- Attainment of the 1-hour Ozone standard by 2022 with no reliance on "black box" future technology (CAA Section 182(e)(5) measures). While not directly correlated to GHG emissions, the measures rely heavily on zero emission technologies that will also significantly reduce GHG emissions.

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to project construction or operations impacting reduction of GHG emissions.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate new development projects within the Basin, such as project. Instead, SCAQMD published the *CEQA Air Quality Handbook* (SCAQMD 1993) to assist lead agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential GHG and air quality impacts of projects proposed in the Basin. The *CEQA Air Quality Handbook* provides standards, methodologies, and procedures that can be used in conducting GHG analyses in environmental impact reports and were used extensively in the preparation of this analysis. SCAQMD is currently in the process of replacing the *CEQA Air Quality Handbook* with the *Air Quality Analysis Guidance Handbook.*

While the replacement *Air Quality Analysis Guidance Handbook* is being updated, supplemental guidance/information on the SCAQMD website includes: (1) Emission FACtors (EMFAC) on-road vehicle air pollutant and GHG emission factors, (2) GHG analysis guidance, (3) mitigation measures and control efficiencies, (5) off-road mobile source air pollutant and GHG emission factors, and (8) updated SCAQMD Air Quality Significance Thresholds. SCAQMD also recommends using approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod). These recommendations were followed in the preparation of this analysis.

County of San Bernardino GHG Reduction Plan

The County completed a GHG Emissions Reduction Plan Update in June 2021 (County of San Bernardino 2021), which sets forth an emissions reduction targets, emissions reduction measures, and action steps to assist the County to demonstrate consistency with California's Global Warming Solutions Act (Senate Bill 32). Together with the GHG Emissions Reduction Plan, the County adopted the GHG DRP (County of San Bernardino 2021) in 2021. The DRP procedures need to be followed to evaluate GHG impacts and determine significance for CEQA purposes. All projects need to apply the GHG performance standards identified in the DRP and comply with State requirements.

THRESHOLDS OF SIGNIFICANCE

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health within an adequate margin of safety (SCAQMD 2017), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Emissions Thresholds

Table 1 lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table 1: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOC	NOx	CO	PM_{10}	$PM_{2.5}$	SOx
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD. Air Quality Significance Thresholds. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf (accessed May 2025).

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which SCAQMD developed and that apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact. Note that because the proposed project consists of improvements to an existing storm drainage system, operational activities providing maintenance to the storm drainage system are exactly the same as current maintenance activities. Therefore, the proposed project will not generate any new operational air quality or GHG emissions impacts. For this reason, the analysis focuses on construction period impacts to air quality and GHG emissions.

Localized Significance Thresholds

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008 (SCAQMD 2008), recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of the NAAQS or the CAAQS for CO, NO_2, PM_{10} and $PM_{2.5}$, as shown in previously referenced Table A. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA is the East San Bernardino Valley area (SRA 35).

The LST Methodology uses look-up tables based on site acreage to determine the significance of emissions for CEQA purposes. Based on the SCAQMD recommended methodology and the construction equipment planned, no more than 1 acre would be disturbed on any one day; thus, the 1-acre LSTs have been used for construction emissions. On-site operational emissions would occur from stationary and mobile sources. Because the project operation area would be less than 1 acre, the 1-acre thresholds would apply during project operations.

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. As described above, the closest residences are within 20 feet (6 meters) from the southern boundary of construction. SCAQMD LST Methodology specifies, “Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.” Therefore, the following emissions thresholds apply during project construction and operation:

- Construction LST (1 acre, 25 meters, East San Bernardino Valley):
  - 118 pounds per day (lbs/day) of NOx.
  - 775 lbs/day of CO.
  - 4 lbs/day of PM_{10}.
  - 4 lbs/day of $PM_{2.5}$.
- Operation LST (1 acre, 25 meters, East San Bernardino Valley):
  - 118 lbs/day of NOx.
  - 775 lbs/day of CO.
  - 1 lb/day of PM_{10}.
  - 1 lb/day of $PM_{2.5}$.

GHG Emissions Thresholds

State CEQA Guidelines Section 15064(b) provides that the “determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data,” and further, states that an “ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.”

Appendix G of the *CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would:

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

Currently, there is no statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in the State.

