

I & 32ND STREET STORM DRAINAGE IMPROVEMENT PROJECT

**APPENDIX A AIR QUALITY, GREENHOUSE GAS, AND ENERGY
MODELING OUTPUTS**

Project Name: I Street-32nd Street Storm Drain Improvement Project
Location: Intersection of I st and 32nd St, North Highlands, CA (appr. 38.683750, -121.392626)
Air District: SMAQMD

Construction Start: Jun-24
Construction Duration: 60 days
Operational Year: N/A - No operational emissions
Development Size: Approximately 20 acres
Scope (from PD): 2150 lineal feet of drainage pipe, 10 storm drain manholes, two storm drain inlets, and an outfall to Robla Creek

Unless otherwise noted, land use information came from Project Description, 12-5-2023

CalEEMod Land Use	Acres	Construction Phase	Construction Phase Duration (days)	Equipment Type	Equipment Quantity	Usage (hours/day)	Size (hp)	Notes
Linear -> Road Construction	1.48	Demo	30 days	Dump truck	2	8.0	CalEEMod Defaults	Used for demolition and trench excavation. Based on inputs provided (8 hours/day for 30 days) model as an off-highway truck rather than modeling as onroad trips.
				Excavator	1	8.0		
				Backhoe	1	8.0		
				Loader	1	8.0		Note that loader was not listed as a piece of equipment in "I 32nd Storm Drain Project Info Requests - DWR Response.docx"
		Site prep	60 days	Onroad Worker Trips	20 one-way trips/day	N/A		Approximately 10 workers on the jobsite every day per "I 32nd Storm Drain Project Info Requests - DWR Response.docx" - put workers in site prep phase since it will be over the entire 60 day construction duration
				Vendor Trips	~1 one-way trip/day	N/A		Pipeline and precast manholes delivery listed to be used "as needed to remove, load, or set equipment"
								Flatbed trucks are approximately 48' in length and 8' in width. Assume that each truck will carry 4 pipeline segments per trip, each segment 44' in length, so ~12 round trips for pipeline. Conservatively assumed an additional truck trip per 2 storm drain manhole (5 round trips total). Concrete was listed as happening over 15 days, assumed 1 round trip per day for 15 days. Total of 32 round trips over the 60 days.
		Concrete truck	15 days	Concrete truck	1	4.0		Concrete trucks listed to be used "as needed to remove, load, or set equipment" - concrete trucks mentioned in "I 32nd Storm Drain Project Info Requests - DWR Response.docx"
		Paving	10 days	Scraper	1	4.0		No scraper or grader was listed in the construction equipment, but one was assumed to account for smoothing out / flattening the ground prior to paving.
				Paving machine	1	4.0		Calculated lot acreage for construction activities based on feet of pipe needed from PD and 30 ft ROW. Account for 1.48 acres of asphalt in CalEEMod for purposes of estimating ROG emissions.
Roller	1			4.0				

No import/export of materials assumed. Conservatively assumed all phases overlap.

I Street-32nd Street Storm Drain Improvement Project
Energy Calculations

Construction Energy Consumption

Total Construction Scenario

Phase	Source	MT CO ₂ ^a	Fuel Type	Emission Factor (lb CO ₂ /gallon) ^b	Gallons
<i>Demolition</i>	<i>Offroad Equip</i>	<i>24.1</i>	<i>Diesel</i>	<i>22.45</i>	<i>2,370</i>
	<i>Worker</i>	<i>0.0</i>	<i>Gas</i>	<i>17.86</i>	<i>-</i>
	<i>Vendor</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
	<i>Hauling</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
<i>Site Preparation</i>	<i>Offroad Equip</i>	<i>14.1</i>	<i>Diesel</i>	<i>22.45</i>	<i>1,384</i>
	<i>Worker</i>	<i>4.1</i>	<i>Gas</i>	<i>17.86</i>	<i>508</i>
	<i>Vendor</i>	<i>0.6</i>	<i>Diesel</i>	<i>22.45</i>	<i>56</i>
	<i>Hauling</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
<i>Concrete Trucks</i>	<i>Offroad Equip</i>	<i>3.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>296</i>
	<i>Worker</i>	<i>0.0</i>	<i>Gas</i>	<i>17.86</i>	<i>-</i>
	<i>Vendor</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
	<i>Hauling</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
<i>Paving</i>	<i>Offroad Equip</i>	<i>4.2</i>	<i>Diesel</i>	<i>22.45</i>	<i>416</i>
	<i>Worker</i>	<i>0.0</i>	<i>Gas</i>	<i>17.86</i>	<i>-</i>
	<i>Vendor</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
	<i>Hauling</i>	<i>0.0</i>	<i>Diesel</i>	<i>22.45</i>	<i>-</i>
Total Construction	Offroad Equip	45.5	Diesel	22.45	4,466
	Worker	4.1	Gas	17.86	508
	Vendor	0.6	Diesel	22.45	56
	Hauling	0.0	Diesel	22.45	-
Total Demand				Diesel	4,522
				Gasoline	508

