and results in a net reduction of VMT in the City of Indio and La Quinta. Therefore, the Project would not result in long-term increases in GHG emissions. Operational emissions would also include infrequent visits by vehicles driven by existing maintenance personnel and are considered negligible.

Total Project GHG Emissions

The Project's emissions were compared to the Indio CAP's 900 $MTCO_2E$/yr threshold for projects that are too small to have significant impacts. Due to the estimated amount of amortized emissions from Project construction (**Table 4**) and negligible operational emissions from infrequent maintenance vehicles related to the roadway and drainage improvements, the proposed Project will not generate GHG emissions that exceed the screening threshold.

▪ Conclusion

The conclusion of this analysis indicates that construction and operation of the proposed Project will not exceed criteria pollutant thresholds established by SCAQMD on a regional or localized level. The Project will also not create a CO hot spot. The Project will also not exceed the CAP screening threshold meaning no further GHG analysis is required of the Project. No mitigation is required.

Should you have any questions, please contact me at (951) 686-1070.

[12] http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2

CALEEMOD OUTPUT FILES

Avenue 50 Improvements Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Avenue 50 Improvements
Construction Start Date	9/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	7.60
Location	33.685362917920315, -116.24326017738228
County	Riverside-Salton Sea
City	Indio
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5652
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas
App Version	2022.1.1.22

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
Road Widening	2.60	Mile	37.6	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.	5.16	4.35	36.1	45.5	0.08	1.55	1.81	3.35	1.43	0.31	1.73	—	9,417	9,417	0.36	0.17	4.27	9,481
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.09	4.28	36.2	43.4	0.08	1.55	1.81	3.35	1.43	0.31	1.73	—	9,302	9,302	0.37	0.17	0.11	9,361
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.45	2.90	23.9	31.0	0.06	0.99	1.29	2.27	0.91	0.22	1.13	—	6,657	6,657	0.25	0.12	1.20	6,700
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.53	4.36	5.66	0.01	0.18	0.23	0.41	0.17	0.04	0.21	—	1,102	1,102	0.04	0.02	0.20	1,109

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	5.16	4.35	36.1	45.5	0.08	1.55	1.81	3.35	1.43	0.31	1.73	—	9,417	9,417	0.36	0.17	4.27	9,481
2026	4.86	4.09	33.4	44.8	0.08	1.38	1.81	3.19	1.27	0.31	1.58	—	9,388	9,388	0.36	0.17	3.90	9,451
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	5.09	4.28	36.2	43.4	0.08	1.55	1.81	3.35	1.43	0.31	1.73	—	9,302	9,302	0.37	0.17	0.11	9,361
2026	4.82	4.05	33.5	42.8	0.08	1.38	1.81	3.19	1.27	0.31	1.58	—	9,275	9,275	0.34	0.17	0.10	9,334
2027	4.61	3.87	31.3	42.5	0.08	1.25	1.81	3.05	1.15	0.31	1.45	—	9,253	9,253	0.34	0.16	0.09	9,310
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.22	1.02	8.64	10.5	0.02	0.37	0.43	0.80	0.34	0.07	0.41	—	2,232	2,232	0.09	0.04	0.44	2,246
2026	3.45	2.90	23.9	31.0	0.06	0.99	1.29	2.27	0.91	0.22	1.13	—	6,657	6,657	0.25	0.12	1.20	6,700
2027	0.31	0.26	2.15	3.11	0.01	0.08	0.10	0.18	0.08	0.02	0.10	—	695	695	0.02	0.01	0.14	700
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.22	0.19	1.58	1.92	< 0.005	0.07	0.08	0.15	0.06	0.01	0.08	—	369	369	0.01	0.01	0.07	372
2026	0.63	0.53	4.36	5.66	0.01	0.18	0.23	0.41	0.17	0.04	0.21	—	1,102	1,102	0.04	0.02	0.20	1,109
2027	0.06	0.05	0.39	0.57	< 0.005	0.02	0.02	0.03	0.01	< 0.005	0.02	—	115	115	< 0.005	< 0.005	0.02	116

3. Construction Emissions Details

3.1. Linear, Grading & Excavation (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	4.83	4.05	35.3	40.2	0.08	1.54	—	1.54	1.42	—	1.42	—	8,067	8,067	0.33	0.07	—	8,095