The lead agency for the project is San Bernardino County, which has adopted its GHG Emissions Reduction Plan Update and GHG DRP (County of San Bernardino 2021) in 2021. The DRP procedures need to be followed to evaluate GHG impacts and determine significance for CEQA purposes. All projects need to apply the GHG performance standards identified in the DRP and comply with State requirements. For projects exceeding the review standard of 3,000 MT CO_2e per year, the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions is required. If the GHG emissions from the project are less than 3,000 MT CO_2e per year and the project would apply GHG performance standards and State requirements, project-level and cumulative GHG emissions would be less than significant.

IMPACTS

Calculations of air pollutant and GHG emissions in the following analysis were conducted using the California Emissions Estimator Model Version 2022.1.1.29 (CALEEMod2022).

Short-Term Construction Impacts

Construction activities produce combustion emissions from various sources (utility engines, tenant improvements, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

The most recent version of CalEEMod (Version 2022.1.1.29) was used to develop the construction equipment inventory and calculate the construction emissions. The emissions shown in Table 2 are the combination of the on-site and off-site emissions from the CalEEMod output tables. No exceedances of any criteria pollutants are expected. The CalEEMod output is included in Appendix A.

Table 2: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Site Preparation	0.09	8.81	9.54	0.04	0.29	0.27
Excavation/Trenching	1.65	10.25	12.41	0.04	0.38	0.35
Installation/Construction	1.88	12.52	14.35	0.05	0.48	0.44
Paving	1.82	12.37	15.80	0.05	0.47	0.44
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00
Peak Daily	**1.88**	**12.52**	**15.80**	**0.05**	**0.48**	**0.44**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by MHC (May 2025).

CO = carbon monoxide
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

Localized Impacts Analysis

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. Table 3 shows that the construction emission rates would not exceed the LSTs for the existing residences near the project site. Table 3 also shows that the emissions of the pollutants on the peak day of construction would result in concentrations of pollutants at the nearest residences that are all below SCAQMD thresholds of significance. Note that the LST was set at 5-acres since the 15-acre project is divided into 3 phases and land clearing and grading, the phases of construction with the highest emissions, would not disturb more than 5-acres per day.

Table 3: Construction Localized Impacts Analysis

Emissions Sources	NOx	CO	PM_{10}	$PM_{2.5}$
Construction Emissions	1.88	15.80	0.48	0.44
LST	118.00	863.00	**5.00**	**4.00**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by MHC (May 2025).

Note: Source Receptor Area 33 – Southwest San Bernardino Vally, 1 acre, 25 meters.

CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Odors from Construction Activities

Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. However, the construction activity would cease to occur after construction is completed. No other sources of objectionable odors have been identified for the proposed project, and no mitigation measures are required.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project.

Construction Emissions Conclusions

Previously referenced Tables 2 and 3 show that daily regional construction emissions and localized emissions would not exceed the daily thresholds or localized significance thresholds established by SCAQMD; thus, during construction, there would be no regional or localized impacts.

Long-Term Operational Impacts

The current maintenance activities associated with the existing storm drainage system would continue after completion of the proposed project. Since no new operational activities occur as a result of the proposed project, no new long-term operational impacts occur.

AIR QUALITY MANAGEMENT PLAN CONSISTENCY

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The AQMP is based on regional growth projections developed by SCAG. The proposed project is approximately 1.5 miles of storm drain improvements. Thus, the proposed project would not be defined as a regionally significant project under CEQA; therefore, it does not meet SCAG's Intergovernmental Review criteria. The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.

GREENHOUSE GAS EMISSIONS

In evaluating the Project's GHG emissions impact, this analysis tiers from the San Bernadino County GHG Reduction Plan Update.

The County's GHG Emissions Reduction Plan Update includes the Performance Standard that will reduce 7,891 Metric Tons of Carbon Dioxide Equivalents (MT CO2e) per year from new development by 2030. The Counties Development Review Process (DRP) procedures for evaluating GHG impacts and determining significance for CEQA purposes is streamlined by utilizing (1) applying a uniform set of performance standards to all development projects, and (2) utilizing the GHG Reduction Plan Screening Tables to mitigate project GHG emissions. Projects will have the option of preparing a project-specific technical analysis to quantify and mitigate GHG emissions. A review standard of 3,000 MTCO2e per year is used to identify projects that require the use of the Screening Tables.