Sources:

^a Modeled by AECOM in 2023.

^b U.S. Energy Information Administration released September 7, 2023 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

I Street-32nd Street Storm Drain Improvement Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	I Street-32nd Street Storm Drain Improvement Project
Construction Start Date	6/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	18.0
Location	38.68375, -121.392626
County	Sacramento
City	Unincorporated
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	630
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	0.41	Mile	1.48	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.53	2.13	16.4	18.2	0.05	0.63	0.21	0.84	0.58	0.05	0.63	—	5,476	5,476	0.22	0.05	1.02	5,499
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.14	0.12	0.90	1.16	< 0.005	0.03	0.02	0.06	0.03	0.01	0.04	—	303	303	0.01	< 0.005	0.05	304
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.02	0.16	0.21	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	50.2	50.2	< 0.005	< 0.005	0.01	50.4

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.53	2.13	16.4	18.2	0.05	0.63	0.21	0.84	0.58	0.05	0.63	—	5,476	5,476	0.22	0.05	1.02	5,499
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.14	0.12	0.90	1.16	< 0.005	0.03	0.02	0.06	0.03	0.01	0.04	—	303	303	0.01	< 0.005	0.05	304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.16	0.21	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	50.2	50.2	< 0.005	< 0.005	0.01	50.4

3. Construction Emissions Details

3.1. Demo (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	6.23	6.02	0.02	0.22	—	0.22	0.21	—	0.21	—	2,660	2,660	0.11	0.02	—	2,669
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.34	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	146	146	0.01	< 0.005	—	146

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Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.1	24.1	< 0.005	< 0.005	—	24.2
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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3.3. Site Prep (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	3.25	4.84	0.01	0.14	—	0.14	0.12	—	0.12	—	723	723	0.03	0.01	—	725
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.57	< 0.005	0.02	—	0.02	0.01	—	0.01	—	85.1	85.1	< 0.005	< 0.005	—	85.4
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.1	14.1	< 0.005	< 0.005	—	14.1

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.30	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	232	232	0.01	0.01	0.95	235
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.5	29.5	< 0.005	< 0.005	0.08	30.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.9	24.9	< 0.005	< 0.005	0.05	25.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.47	3.47	< 0.005	< 0.005	< 0.005	3.63
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.11	4.11	< 0.005	< 0.005	0.01	4.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.60
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Concrete Truck (2024) - Unmitigated

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

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

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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.23	1.56	1.51	0.01	0.06	—	0.06	0.05	—	0.05	—	665	665	0.03	0.01	—	667
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.02	3.02	< 0.005	< 0.005	—	3.03
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