Dust From Material Movement	—	—	—	—	—	—	0.97	0.97	—	0.10	0.10	—	—	—	—	—	—	—
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	4.83	4.05	35.3	40.2	0.08	1.54	—	1.54	1.42	—	1.42	—	8,067	8,067	0.33	0.07	—	8,095
Dust From Material Movement	—	—	—	—	—	—	0.97	0.97	—	0.10	0.10	—	—	—	—	—	—	—
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	1.15	0.97	8.42	9.61	0.02	0.37	—	0.37	0.34	—	0.34	—	1,926	1,926	0.08	0.02	—	1,933
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.54	1.75	< 0.005	0.07	—	0.07	0.06	—	0.06	—	319	319	0.01	< 0.005	—	320
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 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	0.27	5.01	0.00	0.00	0.69	0.69	0.00	0.16	0.16	—	780	780	0.03	0.03	2.70	791
Vendor	0.03	0.02	0.60	0.27	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	570	570	0.01	0.08	1.57	594
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	0.21	0.30	2.84	0.00	0.00	0.69	0.69	0.00	0.16	0.16	—	663	663	0.03	0.03	0.07	672
Vendor	0.03	0.02	0.65	0.27	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	570	570	0.01	0.08	0.04	593
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	0.07	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	169	169	0.01	0.01	0.28	172
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	< 0.005	0.02	0.16	142
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	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.0	28.0	< 0.005	< 0.005	0.05	28.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.03	23.5
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. Linear, Grading & Excavation (2026) - 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	4.57	3.83	32.6	39.9	0.08	1.37	—	1.37	1.26	—	1.26	—	8,066	8,066	0.33	0.07	—	8,093
Dust From Material Movement	—	—	—	—	—	—	0.97	0.97	—	0.10	0.10	—	—	—	—	—	—	—
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	4.57	3.83	32.6	39.9	0.08	1.37	—	1.37	1.26	—	1.26	—	8,066	8,066	0.33	0.07	—	8,093
Dust From Material Movement	—	—	—	—	—	—	0.97	0.97	—	0.10	0.10	—	—	—	—	—	—	—
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	3.26	2.74	23.3	28.5	0.05	0.98	—	0.98	0.90	—	0.90	—	5,761	5,761	0.23	0.05	—	5,781
Dust From Material Movement	—	—	—	—	—	—	0.69	0.69	—	0.07	0.07	—	—	—	—	—	—	—
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	0.60	0.50	4.25	5.20	0.01	0.18	—	0.18	0.16	—	0.16	—	954	954	0.04	0.01	—	957
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	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	0.26	0.24	0.25	4.65	0.00	0.00	0.69	0.69	0.00	0.16	0.16	—	763	763	0.03	0.03	2.44	774
Vendor	0.03	0.02	0.58	0.25	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	559	559	0.01	0.08	1.46	584
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	0.22	0.20	0.27	2.64	0.00	0.00	0.69	0.69	0.00	0.16	0.16	—	650	650	0.01	0.03	0.06	658
Vendor	0.03	0.02	0.62	0.26	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	560	560	0.01	0.08	0.04	583
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	0.17	0.15	0.18	2.35	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	496	496	0.01	0.02	0.75	502
Vendor	0.02	0.01	0.43	0.18	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	400	400	< 0.005	0.05	0.45	416
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	0.03	0.03	0.03	0.43	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	82.1	82.1	< 0.005	< 0.005	0.12	83.2
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	66.2	66.2	< 0.005	0.01	0.07	69.0
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

3.5. Linear, Grading & Excavation (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.37	3.67	30.5	39.8	0.08	1.24	—	1.24	1.14	—	1.14	—	8,066	8,066	0.33	0.07	—	8,094
Dust From Material Movement	—	—	—	—	—	—	0.97	0.97	—	0.10	0.10	—	—	—	—	—	—	—
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	0.13	0.11	0.89	1.17	< 0.005	0.04	—	0.04	0.03	—	0.03	—	237	237	0.01	< 0.005	—	238
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 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	0.02	0.02	0.16	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.2	39.2	< 0.005	< 0.005	—	39.3
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.25	2.45	0.00	0.00	0.69	0.69	0.00	0.16	0.16	—	637	637	0.01	0.02	0.06	645
Vendor	0.03	0.02	0.59	0.24	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	547	547	0.01	0.07	0.04	569
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	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	0.03	20.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.02	16.7
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	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.66	2.66	< 0.005	< 0.005	< 0.005	2.77
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. Linear, Paving (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.98	1.66	14.3	20.3	0.04	0.56	—	0.56	0.52	—	0.52	—	4,163	4,163	0.17	0.03	—	4,177