For Projects that are below 3,000 MTCO2e per year are considered less than significant and consistent with the County's GHG Emissions Reduction Plan Update if they incorporate into the Project the following criteria:

- Waste stream reduction: The developer shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.
- Vehicle Trip Reduction: The developer shall provide to all tenants and homeowners County approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, and/or providing a web site or message board for coordinating rides.
- Landscape Equipment: he developer shall require in the landscape maintenance contract and/or in onsite procedures that a minimum of 20% of the landscape maintenance equipment shall be electric-powered (not applicable to the proposed project).
- Meet Title 24 Energy Efficiency requirements (not applicable to the proposed project).

Project generated total GHG emissions are calculated at 5,221 MT CO2e during construction. Following the SCAQMD methodology, GHG emissions associated with construction activities are divided by 25 years which is the anticipated economic life of the Project. Using this methodology, the proposed project will generate 208.84 MT CO2e per year which is below the 3,000 MTCO2e review standard. Therefore, with the applicable criteria shown in the bullet points above incorporated into the project, the project is consistent with the County's GHG Reduction Plan Update and GHG emissions are considered less than significant.

ATTACHMNET A:

CALEEMOD Version 2022.1.1.29

Output Reports

Grove Basin Storm Drain Improvement Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Grove Basin Storm Drain Improvement Project
Construction Start Date	1/5/2026
Lead Agency	San Bernardino County Flood Control
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	9.20
Location	34.01148861809304, -117.62816822085699
County	San Bernardino-South Coast
City	Ontario
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5260
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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
User Defined Linear	1.50	Mile	0.72	0.00	—	—	—	Storm Drain

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Mit.	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.88	12.5	15.8	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Mit.	1.88	12.5	15.8	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.13	7.30	8.69	0.03	0.27	0.25	—	3,073	3,073	0.12	0.02	0.00	3,083
Mit.	1.13	7.30	8.69	0.03	0.27	0.25	—	3,073	3,073	0.12	0.02	0.00	3,083
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	1.33	1.59	0.01	0.05	0.05	—	509	509	0.02	< 0.005	0.00	511

Mit.	0.21	1.33	1.59	0.01	0.05	0.05	—	509	509	0.02	< 0.005	0.00	511
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—	—	3,000
Unmit.	No	No	No	No	No	No	—	—	—	—	—	—	Yes
Mit.	No	No	No	No	No	No	—	—	—	—	—	—	Yes
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—	—	—	—	—	—	3,000
Unmit.	No	No	No	No	No	No	—	—	—	—	—	—	Yes
Mit.	No	No	No	No	No	No	—	—	—	—	—	—	Yes

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.88	12.5	15.8	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.13	7.30	8.69	0.03	0.27	0.25	—	3,073	3,073	0.12	0.02	0.00	3,083
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.21	1.33	1.59	0.01	0.05	0.05	—	509	509	0.02	< 0.005	0.00	511

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.88	12.5	15.8	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	0.00	5,221
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.13	7.30	8.69	0.03	0.27	0.25	—	3,073	3,073	0.12	0.02	0.00	3,083
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.21	1.33	1.59	0.01	0.05	0.05	—	509	509	0.02	< 0.005	0.00	511

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.34	8.80	9.54	0.03	0.29	0.27	—	3,235	3,235	0.13	0.03	—	3,246

Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.58	0.63	< 0.005	0.02	0.02	—	213	213	0.01	< 0.005	—	213
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.11	0.11	< 0.005	< 0.005	< 0.005	—	35.2	35.2	< 0.005	< 0.005	—	35.3
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.2. Linear, Grubbing & Land Clearing (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.34	8.80	9.54	0.03	0.29	0.27	—	3,235	3,235	0.13	0.03	—	3,246
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.58	0.63	< 0.005	0.02	0.02	—	213	213	0.01	< 0.005	—	213
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.11	0.11	< 0.005	< 0.005	< 0.005	—	35.2	35.2	< 0.005	< 0.005	—	35.3

Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

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	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.65	10.2	12.4	0.04	0.38	0.35	—	4,513	4,513	0.18	0.04	—	4,528
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	10.2	12.4	0.04	0.38	0.35	—	4,513	4,513	0.18	0.04	—	4,528
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	3.03	3.67	0.01	0.11	0.10	—	1,335	1,335	0.05	0.01	—	1,340
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.55	0.67	< 0.005	0.02	0.02	—	221	221	0.01	< 0.005	—	222
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.4. Linear, Grading & Excavation (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	10.2	12.4	0.04	0.38	0.35	—	4,513	4,513	0.18	0.04	—	4,528
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	10.2	12.4	0.04	0.38	0.35	—	4,513	4,513	0.18	0.04	—	4,528
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	3.03	3.67	0.01	0.11	0.10	—	1,335	1,335	0.05	0.01	—	1,340
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.55	0.67	< 0.005	0.02	0.02	—	221	221	0.01	< 0.005	—	222
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.5. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	—	5,221
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	—	5,221

Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	2.47	2.83	0.01	0.09	0.09	—	1,026	1,026	0.04	0.01	—	1,030
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.45	0.52	< 0.005	0.02	0.02	—	170	170	0.01	< 0.005	—	171
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.6. Linear, Drainage, Utilities, & Sub-Grade (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	—	5,221
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	12.5	14.4	0.05	0.48	0.44	—	5,204	5,204	0.21	0.04	—	5,221
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.37	2.47	2.83	0.01	0.09	0.09	—	1,026	1,026	0.04	0.01	—	1,030
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.45	0.52	< 0.005	0.02	0.02	—	170	170	0.01	< 0.005	—	171
Dust From Material Movement	—	—	—	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.7. Linear, Paving (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.82	12.4	15.8	0.05	0.47	0.44	—	5,054	5,054	0.21	0.04	—	5,071
Architectural Coatings	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.22	1.56	< 0.005	0.05	0.04	—	498	498	0.02	< 0.005	—	500
Architectural Coatings	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.22	0.28	< 0.005	0.01	0.01	—	82.5	82.5	< 0.005	< 0.005	—	82.8

Architectural Coatings	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

3.8. Linear, Paving (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.82	12.4	15.8	0.05	0.47	0.44	—	5,054	5,054	0.21	0.04	—	5,071
Architectural Coatings	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	1.22	1.56	< 0.005	0.05	0.04	—	498	498	0.02	< 0.005	—	500
Architectural Coatings	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.22	0.28	< 0.005	0.01	0.01	—	82.5	82.5	< 0.005	< 0.005	—	82.8
Architectural Coatings	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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
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

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	ROG	NOx	CO	SO2	PM10T	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	ROG	NOx	CO	SO2	PM10T	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	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestere	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestere	—	—	—	—	—	—	—	—	—	—	—	—	—
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, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	1/5/2026	2/7/2026	5.00	24.0	Clearing pavement of existing roadway
Linear, Grading & Excavation	Linear, Grading & Excavation	2/8/2026	7/9/2026	5.00	108	Excavating for storm dain
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	7/10/2026	10/18/2026	5.00	72.0	Installation of storm drain
Linear, Paving	Linear, Paving	10/19/2026	12/8/2026	5.00	36.0	filling and paving

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, Grubbing & Land Clearing	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Linear, Grubbing & Land Clearing	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Linear, Grading & Excavation	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Grading & Excavation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Linear, Drainage, Utilities, & Sub-Grade	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Linear, Drainage, Utilities, & Sub-Grade	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	6.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Linear, Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Linear, Paving	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Linear, Grubbing & Land Clearing	Tractors/Loaders/Back	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Linear, Grubbing & Land Clearing	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Linear, Grading & Excavation	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Linear, Grading & Excavation	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Grading & Excavation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Linear, Drainage, Utilities, & Sub-Grade	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Linear, Drainage, Utilities, & Sub-Grade	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	6.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Linear, Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Linear, Paving	Off-Highway Trucks	Diesel	Average	3.00	8.00	376	0.38
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—

Linear, Grubbing & Land Clearing	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT

Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	0.00	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	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

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

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)
Linear, Paving	0.00	0.00	0.00	0.00	1.50

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)
Linear, Grubbing & Land Clearing	0.00	0.00	0.72	0.00	—
Linear, Grading & Excavation	0.00	0.00	0.72	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	0.00	0.00	0.72	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
User Defined Linear	0.72	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	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