3.7. Paving (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	5.24	4.54	0.01	0.21	—	0.21	0.20	—	0.20	—	1,167	1,167	0.05	0.01	—	1,171
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.6	25.6	< 0.005	< 0.005	—	25.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.24	4.24	< 0.005	< 0.005	—	4.25
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Demo	Linear, Grubbing & Land Clearing	6/1/2024	6/30/2024	5.00	20.0	—
Site Prep	Linear, Grading & Excavation	6/1/2024	7/31/2024	5.00	43.0	—
Concrete Truck	Linear, Grading & Excavation	6/1/2024	6/15/2024	5.00	10.0	—
Paving	Linear, Paving	6/3/2024	6/12/2024	5.00	8.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demo	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Site Prep	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Prep	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Concrete Truck	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Paving	Rollers	Diesel	Average	1.00	4.00	36.0	0.38
Paving	Paving Equipment	Diesel	Average	1.00	4.00	89.0	0.36
Paving	Scrapers	Diesel	Average	1.00	4.00	423	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demo	—	—	—	—
Demo	Worker	0.00	14.3	LDA,LDT1,LDT2
Demo	Vendor	0.00	8.80	HHDT,MHDT
Demo	Hauling	0.00	20.0	HHDT
Demo	Onsite truck	—	—	HHDT
Site Prep	—	—	—	—
Site Prep	Worker	20.0	14.3	LDA,LDT1,LDT2
Site Prep	Vendor	1.00	8.80	HHDT,MHDT
Site Prep	Hauling	0.00	20.0	HHDT
Site Prep	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	14.3	LDA,LDT1,LDT2

Paving	Vendor	0.00	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Concrete Truck	—	—	—	—
Concrete Truck	Worker	0.00	14.3	LDA,LDT1,LDT2
Concrete Truck	Vendor	0.00	8.80	HHDT,MHDT
Concrete Truck	Hauling	0.00	20.0	HHDT
Concrete Truck	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

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

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demo	—	—	1.48	0.00	—
Site Prep	—	—	1.48	0.00	—
Concrete Truck	—	—	1.48	0.00	—

5.6.2. Construction Earthmoving Control Strategies

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

Land Use	Area Paved (acres)	% Asphalt
Road Construction	1.48	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	375	0.01	< 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
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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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	21.8	annual days of extreme heat
Extreme Precipitation	6.35	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 $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

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

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	0	0	0	N/A
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The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

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

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	60.7
AQ-PM	33.3
AQ-DPM	15.8
Drinking Water	61.3
Lead Risk Housing	97.0
Pesticides	0.00
Toxic Releases	20.3
Traffic	29.7
Effect Indicators	—
CleanUp Sites	69.8
Groundwater	39.4
Haz Waste Facilities/Generators	39.8
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	96.9
Cardio-vascular	92.3
Low Birth Weights	40.5
Socioeconomic Factor Indicators	—
Education	51.7
Housing	52.6
Linguistic	40.4
Poverty	70.5
Unemployment	40.6

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	22.87950725
Employed	13.55062235
Median HI	26.58796356
Education	—
Bachelor's or higher	15.24445015
High school enrollment	22.01976132
Preschool enrollment	6.711151033
Transportation	—
Auto Access	70.20402926
Active commuting	42.65366354
Social	—
2-parent households	24.54767099
Voting	45.02758886
Neighborhood	—
Alcohol availability	64.49377647
Park access	40.34389837
Retail density	32.83716156
Supermarket access	22.04542538
Tree canopy	86.43654562
Housing	—
Homeownership	64.41678429
Housing habitability	46.37495188
Low-inc homeowner severe housing cost burden	51.19979469
Low-inc renter severe housing cost burden	4.38855383
Uncrowded housing	66.03361992

Health Outcomes	—
Insured adults	34.04337226
Arthritis	0.0
Asthma ER Admissions	3.8
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	10.1
Cognitively Disabled	26.7
Physically Disabled	14.9
Heart Attack ER Admissions	5.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	42.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	53.3
Elderly	43.3
English Speaking	38.2
Foreign-born	39.3
Outdoor Workers	15.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	47.7
Traffic Density	30.7
Traffic Access	23.0
Other Indices	—
Hardship	63.9
Other Decision Support	—
2016 Voting	28.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	58.0
Healthy Places Index Score for Project Location (b)	21.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction phases/durations from PD. Assume all phases overlap.
Construction: Off-Road Equipment	Equipment per PD
Construction: Trips and VMT	Vendor trips estimated based on material to be delivered. Up to 10 workers per day, per the PD.
Construction: Dust From Material Movement	—