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	0.16	0.14	1.17	1.67	< 0.005	0.05	—	0.05	0.04	—	0.04	—	342	342	0.01	< 0.005	—	343
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	0.21	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
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	0.13	0.12	0.15	1.52	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	394	394	0.01	0.02	0.04	399
Vendor	0.03	0.02	0.59	0.24	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	547	547	0.01	0.07	0.04	569
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	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.6	34.6	< 0.005	< 0.005	0.05	35.1
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.0	45.0	< 0.005	0.01	0.05	46.8
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	—	5.74	5.74	< 0.005	< 0.005	0.01	5.81
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.44	7.44	< 0.005	< 0.005	0.01	7.75
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	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
Linear, Grading & Excavation	Linear, Grading & Excavation	9/1/2025	1/15/2027	5.00	360	—
Linear, Paving	Linear, Paving	1/16/2027	2/26/2027	5.00	30.0	—

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
Linear, Grading & Excavation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Graders	Diesel	Average	2.00	8.00	148	0.41

Linear, Grading & Excavation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Signal Boards	Electric	Average	4.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Grading & Excavation	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Linear, Grading & Excavation	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Linear, Paving	Signal Boards	Electric	Average	4.00	8.00	6.00	0.82
Linear, Paving	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Paving	Scrapers	Diesel	Average	1.00	8.00	423	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	52.5	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	18.0	10.2	HHDT,MHDT

Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	32.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	18.0	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, 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 (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grading & Excavation	—	—	37.6	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
Road Widening	37.6	64%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	117	457	0.03	< 0.005
2026	117	457	0.03	< 0.005
2027	235	457	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	23.5	annual days of extreme heat
Extreme Precipitation	0.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.14	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	1	0	0	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	0	0	0	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	1	1	1	2
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	1	1	1	2
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	91.1
AQ-PM	8.11
AQ-DPM	43.5
Drinking Water	72.0
Lead Risk Housing	4.10
Pesticides	72.9
Toxic Releases	2.83
Traffic	9.28
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	26.8
Cardio-vascular	32.6
Low Birth Weights	4.36
Socioeconomic Factor Indicators	—
Education	30.4
Housing	42.8
Linguistic	86.9
Poverty	40.8
Unemployment	64.5

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	64.46811241
Employed	65.58449891
Median HI	45.0019248
Education	—
Bachelor's or higher	44.23200308
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	65.16104196
Active commuting	30.73270884
Social	—
2-parent households	20.0436289
Voting	42.65366354
Neighborhood	—
Alcohol availability	83.31836263
Park access	2.194276915
Retail density	14.80816117
Supermarket access	22.41755422
Tree canopy	26.88310022
Housing	—
Homeownership	46.43911202
Housing habitability	46.11831131
Low-inc homeowner severe housing cost burden	33.09380213
Low-inc renter severe housing cost burden	69.36994739
Uncrowded housing	50.16040036

Health Outcomes	—
Insured adults	38.59874246
Arthritis	5.6
Asthma ER Admissions	26.7
High Blood Pressure	8.1
Cancer (excluding skin)	7.2
Asthma	58.2
Coronary Heart Disease	6.8
Chronic Obstructive Pulmonary Disease	23.6
Diagnosed Diabetes	41.8
Life Expectancy at Birth	83.2
Cognitively Disabled	62.4
Physically Disabled	29.8
Heart Attack ER Admissions	18.7
Mental Health Not Good	63.6
Chronic Kidney Disease	20.1
Obesity	37.5
Pedestrian Injuries	19.6
Physical Health Not Good	47.6
Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	54.2
Current Smoker	62.2
No Leisure Time for Physical Activity	49.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	17.1
Elderly	4.2
English Speaking	39.6
Foreign-born	48.8
Outdoor Workers	41.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	62.8
Traffic Density	21.3
Traffic Access	23.0
Other Indices	—
Hardship	43.5
Other Decision Support	—
2016 Voting	62.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	42.0
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	Per Engineer Estimates
Construction: Off-Road Equipment	Per engineering estimates
Construction: Trips and VMT	Two (2) daily vendor trips added to each phase for water trucks per Rule 403. 18 total vendor trips added per day
Construction: Paving	Paved area acreage = 24.057.