5.18.1.2. Mitigated

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

5.18.1.2. Mitigated

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)

5.18.2.2. Mitigated

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	19.8	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	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	2	2	0	N/A
Extreme Precipitation	2	4	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	2	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	3	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	2	0	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	2	2	1	3
Extreme Precipitation	2	4	1	4
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	2	1	3
Flooding	N/A	N/A	N/A	N/A
Drought	1	3	1	3
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	2	1	3

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	80.1

AQ-PM	95.9
AQ-DPM	61.4
Drinking Water	99.7
Lead Risk Housing	10.0
Pesticides	76.9
Toxic Releases	70.5
Traffic	12.6
Effect Indicators	—
CleanUp Sites	19.0
Groundwater	97.8
Haz Waste Facilities/Generators	63.9
Impaired Water Bodies	43.8
Solid Waste	95.7
Sensitive Population	—
Asthma	42.6
Cardio-vascular	67.7
Low Birth Weights	45.9
Socioeconomic Factor Indicators	—
Education	52.1
Housing	11.2
Linguistic	75.8
Poverty	34.7
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	80.61080457
Employed	84.28076479
Median HI	74.02797382
Education	—
Bachelor's or higher	64.24996792
High school enrollment	100
Preschool enrollment	21.59630438
Transportation	—
Auto Access	80.12318748
Active commuting	28.08931092
Social	—
2-parent households	68.63852175
Voting	58.7963557
Neighborhood	—
Alcohol availability	77.23598101
Park access	50.75067368
Retail density	13.56345438
Supermarket access	57.55164892
Tree canopy	14.56435262
Housing	—
Homeownership	67.43231105
Housing habitability	76.73553189
Low-inc homeowner severe housing cost burden	83.54933915
Low-inc renter severe housing cost burden	44.41165148
Uncrowded housing	60.77248813
Health Outcomes	—
Insured adults	78.89131272
Arthritis	80.8

Asthma ER Admissions	59.0
High Blood Pressure	87.7
Cancer (excluding skin)	71.8
Asthma	55.1
Coronary Heart Disease	88.8
Chronic Obstructive Pulmonary Disease	74.0
Diagnosed Diabetes	73.9
Life Expectancy at Birth	56.4
Cognitively Disabled	91.4
Physically Disabled	90.7
Heart Attack ER Admissions	29.6
Mental Health Not Good	53.9
Chronic Kidney Disease	85.5
Obesity	57.9
Pedestrian Injuries	43.5
Physical Health Not Good	62.9
Stroke	84.7
Health Risk Behaviors	—
Binge Drinking	29.5
Current Smoker	54.4
No Leisure Time for Physical Activity	61.9
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	11.1
Elderly	89.5
English Speaking	63.5
Foreign-born	35.4

Outdoor Workers	64.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	72.5
Traffic Density	14.9
Traffic Access	23.0
Other Indices	—
Hardship	39.2
Other Decision Support	—
2016 Voting	78.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	70.0
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	Better description of work
Construction: Off-Road Equipment	Equipment list for installation of storm drain improvements
Construction: Architectural Coatings	Painting lines in roadway after paving

Scientific Name	Common Name	Status	PTO	Rationale
Athene cunicularia	burrowing owl	SE (candidate); BLM:S; CDFW:SSC; USFWS:BCC	**Likely**	The general area contains potentially suitable habitat, including open fields with low growing vegetation. The extent of potentially suitable habitat actually inside the study area is limited, but one potential burrow was observed within the boundary, on the edge of a suitable field - INACTIVE
Laterallus jamaicensis coturniculus	California black rail	ST; BLM:S; CDFW:FP; IUCN:EN	**Does Not Occu**	No suitable habitat; prefers wetlands with dense marshy grasses
Polioptila californica californica	coastal California gnatcatcher	FT; CDFW:SSC	**Does Not Occu**	No suitable habitat; prefers scrubland
Aquila chrysaetos	golden eagle	BLM:S; CDF:S; CDFW:FP; CDFW:WL	**Does Not Occu**	No suitable habitat; nests high up on steep cliff faces, foraging over grassland/shrubland habitats
Buteo swainsoni	Swainson's hawk	ST; BLM:S;	**Unlikely**	Suitable habitat potentially exists in the surrounding agricultural fields, but the habitat immediately adjacent to this study area is highly developed and/or fragmented with few large, open expanses.
Agelaius tricolor	tricolored blackbird	ST; BLM:S; CDFW:SSC; USFWS:BCC; IUCN:EN	**Unlikely**	Potentially suitable habitat exists in the surrounding areas due to the presence of dairy farms and agricultural fields. Thus, it's possible, but unlikely that TRBL would be using the habitat within this study area beyond just flying over; as the study area is along a busy road and is highly disturbed/developed.
Setophaga petechia	yellow warbler	CDFW:SSC	**Occurs**	One patch along the side of the road is dense with eucalyptus and other tall trees, suitable for YEWA; one individual detected.
Calystegia felix	lucky morning-glory	CRPR: 1B.1	**Unlikely**	Potentially suitable habitat is highly disturbed and fragmented. Species prefers habitat types associated with water such as meadows, seeps, marshes, and riparian scrubland.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	CRPR: 4.3	**Unlikely**	Available habitat is limited and highly disturbed, prone to high foot traffic and/or grazing, with little vegetation, dominated by nonnative species. This species prefers chaparral and coastal scrubland.
Sidalcea neomexicana	salt spring checkerbloom	CRPR: 2B.2; USFS:S	**Does Not Occu**	No suitable habitat in the immediate vicinity. Prefers alkaline flats/springs and marshes. Available habitat is limiited and highly disturbed.
Symphyotrichum defoliatum	San Bernardino aster	CRPR: 1B.2; BLM:S; USFS:S	**Unlikely**	Potentially suitable habitat is limited and highly disturbed.

Bombus crotchii	Crotch's bumble bee	SE (candidate); IUCN:EN	**Unlikely**	Potentially suitable habitat is limited and low quality, consisting of highly fragmented and disturbed habitat along the sides of the road, containing little vegetation and rpedominantly nonnative species; lacking their favorite plant species.
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	FE	**Does Not Occu**	Restricted to Delhi sand environment with limited disturbance, prefering native scrub vegetation. Available habitat is highly developed and disturbed, along the sides of the road, containing little vegetation and predominantly nonative species.
Antrozous pallidus	pallid bat	BLM:S; CDFW:SSC; USFS:S	**Unlikely**	Potentially suitable habitat likely exists in some of the surrounding areas, as they can be found in open grasslands and can use day roosts that include building crevices; but the habitat within and immediately adjacent to the survey area is highly developed/disturbed.
Arizona elegans occidentalis	California glossy snake	CDFW:SSC	**Unlikely**	Habitat within the survey area is highly disturbed and developed. Unlikely to occur, as they inhabits arid scrubland, grassland, and rocky washes; prefering open areas with loose soils.
Anniella stebbinsi	Southern California legless lizard	CDFW:SSC; USFS:S	**Unlikely**	Potentially suitable habitat is limited and low quality. Highly developed and disturbed habitat along the sides of the road, containing little vegetation. They can be found in a variety of habitat types but require vegetation cover as they are commonly found under downed trees, leaf litter, rocks, and similar objects.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024 Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-S-01 | Date and Time: 5/8/2025 1045

Location (lat/long): 34.009058 -117.628162 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ______

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Cement-lined ditch channel along the side of the road, with a built up dirt bank on the E side, sediment depositional features + erosional features. Also vegetation indicators including changes in vegetation density, vegetation matting. Water staining and pooling also observed.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: ______
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ______
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [X] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [X] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ______ *to* ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ______ **to** ______
- [X] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Other vegetation observations**
- [/] **Vegetation matted down and/or bent**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [ ] **Leaf litter disturbed or washed away**
- [X] **Water staining**

Other observed indicators? Describe: NA

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Project ID #: SBGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

OHWM determined largely by changes in the slope of the bank at the OHWM, changes in vegetation density at the OHWM, vegetation matting and pooling below the OHWM, and water staining at and below the OHWM.

Additional observations or notes

Roadside ditch, cement-lined with a built up vegetated berm on one bank (E bank). Accumulated soil inside the cement channel has resulted in changes in vegetation density, erosional and depositional features. The channel has upstream connectivity, through culverts, and is fed by at least two irrigation channels further upstream.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-01_01	Culvert at upstream end of this channel segment. Change in the slope of bank is seen from the shape of the cement channel. Water staining can be seen on the west (left) bank. Pooling also visible.
SBGB-S-01_02	Changes in the density of vegetation can be seen in the channel, dense grasses along bed to no vegetation on banks. Human-made berm on the E bank + cement "levee" on W bank.
SBGB-S-01_03	Vegetation matted down and bent, can be seen in the channel, near the bottom right of the photo.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024
Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-S-02 | Date and Time: 5/5/2025 1507

Location (lat/long): 34.002572 -117.628100 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ______

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc. Man-made roadside gutter with a tall curb as the E bank and a slope in the asphalt as the W bank, with some depositional features as sediment is deposited and accumulated.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic Indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: ______
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ______
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ______ *to* ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ______ **to** ______
- [ ] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe: NA

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Project ID #: SBGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

The OHWM is determined by the shape of the channel and changes in the slope at the OHWM, as well as the presence of wracking, leaf litter being washed away, and mud cracking below the OHWM.

Additional observations or notes Roadside gutter / cement-lined ditch with a tall curb as the E bank. Upstream connectivity exists by way of a culvert connecting to another roadside ditch channel and further upstream is fed by another culvert of unknown origin.
No downstream connectivity. The roadside cement-lined channel just ends abruptly at a street intersection and it is unclear where flow is directed beyond that.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-02_01	Sediment depositing is evident on the cement curb on the E bank.
SBGB-S-02_02	Human-made berm created with the cement curb. Also evident in the photo is the leaf litter being washed away from parts of the bed of the channel.
SBGB-S-02_03	Culvert at the upstream end of this segment of channel showing upstream connectivity.
SBGB-S-02_04	Mudcracking visible at the center-bottom of photo.
SBGB-S-02_05	Wracking of organic litter is present and visible around the center of the photo, along the channel bed.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024
Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-S-04 | Date and Time: 5/8/2025 1340

Location (lat/long): 34.009710 -117.628314 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ______

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc. Man-made roadside ditch, collects local runoff and directs it into a culvert that is likely emptying into a storm drain. Short segment of roadside ditch, actually flows S to N, against the general flow of the surrounding area.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: ______
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ______
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ______ *to* ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ______ **to** ______
- [ ] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [X] **Water staining**

Other observed indicators? Describe: NA

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Project ID #: SBGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

The OHWM is determined by the shape of the channel and changes in the slope at the OHWM. Additional rationale includes water staining, the accumulation and wracking of organic + inorganic litter, and water staining at the OHWM. Also the washing away of leaf litter below the OHWM.

Additional observations or notes

This segment of the roadside ditch is oriented opposite from the general slope of the landscape, which goes predominantly from N down to S. But this channel flows from S to N. No upstream connectivity. Downstream the channel empties into a culvert with an unknown end point, likely flows into a storm drain system.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-04_01	Human-made berm evident in the photo on both banks, comprised of cement channel walls + curb.
SBGB-S-04_02	wracking and the presence of organic + inorganic litter is evident along with water staining.
SBGB-S-04_03	Leaf litter washed away from center of channel bed.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: San Bernardino Grove Basin	Site Name: SBGB-5-05	Date and Time: 5/8/2025 1123
Location (lat/long): 34.011745 -117.628328	Investigator(s): David Tafoya	

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other:

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc. Cement-lined roadside ditch with some evidence of sediment deposition. No upstream connectivity, local runoff is collected and is connected downstream to a storm drain. Erosional features such as scouring / erosion of asphalt bank.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other:
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:*
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [/] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [/] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ____ to ____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ____ **to** ____
- [ ] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe: NA

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Project ID #: SBGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

The OHWM is determined by the slope of the channel including a cement curb as the W bank and a slope in the asphalt serving as the E bank. Erosional features at the OHWM, as well as wracking at the OHWM, and leaf litter being washed away below the OHWM

Additional observations or notes No upstream connectivity to waters at N end, the roadside ditch is separated by a road crossing. Local rain runoff is directed into the channel along the side of the road as it makes its way downstream, ultimately flowing into a storm drain.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-05_01	Image shows the man-made curb/levee serving as the W bank of the channel, as well as leaf litter being washed away.
SBGB-S-05_02	Downstream connectivity at the S end of this channel, where water flow enters a storm drain.
SBGB-S-05_03	Erosional features evident, showing the asphalt eroding away more in the channel. Also evident is some wracking of leaf litter and trash.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024 Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-5-06 | Date and Time: 5/8/2025 1150

Location (lat/long): 34.012647 -117.628212 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc. Man-made roadside ditch, cement-lined and generally with substantial sediment build up throughout, Channelization with erosional features and sediment deposition. Changes in the slope of the banks and changes in vegetation density also present.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] *Other:* ____
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [/] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ____ *to* ____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ____ **to** ____
- [X] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Unvegetated along bed to dense grasses along banks.

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [ ] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe: NA

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Project ID #: SRGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

OHWM determined by changes in the slope of the banks at the OHWM, changes in vegetation density at the OHWM. Mudcracks, sediment deposition, vegetation matting, pooling, leaf litter washed away are all indicators present below the OHWM.

Additional observations or notes

Roadside ditch channel, lined with cement + with accumulated soil present in the channel. Upstream connectivity exists by a culvert connecting to another roadside ditch upstream + further upstream the channels are fed by at least 2 irrigation channels by culverts. Downstream the channel flows into a storm drain.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-06_01	Downstream connectivity where the channel flows into a storm drain.
SBGB-S-06_02	Pooling is evident near center of the photo.
SBGB-S-06_03	The photo depicts the changes in the slope of the banks, including a cement curb at the E bank and a drop in the level of the asphalt at the top of the W bank.
SBGB-S-06_04	Changes in vegetation density can be seen along this portion of the channel, as well as leaf litter being washed away.
SBGB-S-06_05	Upstream connectivity shown where a culvert is present at the crossing, where the water is pooled near the center of the photo.

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET
The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024 Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-S-08 | Date and Time: 5/8/2025 1513

Location (lat/long): 34.014940 -117.628246 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ______

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Man-made roadside ditch with erosional features and sediment deposition. Changes in slope of bank and upstream connectivity as the channel is fed by at least two irrigation channels upstream.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic Indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] *Other:* ______
- [X] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ______
- [X] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [/] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [/] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [/] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment Indicators

- [ ] **Soil development**
- [/] **Changes in character of soil**
- [/] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ______ *to* ______
  - [ ] *upper limit of sand-sized particles*
  - [/] *silt deposits*

Vegetation Indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ______ **to** ______
- [/] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe:

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Project ID #: SBGB

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

OHWM determined by changes in the slope of the banks at the OHWM, changes in vegetation density below the OHWM. Mudcracks, sediment deposition, vegetation wracking, leaf litter washed away, and pooling are indicators present below the OHWM.

Additional observations or notes

Roadside ditch that is lined with cement and with accumulated soil present. Upstream connectivity exists, as this channel is fed by at least 2 irrigation culverts from the adjacent fields. Downstream the channel connects to another roadside ditch by a culverted underground section, and ultimately drains into a storm drain further down stream.

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not:

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
SBGB-S-08_01	Culvert at the downstream end is shown, as well as wracking of organic + inorganic litter, and depositional features showing silty soil depositing
SBGB-S-08_02	Pooling is evident at bottom right of photo. Also showing upstream connectivity as the channel is fed by an irrigation channel culvert.
SBGB-S-08_03	Photo shows silt depositing and erosional properties, as well as the change in the slope along the E bank.
SBGB-S-08_04	Change in vegetation density is evident along the bed of the channel, as well as depositional + erosional features

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U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved - OMB No. 0710-0024
Expires: 2027-09-30

Project ID #: San Bernardino Grove Basin | Site Name: SBGB-S-07 | Date and Time: 5/8/2025 1255

Location (lat/long): 34.014257 -117.628353 | Investigator(s): David Tafoya

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [ ] topographic maps
- [ ] Other: ______

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc. Man-made cement-lined, roadside ditch with upstream connectivity to a flood control channel at the N end. Downstream the channel is interrupted by a street crossing.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [X] **Break in slope**
  - [X] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: ______
- [/] **Shelving**
  - [ ] *shelf at top of bank*
  - [ ] *natural levee*
  - [X] *human-made berms or levees*
  - [ ] *other berms:* ______
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [/] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** ______ **to** ______
- [ ] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [/] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [/] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe: NA